Sinergie
SIMA
Management
Conference

Grand challenges: companies and universities working for a better society

Full Papers

University of Pisa - Sant'Anna School of Advanced Studies, Pisa

September 7-8, 2020

Referred Electronic Conference Proceedings of Sinergie - Sima Management Conference
Grand challenges: companies and universities working for a better society Pisa, 7-8 September 2020
University of Pisa - Sant'Anna School of Advanced Studies, Pisa

ISBN 97888943937-3-6

I Referred Electronic Conference Proceeding sono pubblicati *online* sul portale di Sinergie Italian Journal of Management
http://www.sijm.it

Via Interrato dell'Acqua Morta, 26
37129 Verona - Italy

Sinergie
SIMA
Management
Conference

Grand challenges: companies and universities working for a better society

7-8 September 2020

Referred Electronic Conference Proceedings

Full Papers

a cura di

Sandro Castaldo, Elisa Giuliani, Marco Frey e Marta Ugolini

Conference chairs

SANDRO CASTALDO	*Bocconi University*
MARCO FREY	*Scuola Superiore Sant'Anna*
ELISA GIULIANI	*University of Pisa*
MARTA UGOLINI	*University of Verona*

Former Chairs

CLAUDIO BACCARANI	*University of Verona*
GAETANO M. GOLINELLI	*Sapienza University of Roma*

Scientific and international coordination

ANGELO BONFANTI	*University of Verona*
DANIELE DALLI	*University of Pisa*
ARABELLA MOCCIARO LI DESTRI	*University of* Palermo
ANDREA PICCALUGA	*Scuola Superiore Sant'Anna, Pisa*

Scientific committee

FEDERICO BRUNETTI	*University of Verona*
LUIGINO BRUNI	*LUMSA, Roma*
FRANCESCA CABIDDU	*University of Cagliari*
MARIO CALDERINI	*Politecnico di Milano*
MICHELE CANO	*University of West Scotland, UK*
PEGGY CHAUDRY	*Villanova University, USA*
MARIA COLURCIO	*University of Catanz*aro
VALENTINA DE MARCHI	*University Padova*
IRENE HENRIQUES	*York University, Canad*a
CHARLES HOFACKER	*Florida State University, U*sa
GENNARO IASEVOLI	*LUMSA, Roma*
EMANUELE INVERNIZZI	*IULM University, Milan*o
BEATRICE LUCERI	*University of Parma*
ALBERTO MATTIACCI	*Sapienza University of R*oma
PATRICIA MOURA E Sa	*University of Coimbra, Portugal*
MARIA ROSARIA NAPOLITANO	*University of Napoli Parthenope*
ANTIGONI PAPADIMITRIOU	*Western Kentucky University, Usa*
ROBERTO PARENTE	*University of Salerno*
ALBERTO PASTORE	*Sapienza University of Roma*
TONINO PENCARELLI	*University of Urbino Carlo Bo*
ALESSANDRA PERRI	*Ca' Foscari University of Venice*
FRANCESCO RIZZI	*University of Perugia*
FRANCESCO RULLANI	*Ca' Foscari University of Venice*
ELITA SCHILLACI	*University of Catan*ia
PHILIP SHAPIRA	*Alliance Manchester Business School, UK; Georgia Institute of Technology, USA*
PAOLA SIGNORI	*University of Verona*
ANNALISA TUNisini	*University Cattolica del Sacro Cuore, Milan*o
ALFONSO VArgas	*University of Huelva, Spain*
TIZIANO VESCovi	*Ca' Foscari University of Venice*
DONATA VIANELLI	*University of Trieste*
ANTONELLA ZUCCHELLA	*University of Pavia*

Organizing committee

ANTONELLA ANGELINI	*University of Pisa*
ELEONORA ANNUNZIATA	*Scuola Superiore Sant'Anna, Pisa*
MATTEO CORCIOLANI	*University of Pisa*
ALBERTO DI MININ	*Scuola Superiore Sant'Anna, Pisa*
ALESSANDRO GANDOLFO	*University of Pisa*
CRISTINA MARULLO	*Scuola Superiore Sant'Anna, Pisa*
FEDERICA NIERI	*University of Pisa*

Editorial staff

FABIO CASSIA AND NICOLA COBELLI	University of Verona
LAURA CIARMELA	(laura.ciarmela@sinergieweb.it)
ADA ROSSI	(redazione@sinergieweb.it)
ADELE FERRAGAMO	(segreteria@societamanagement

Registration and invoicing

ANNALISA ANDRIOLO	(amministrazione@sinergieweb.it)

La Direzione e il Comitato Scientifico del Convegno di Sinergie sono riconoscenti ai Referee che hanno collaborato al processo di *peer review* dei *paper*

TINDARA ABBATE	*Università di Messina*
BARBARA AQUILANI	*Università della Tuscia*
DANIELA BAGLIERI	*Università di Messina*
ANTHONY BUONO	*Bentley University*
MARIA ROSITA CAGNINA	*Università di Udine*
ELENA CANDELO	*Università di Torino*
ROSSELLA CANESTRINO	*Università di Napoli Parthenope*
LUIGI CANTONE	*Università di Napoli Federico II*
FRANCESCO CAPONE	*Università di Firenze*
MARIA COLURCIO	*Università Magna Grecia di Catanzano*
LAURA COSTANZO	*University of Southampton*
ALESSANDRA COZZOLINO	*Sapienza Università di Roma*
GIORGIA D'ALLURA	*Università di Catania*
AUGUSTO D'AMICO	*Università di Messina*
ALFREDO DE MASSIS	*Università di Bolzano*
GIACOMO DEL CHIAPPA	*Università di Sassari*
SONIA FERRARI	*Università della Calabria*
MARIA ANTONELLAFERRI	*Universitas Mercatorum*
FULVIO FORTEZZA	*Università di Ferrara*
ALBERTO GRANDO	*Università Commerciale "Luigi Bocconi"*
GENNARO IASEVOLI	*Università Lumsa di Roma*
FRANCESCO IZZO	*Università degli Studi della Campania Luigi Vanvitelli*
TIZIANA LA ROCCA	*Università di Messina*
BEATRICE LUCERI	*Università di Parma*
VITTORIA MARINO	*Università di Salerno*
JACQUES MARTIN	*Universite' Du Sud Toulon-Var*
PIERO MASTROBERARDINO	*Università di Foggia*
MICHELA MATARAZZO	*Università del Sannio*
ALESSANDRA MAZZEI	*Libera Università di Lingue e Comunicazione IULM*
LAURA MICHELINI	*Università Lumsa di Roma*
PAOLA PANICCIA	*Università di Roma Tor Vergata*
ANTIGONI PAPADIMITRIOU	*Johns Hopkins School of Education, Baltimore, Western Kentucky University,USA*
ALBERTO PASTORE	*Sapienza Università di Roma*
GIOVANNA PEGAN	*Università di Trieste*
ANNA CLAUDIA PELLICELLI	*Università di Torino*
LUCA PETRUZZELLIS	*Università di Bari*
TOMMASO PUCCI	*Università di Siena*
YOSSI RAANAN	*Levinsky College of Education, Yaffa-Tel Aviv, Israel*
ANGELO RIVIEZZO	*Università del Sannio*
MARCELLO SANSONE	*Università di Cassino e del Lazio Meridionale*
FRANCESCO SCHIAVONE	*Università di Napoli Parthenope*
ALFONSO SIANO	*Università di Salerno*
PIERPAOLO SINGER	*Università di Salerno*
ERNESTO TAVOLETTI	*Università di Macerata*
ANTONIO TENCATI	*Università di Brescia*
FRANCESCO TESTA	*Sant'Anna Scuola Universitaria Superiore Pisa*

ROBERTA TRESCA	*Università di Chieti e Pescara*
ANNALISA TUNISINI	*Università Cattolica del Sacro Cuore*
MARIA VERNUCCIO	*Sapienza Università di Roma*
ROBERTO VONA	*Università di Napoli Federico II*
VINCENZO ZAMPI	*Università di Firenze*
LORENZO ZANNI	*Università di Siena*

Al Lettore,

questo volume accoglie gli extended abstract del Convegno Sinergie-SIMA 2020, dal titolo *Grand challenges: Companies and Universities working for a better society*, Università di Pisa, Scuola Superiore Sant'Anna, Pisa, 7-8 settembre 2020.

Le società contemporanee si trovano di fronte a un bivio: da un lato i governi sono sotto pressione per raggiungere obiettivi ambiziosi di crescita economica, dall'altro tale crescita alimenta complesse sfide ambientali e sociali, parte degli obiettivi di sviluppo sostenibile, o Agenda 2030, delle Nazioni Unite. Ciò spinge verso un ripensamento del capitalismo così come tradizionalmente inteso.

Lo scopo del Convegno è di discutere del ruolo delle imprese e dell'università per affrontare queste sfide. Per quanto riguarda le imprese, un focus particolare è rivolto agli impatti positivi che esse possono esercitare sulla società e sull'ambiente attraverso varie iniziative: dagli investimenti responsabili al coinvolgimento degli stakeholder per affrontare rilevanti problematiche sociali. Altrettanto articolato è il contributo che le università possono offrire attraverso le proprie attività di ricerca, formazione e terza missione.

Gli Extended Abstract racconti in questo volume affrontano la tematica con una varietà di argomenti, punti di vista, prospettive.
Vengono altresì proposti studi e ricerche sul più ampio e generale capo del management, cui spetta un ruolo da protagonista anche al di fuori delle imprese.

Sandro Castaldo, Elisa Giuliani, Marco Frey e Marta Ugolini

Cari Lettori e Convegnisti,

il *call for paper* del Convegno Sinergie-SIMA 2020 Conference dal titolo *Grand challenges: companies and universities working for a better society* ha previsto la possibilità di presentare *extended abstract* oppure *full paper*. In totale sono pervenuti in redazione 113 *extended abstract* e 35 *full paper*.

Per gli *extended abstract*, la valutazione dei contributi ricevuti è stata operata dai Chair e dal coordinamento scientifico in base alla coerenza con il tema del Convegno e/o con gli studi di management secondo l'articolazione dei Gruppi Tematici SIMA. Sono state altresì valutate la chiarezza e la rilevanza (anche potenziale) dei contenuti proposti.

Per i *full paper*, la procedura di valutazione dei contributi è stata condotta secondo il meccanismo della *peer review* da parte di due referee anonimi, docenti universitari ed esperti dell'argomento, scelti all'interno dei soci SIMA e della comunità di Sinergie.

In particolare, nella valutazione dei contributi i referee hanno seguito i seguenti criteri:

- chiarezza degli obiettivi di ricerca,
- correttezza dell'impostazione metodologica,
- coerenza dei contenuti proposti con il tema/track del convegno e/o con gli studi di management,
- contributo di originalità/innovatività,
- rilevanza in relazione al tema/track del convegno e/o agli studi di management,
- chiarezza espositiva,
- significatività della base bibliografica.

L'esito del referaggio ha portato a situazioni di accettazione integrale, accettazione con suggerimenti e non accettazione. In caso di giudizio discordante la decisione è stata affidata ai Chair. Ogni lavoro è stato poi rinviato agli Autori completo delle schede di referaggio per la attuazione delle modifiche suggerite dai referee.

A seguito del processo di valutazione sono stati accettati 23 *full paper* e 111 *extended abstract*, pubblicati in due distinti volumi.

Tutti gli *extended abstract* di questo volume sono stati presentati e discussi durante il Convegno e pubblicati *online* sul portale della rivista Sinergie (***www.sijm.it***). Quest'anno sono anche disponibili on line i video con le presentazioni registrate dagli Autori.

Nel ringraziare tutti gli Autori per la collaborazione ci auguriamo che questo volume contribuisca a fornire un avanzamento di conoscenze sul ruolo che le imprese e l'università possono svolgere per conciliare la crescita economica e la necessità di affrontare le complesse sfide globali ambientali e sociali.

I Chair e il Coordinamento Scientifico

Marco Frey, Elisa Giuliani, Marta Ugolini, Sandro Castaldo,
Arabella Mocciaro Li Destri, Angelo Bonfanti

INDICE

La gamification a supporto dei processi di reclutamento e formazione delle risorse umane. Evidenze da un multiple case study

FRANCESCA IANDOLO[*] IRENE FULCO[•] FRANCESCA LOIA[♠] PIETRO VITO[**]

Abstract

Obiettivi. *Il paper, dopo aver fornito un inquadramento teorico del concetto di gamification, si propone di analizzare le opportunità di utilizzo del game thinking nell'ambito della gestione delle risorse umane al fine di migliorare i processi di reclutamento, selezione e formazione del personale.*

Metodologia. *La metodologia si basa su un approccio esplorativo che segue il modello del Multiple Case Study. Nello specifico, i casi analizzati riguardano tre note multinazionali attive in settori differenti: McDonald's, Walmart e PwC.*

Risultati. *Alla luce dei tre casi studio sono state identificate le problematiche aziendali che hanno portato all'adozione di una soluzione gamificata e i conseguenti vantaggi ottenuti.*

Limiti della ricerca. *Le considerazioni effettuate potrebbero essere approfondite attraverso l'adozione di ulteriori metodologie. La somministrazione di questionari in profondità a piccole e medie imprese del contesto italiano consentirebbe di evidenziare similarità e differenze rispetto alle multinazionali e di rendere i risultati maggiormente generalizzabili.*

Implicazioni pratiche. *Facendo leva sul dinamismo e sulla versatilità dei processi di sviluppo e apprendimento tecnologico, il paper fornisce idee e strumenti manageriali utili a rendere i processi di reclutamento e formazione più coerenti sia con le necessità delle imprese che con le caratteristiche specifiche delle risorse umane*.

Originalità del lavoro. *L'originalità del lavoro risiede nel tentativo di evidenziare come l'utilizzo di tecniche gamificate nell'ambito della gestione delle risorse umane possa essere coerente con un modo di intendere i processi di reclutamento e formazione in termini sia di capacità dinamiche che competenze, evidenziando, pertanto, la necessità di intendere la conoscenza come "T-Shaped".*

Parole chiave: *Gamification; Risorse Umane; Reclutamento; Formazione; Multiple Case Study; Conoscenza "T-Shaped"*

Objectives. *The paper, after providing a theoretical framework of the concept of gamification, aims to analyze the opportunities enabled by the introduction of game thinking in the context of human resource management in order to improve the recruitment, selection and training of personnel.*

Methodology. *The methodology is based on an exploratory approach that follows the Multiple Case Study model. Specifically, the cases analyzed pertain three well-known multinational companies active in three different sectors: McDonald's, Walmart and PwC.*

Findings. *In light of the three case studies, the company problems that led to the adoption of a gamified solution and the consequent advantages were identified.*

Research limits. *The considerations made can be deepened through the adoption of additional methodologies. The submission of in-depth questionnaires to small and medium-sized companies in the Italian context can highlight similarities and differences compared to multinational companies and obtain more generalized results.*

Practical implications. *Leveraging on the dynamism and versatility of technological development and learning processes, the paper provides ideas and managerial tools useful for making the recruitment and training processes more coherent both with the needs of companies and with the specific characteristics of human resources.*

Originality of the study. *The originality of the work lies in the attempt of highlighting how the use of gamified techniques in the field of human resource management can be consistent with a way of understanding the recruitment and training processes in terms of both dynamic skills and competences, highlighting, therefore, the need to understand knowledge as "T-Shaped".*

Key words: *Gamification; Human Resources; Recruiting; Formation; Multiple Case Study; "T-Shaped" Knowledge*

[*] Ricercatore a tempo determinato in Economia e Gestione delle Imprese - Sapienza Università di Roma - Italy
e-mail: francesca.iandolo@uniroma1.it

[•] Assegnista di Ricerca in Economia e Gestione delle Imprese - Università degli Studi della Tuscia di Viterbo - Italy
e-mail: irenefulco@unitus.it

[♠] Assegnista di Ricerca in Economia e Gestione delle Imprese - Università degli Studi di Napoli Federico II - Italy
e-mail: francesca.loia@uniroma1.it

[**] Dottorando di Ricerca in Management - Sapienza Università di Roma - Italy
e-mail: pietro.vito@uniroma1.it

1. Introduzione

Le imprese stanno attraversando un periodo di grandi trasformazioni e cambiamenti, in un momento in cui il ritmo al quale le tecnologie di rete si sviluppano ed affermano è sempre più incalzante. In aggiunta, la rivoluzione tecnologica in corso ha portato ad una sempre maggiore interconnessione tra innumerevoli elementi, tra cui sistemi e servizi industriali, che vengono sempre più interfacciati tramite ICT e che disegnano le imprese e le organizzazioni del futuro (Mokyr, 2002; Troisi *et al.*, 2018). L'industria 4.0 e le tecnologie ad essa associate, come il cloud, i dispositivi mobili, i big data, l'Internet of Things (IoT) e l'Internet of Things industriale (IIoT), sono tutte conseguenze di processi innovativi dirompenti che se, da un lato, promettono nuove opportunità, dall'altro impattano notevolmente sulle tradizionali dimensioni d'impresa. Tra queste una delle più significative è senza dubbio quella relativa alle risorse umane e, in particolare, al modo in cui il lavoro viene vissuto ed inteso.

Il mondo del lavoro, tradizionalmente associato a serietà e formalità, può riscontrare, al giorno d'oggi, atteggiamenti di demotivazione da parte dei lavoratori coinvolti nei diversi processi di produzione, vendita, acquisto e consumo (Burke, 2016). Ad esempio, quando l'inerzia e i diffusi approcci routinari permeano il sistema lavorativo, i diversi attori possono dubitare del valore del loro operato e provare mancanza di interesse, giungendo, a volte, ad un'alienazione psicologica generale e ad una conseguente riduzione della perfomance (Abu-Jarour, 2014; Seidler *et al.*, 2014; Quattrociocchi *et al.*, 2018).

Al fine di sovvertire questa tendenza di demotivazione lavorativa ed in linea con la sempre maggiore presenza della tecnologia all'interno dei processi aziendali, nell'ultimo decennio si è cominciato a parlare di risorse umane (RU) e *gamification*. L'idea di poter inserire all'interno delle organizzazioni strumenti mutuati dai giochi in grado di far rendere al massimo delle proprie potenzialità i lavoratori nasce dalla considerazione che il *gaming* possa essere di supporto al mondo del lavoro. La sua applicazione in contesti lavorativi infatti potrebbe portare ad alti livelli di engagement e commitment da parte delle persone, così da introdurre cambiamenti favorevoli nelle organizzazioni e incentivarne l'innovazione (Burke, 2016). La gamification ha proprio l'obiettivo di trasferire/applicare, in contesti inizialmente ritenuti assai lontani come quelli lavorativi, sensazioni di realizzazione e coinvolgimento emotivo positivo generalmente legati al gioco preferito; un senso di interazione gratificante, di risultati e progressi costanti che rende ogni persona soddisfatta, indipendentemente dall'età o dalle condizioni sociali (McGonigal, 2011). La diffusione della gamification nei contesti aziendali sta portando ad una rivoluzione radicale su come progettare e gestire un ambiente di business, dalle attività basilari a quelle di massima rilevanza quali il marketing, la produttività, la valorizzazione delle risorse, l'innovazione, la sostenibilità e il customer care (Hugos, 2013).

L'obiettivo del presente lavoro è quello di analizzare le opportunità di utilizzo del game thinking nell'ambito della gestione delle risorse umane (GRU). In particolar modo, il paper vuole, da un lato, identificare i vantaggi che derivano dall'adozione di soluzioni gamificate all'interno di contesti aziendali, anche appartenenti a settori diversi, e, dall'altro, evidenziare come le dinamiche ludiche possano essere protagoniste di un ripensamento dei tradizionali metodi formativi e di apprendimento.

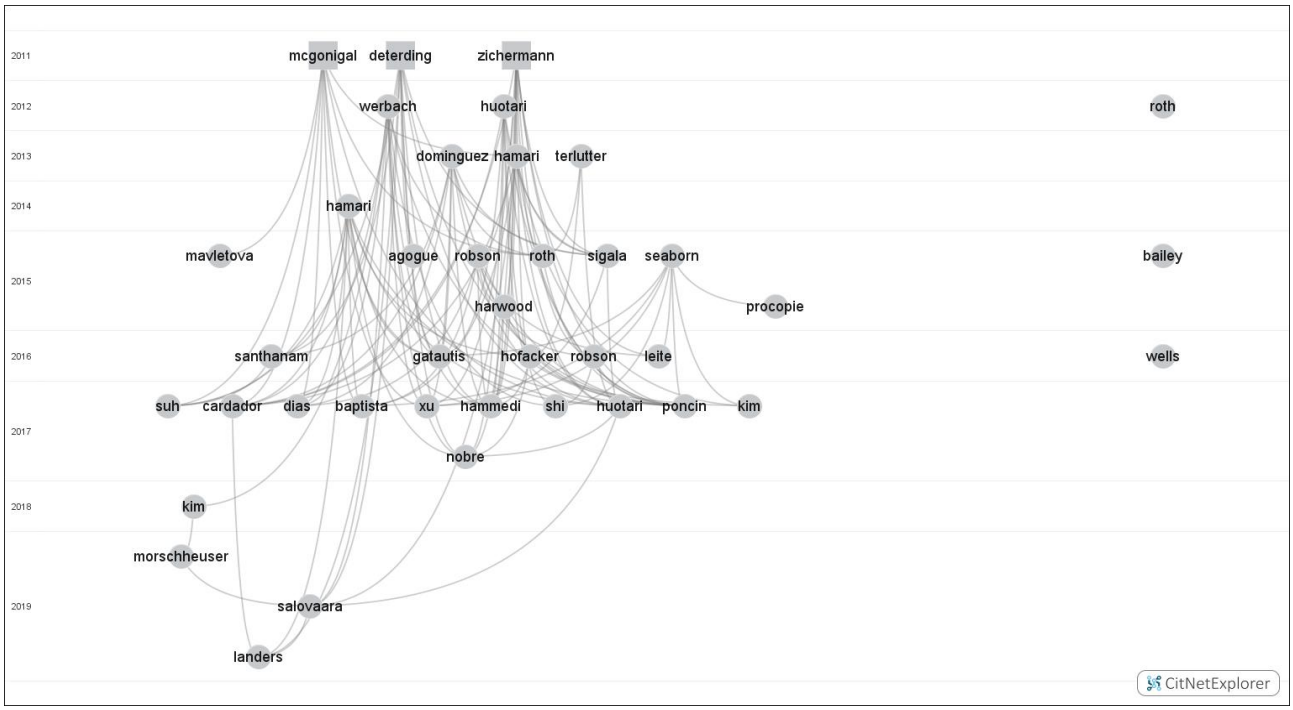
A tale scopo, dopo aver fornito un inquadramento teorico del concetto di gamification, il lavoro si concentra sull'utilizzo del game thinking per migliorare i processi di reclutamento, selezione e formazione del personale. Al fine di poter meglio comprendere cosa implica l'introduzione della gamification in una realtà aziendale, sono presentati tre casi di studio, esempi reali di organizzazioni che utilizzano elementi mutuati dal gioco nell'ambito della gestione strategica delle risorse umane. Il lavoro si conclude con la discussione dei risultati e delle possibili linee di ricerca future.

2. Gamification: literature review

L'interesse relativo alla possibile applicazione ad alcuni processi aziendali della gamification intesa come mutuazione di tecniche di *game design* volte ad aumentare o alterare un processo esistente nel mondo reale creandone una versione rivista che gli utenti percepiscano come un gioco (Landers *et al.*, 2018), risale all'inizio dell'ultimo decennio con i contributi di Deterding *et al.* (2011), Zichermann e Cunningham (2011) e McGonigal (2011). Da questi contributi hanno avuto origine numerosi approfondimenti teorici ed applicazioni.

In quel che segue, si illustrano i risultati della review della letteratura condotta utilizzando i metodi di analisi bibliometrica del *bibliographic coupling*, nel quale le relazioni sono costituite dai riferimenti bibliografici in comune tra essi, e delle *co-citations*, nel quale le relazioni sono costituite dalla frequenza con cui determinate pubblicazioni della letteratura precedente risultano citate insieme in quella successiva, riferiti ai 53 articoli scientifici restituiti dalla ricerca in Web of Science di "TITLE: (gamification) Refined by: DOCUMENT TYPES: (ARTICLE) AND WEB OF SCIENCE CATEGORIES: (BUSINESS OR MANAGEMENT) AND [excluding] PUBLICATION YEARS: (2020)". Come rappresentato in Figura 1, è possibile notare il crescente interesse all'argomento da parte degli Studiosi di business e management testimoniato dal moltiplicarsi dei contributi. Tale fenomeno è peraltro verificabile in termini quantitativi rivolgendo la medesima interrogazione ad uno qualunque dei data-base bibliografici disponibili (Web of Science, Scopus, Dimensions, da cui è possibile estrarre la più ampia gamma di metadati di ciascun contributo).

Fig. 1: Cronologia essenziale dei contributi sulla gamification



Fonte: elaborazione degli Autori in CitNet Explorer di (Van Eck e Waltman, 2014) dei meta-dati di 53 articoli scientifici restituiti dalla ricerca in Web of Science di "TITLE: (gamification) Refined by: DOCUMENT TYPES: (ARTICLE) AND WEB OF SCIENCE CATEGORIES: (BUSINESS OR MANAGEMENT) AND [excluding] PUBLICATION YEARS: (2020)"

Anche all'interno dei contributi immediatamente successivi a quelli citati in precedenza l'attenzione principale risulta rivolta a circoscrivere il concetto di gamification e pervenire a definizioni condivise. (Huotari e Hamari, 2012; Werbach e Hunter, 2012).

Come accade spesso quando si cerca di definire concetti nuovi, anche nel caso della "gamification" vengono proposte numerose definizioni, ciascuna influenzata, ovviamente, dal background culturale degli Studiosi.

Tra le più significative, ai fini del presente lavoro e senza pretesa di esaustività, si ricordano quelle generali di Deterding *et al.* (2011; 2011), che intendono la gamification come "the use of game design elements in non-game contexts", ovvero l'utilizzo di elementi di game design in contesti diversi dal gioco. Yohannis *et al.*, (2014) provano a definire la gamification utilizzando l'approccio lessicale come punto di partenza, pervenendo alla definizione "making or transforming something into a game, investing something with the attributes of game, or making something into a 'game' state", di Burke (2016), che definisce la gamification come "l'uso di meccaniche di gioco ed experience design per coinvolgere digitalmente e motivare le persone a raggiungere i loro obiettivi".

Il progressivo radicamento del concetto di gamification nella letteratura organizzativa e manageriale ha determinato il moltiplicarsi delle applicazioni che hanno interessato numerosi settori di attività socio-economiche, ambiti funzionali aziendali, tematiche scientifiche: education, turismo, health; marketing, sviluppo software, produzione e logistica; knowledge sharing, value creation, servitization e molti altri.

Lo sviluppo della letteratura organizzativa e manageriale sull'argomento, che si inscrive peraltro nel complessivo trend di crescita del numero dei contributi in tali discipline, ha incluso, infatti, aspetti sempre più diversi/ampi della vita aziendale: dallo studio della relazione tra gamification e motivazione del personale (Deterding, 2012; Richter *et al.*, 2015), che rappresenta tuttora il nucleo dell'interesse delle comunità scientifiche attive sull'argomento, alla considerazione del ruolo della gamification nell'engagement del personale stesso, ovvero al coinvolgimento nella risoluzione di problemi complessi al fine di generare idee trasformative attraverso l'innovazione e la condivisione delle conoscenze (Kumar e Raghavendran, 2015; Peischl *et al.*, 2014), al design della gamification finalizzato a guidare il comportamento competitivo e cooperativo durante il lavoro di squadra (Vegt *et al.*, 2015; Butler, 2015).

Relativamente ai settori di attività socio-economiche, un'attenzione primaria è richiamata dall'education: in ambito teorico, Devers e Gurung (2015), che intendendo la gamification come un insieme di esperienze risolutive che utilizzano elementi di gioco e game design, svolgono una riflessione critica sulle prospettive della sua applicazione nei processi educativi con riferimento alle applicazioni di nuove tecnologie all'insegnamento e all'apprendimento e su come la tecnologia abbia influenzato l'education in passato, e offrono intuizioni sull'impatto che i giochi potrebbero avere sull'education. Altri contributi in questo ambito si devono a Signori *et al.* (2018), Rosli *et al.* (2019) e Eliseeva *et al.* (2017).

Relativamente alle funzioni aziendali l'attenzione maggiore è rivolta al marketing. A partire dalla definizione di Huotari e Hamari (2012; 2017), che definiscono la gamification da una prospettiva di marketing dei servizi come "a service packaging where a core service is enhanced by a rules-based service system that provides feedback and interaction mechanisms to the user with an aim to facilitate and support the users' overall value creation", molti altri contributi hanno legato la gamification a diversi aspetti del marketing: dalla campagna di lancio di un mobile phone (Dymek, 2016) alla promozione degli eventi (Dillon e Olberding, 2016) e al customer engagement nel digital marketing (Kumar e Ravi kumar, 2019).

Un ulteriore ambito di applicazione di strumenti di game design è all'interno dei percorsi di training (Santhanam *et al.*, 2016; Armstrong e Landers, 2018), nel crowd-sourcing (Dergousoff e Mandryk, 2015; Sigala, 2015) e nel settore healthcare (Hammedi *et al.*, 2017; Lier e Breuer, 2019). Senza dimenticare il settore industriale nel quale sono stati sperimentati numerosi sistemi di questo tipo, che in generale si basano sul monitoraggio delle attività nella linea produttiva (Hambrick *et al.*, 2014).

Un recente sviluppo della gamification si è avuto nel campo delle Risorse Umane, relativamente al processo di selezione e formazione del personale, in cui alcune fasi precedentemente standardizzate e codificate sono state sostituite da applicazioni online (Armstrong *et al.*, 2016). In questa direzione si inserisce il paper proposto, che mira, difatti, ad approfondire il contributo del game thinking alla gestione del personale e ad illustrare, inoltre, soluzioni alternative nella realtà aziendale, legate alla necessità di una conoscenza sempre più flessibile e multidimensionale.

A tal proposito, il lavoro intende rispondere alle seguenti domande di ricerca:

1) *È possibile identificare, in termini di GRU, vantaggi comuni per le aziende che adottano soluzioni gamificate, indipendentemente dai loro settori di appartenenza e dalle loro differenti problematiche di origine?*
2) *In che modo il game thinking potrebbe rappresentare un nuovo modo di intendere i processi formativi e di apprendimento?*

3. Il game thinking nella gestione strategica delle risorse umane

Come affermato nel paragrafo precedente, il game thinking sta iniziando ad insinuarsi in un'ampia varietà di contesti non ludici: il presente lavoro, nello specifico, intende evidenziare come l'impiego di meccaniche e dinamiche di gioco sia diventato un prezioso supporto all'attività di gestione strategica delle risorse umane in azienda (Woźniak, 2015; Armstrong *et al.*, 2016).

Le recenti esperienze in tema di pratiche di reclutamento e assunzione riguardano la crescente necessità di individuare il talento più adatto a soddisfare le necessità dell'organizzazione in termini di risorse conoscitive, professionali e comportamentali, così da massimizzare il contributo apportato all'implementazione delle strategie e delle politiche aziendali e minimizzare le distorsioni derivanti da asimmetrie informative che potrebbero, in questa fase, alterare la qualità del contratto psicologico tra lavoratore e impresa (Jensen e Meckling, 1979).

Anche le politiche di formazione devono affrontare sempre maggiori sfide per ciò che riguarda l'acquisizione, il mantenimento e lo sviluppo di nuove abilità tecniche e trasversali.

D'altro canto, la riprogettazione dei tradizionali metodi di gestione delle risorse umane in azienda potrebbe rendere le esperienze più coinvolgenti e appaganti, riflettendosi, così, sul coinvolgimento delle persone, sollecitate a fornire prestazioni sempre maggiori ed a migliorare costantemente la propria produttività (Ferrell *et al.*, 2016).

Se ben strutturati e innovativi, dunque, i metodi di reclutamento, selezione e formazione possono favorire l'incontro tra individui ed organizzazione, agevolando il person-organization fit (Kristof, 1996).

L'applicazione di elementi mutuati dai giochi e di tecniche di game design ai metodi di reclutamento, selezione e formazione delle risorse umane può, difatti, offrire diversi vantaggi e ridurre i rischi legati ai relativi processi.

La gamificazione di alcune fasi del processo di selezione, ad esempio, può supportare e ottimizzare lo screening delle skill possedute dal candidato, attribuendo maggiore precisione all'analisi e, nei casi di un ampio pool di candidature, scremando in modo automatico le professionalità meno adatte al ruolo, con un conseguente risparmio di tempo sia dal lato dei selezionatori che da quello del candidato. L'utilizzo di dinamiche ludiche può, dunque, condurre sia ad una contrazione dei tempi che ad una riduzione dei margini degli errori di falso negativo e falso positivo (Herger, 2014).

La gamification (Huotari e Hamari, 2012; Deterding, 2012) consente, in definitiva, di introdurre un elemento innovativo e ricreativo all'intero processo di gestione delle risorse umane.

Se, da un lato, l'approccio gamified proietta il candidato in un ambiente di lavoro ricreativo e simulato, fornendogli informazioni sulla società e le politiche aziendali, consente, dall'altro, all'azienda di valutarne l'attitudine, la gestione del tempo, il pensiero creativo e innovativo, le capacità di problem solving e, allo stesso tempo, di attrarre, coinvolgere e suscitare i comportamenti desiderati del candidato (Chow, 2014; Chow e Chapman, 2013; Burke, 2016).

Le soluzioni gamificate, nello specifico, possono essere utilizzate per diversi scopi (Herger, 2014). In particolar modo, per quanto riguarda i lavoratori/candidati, i vantaggi conseguibili attraverso il game thinking possono riguardare gli ambiti di seguito elencati:

- *Rendere consapevole il candidato circa il proprio grado di adeguatezza relativamente alla posizione ricercata in azienda.* Gli elementi di gioco possono essere molto efficaci nell'incoraggiare l'apprendimento individuale, lo sviluppo di capacità e competenze e

l'eventuale padronanza situazionale, fornendo, al contempo, all'individuo feedback immediati, così da ridurre gli shock da realtà, causati da aspettative occupazionali non reali;

- *supportare l'onboarding*. Per quanto riguarda la fase di inserimento nell'organizzazione, la gamification può affiancare tutte quelle procedure pensate per favorire l'apprendimento delle condotte e degli atteggiamenti richiesti all'individuo e per far acquisire allo stesso le abilità necessarie a farlo divenire un elemento performante nell'organizzazione di cui è entrato a fa parte. Sono quattro i fattori principali che devono essere ben strutturati per un efficace programma di onboarding (Stein e Christiansen, 2010): riconoscimento del lavoro svolto da parte del dipendente; incentivi da assegnare per portare a termine gli incarichi ricevuti; supporto interpersonale; obiettivi precisi da raggiungere. Fattori che la gamification permette di strutturare efficacemente tramite a) l'assegnazione di badge, per soddisfare il bisogno di riconoscimento del dipendente, b) leaderboard e classifiche, per il conferimento degli incentivi, c) la possibilità di cooperazione tra squadre e d) l'assegnazione di task chiari e non ambigui (Huang e Hew, 2015; Burke, 2016);
- *rendere la formazione aziendale meno arida e più stimolante*. Che si tratti di learning by absorbing, learning by interacting o learning by doing (Eichinger e Lombardo, 1996), la gamification può aiutare a definire il percorso di formazione, contribuendo all'incremento motivazionale nelle attività di apprendimento (Su e Cheng, 2015). L'iniziativa gamificata può essere vista come una trama avvincente con l'aggiunta progressiva di nuovi elementi alla storia ed il giocatore, all'aumentare della complessità, si affida a ciò che ha imparato durante le fasi precedenti, avendo la possibilità di fallire, imparare dai propri errori e riprovare in ambienti sicuri.

In aggiunta, anche i datori di lavoro/ responsabili RU possono trarre vantaggio dal game thinking, come di seguito illustrato, per ciò che riguarda:

- *Attrarre le persone*. Lo sviluppo tecnologico ha aiutato la creazione, ad esempio, di *serious games* (Michael e Chen, 2005; Deterding *et al.*, 2013) sui social network o l'avvento di app per smartphone in grado di aumentare il coinvolgimento delle persone e di incrementare la loro fidelizzazione;
- *Stimolare la diffusione capillare e gratuita*. I candidati sono spinti ad estendere l'invito di gioco ad altre persone e ciò comporta generalmente un aumento del database di candidati, sia dal punto di vista quantitativo che dell'eterogeneità. Cresce, dunque, il numero di talenti disposti ad entrare in azienda e di potenziali clienti sui quali è possibile indirizzare azioni di direct marketing;
- *aiutare i selezionatori a comprendere i comportamenti, lo stato d'animo, le abilità, le attitudini e le potenzialità delle persone durante l'adempimento di alcuni compiti.* La gamification mette alla prova candidati o dipendenti facendoli immergere nel mondo del gioco e consentendo loro di rispondere in modo naturale alle sfide. Le risposte possono svelare molto sulle capacità cognitive di un potenziale o attuale dipendente, su quelle decisionali e risolutive, di leadership, sull'efficienza e sull'organizzazione sul posto di lavoro;
- *trasformare il processo di gestione delle risorse umane da centro di costo a centro di profitto*. La gamification, infatti, permette di coinvolgere anche i candidati passivi, ovvero i talenti che non cercano occupazione, ma che sono i più qualificati per una specifica posizione. Questo comporta un incremento dell'efficienza e dell'efficacia, dovuto alla riduzione del rischio di falso positivo, legato alla ricerca da parte dell'azienda all'interno di un pool esclusivamente attivo di individui;
- *versatilità*. Il gamification-designer può adattare le soluzioni gamificate ad ogni tipologia di obiettivo, modificando le modalità di gioco con facilità, cosicché i candidati non abbiano informazioni preliminari e la selezione sia basata esclusivamente sulle loro capacità e competenze e non sull'esperienza eventualmente maturata sulla piattaforma.

In quel che segue verranno analizzati tre casi studio, al fine di evidenziare l'impatto degli strumenti gamificati su specifiche attività relative alla gestione delle risorse umane, quali recruitment e formazione.

4. Metodologia: Multiple Case Study

4.1 Nota metodologica

In accordo con Yin (2003), il Case Study è un'indagine empirica che pone al centro dell'analisi fenomeni reali e cerca di osservarli "nella loro unicità, come parte di un particolare scenario e delle sue interazioni" (Patton, 1985). Si intende, dunque, una forma di indagine di tipo qualitativo che cerca il "significato" della realtà nel vissuto esperienziale delle persone. Questa metodologia viene scelta quando le domande della ricerca sono "in che modo?" e "perché?", si ha scarso controllo su eventi e comportamenti e si vogliono esaminare i fenomeni attraverso la loro osservazione diretta, le interviste alle persone coinvolte negli eventi stessi e le analisi documentali o di altro materiale.

I Case Study presentano numerosi punti di forza rappresentati dalla profondità dell'analisi, dall'alta validità concettuale, dalla comprensione del contesto e del processo e infine dalla possibilità di promuovere nuove ipotesi e nuove domande di ricerca (Yin, 2013). Attraverso questo tipo di ricerca "i dati non vengono prodotti sotto forma di numeri" (Punch, 2013), ma, attraverso un approccio qualitativo (Guba *et al.*, 1994), si vuole descrivere momenti, significati di routine e problemi relativi alla vita delle persone utilizzando una vasta gamma di metodi interconnessi, sperando sempre di ottenere una soluzione migliore sull'argomento di interesse. Inoltre, il Case Study è in grado di evidenziare i significati che gli individui attribuiscono a una materia in un ambiente naturale, fornendo un'analisi dettagliata volta a raccogliere informazioni su un oggetto, un evento o un'attività specifica.

Se la tipologia del Single Case Study è generalmente utilizzata nell'osservazione e nell'analisi di eventi particolari ed unici, ci si serve del Multiple Case Study per esaminare processi e/o fenomeni ricorrenti attraverso l'analisi di un certo numero di casi simili tra loro. Per superare le carenze di gran parte della ricerca precedente riportata in letteratura, che si è concentrata su una singola organizzazione, quindi, viene seguito un approccio di studio Multiple Case Study che consente un confronto più diretto tra le somiglianze e le differenze delle pratiche di attuazione nei diversi contesti considerati (Silverman, 2000). Tale approccio, inoltre, permette di raggiungere conclusioni più generiche (Eisenhardt e Graebner, 2007).

Pertanto, seguendo un approccio di ricerca qualitativo ed esplorativo, sono stati raccolti dati secondari, in particolare documenti e informazioni provenienti da fonti ufficiali e relativi ai tre casi in esame. I dati secondari, in particolare, hanno, tra gli altri, vantaggi relativi alla possibilità di consultare ampie raccolte di informazioni da fonti online grazie ad opportune strategie di ricerca e alla facilità del recupero dei dati stessi (Hox and Boeije, 2005).

I casi analizzati riguardano tre note multinazionali attive in settori differenti: McDonald's, Walmart e PwC. Si tratta di tre dei casi più rilevanti nel campo della Gamification applicata alla gestione del personale e declinata in modalità differenti: la formazione e l'apprendimento di competenze differenti nei primi due casi, e il recruitment con riferimento al terzo caso. La scelta di questi casi è dipesa dalla disponibilità di dati e dalla possibilità, stante l'eterogeneità dei casi stessi, di evidenziare elementi comuni e tracciare conclusioni generalizzabili. L'indagine svolta ha fornito un valido supporto all'analisi dei casi studio nonché una migliore comprensione dei vantaggi derivanti dall'implementazione delle piatteforme di gaming da parte delle aziende considerate.

4.2 McDonald's: Till Training Game

McDonald's, la più grande catena di fast food al mondo, nel 2012 ha utilizzato una piattaforma di formazione gamificata, disegnata dall'agenzia Kineo, per formare 91mila dipendenti (di cui l'85% con meno di 29 anni) sul nuovo sistema di cassa da implementare in 1230 punti vendita del Regno Unito.

Il fine era quello di combinare al lancio di un nuovo sistema di cassa l'opportunità di apprendere in un ambiente in cui esercitarsi e imparare dagli errori, senza che i clienti ne risentissero. Inoltre, l'intento era quello di rendere il processo di formazione più divertente per il

personale, aumentando, al contempo, l'accuratezza, la precisione e la spesa per ordine e riducendo i tempi di servizio (Barata *et al.*, 2013).

La piattaforma gamificata, denominata *Till Training Game*, simula il nuovo sistema di cassa al fine di formare le skill e le conoscenze degli addetti senza infastidire i clienti con attese, errori e confusione, che di norma accompagnano questi cambiamenti organizzativi e strumentali.

In particolare, l'interfaccia del gioco consiste in un nuovo registratore di cassa al quale sono aggiunti elementi tipici della Gamification: il livello utente, il punteggio ed il grado di soddisfazione del cliente. In linea con i processi gamificati, la piattaforma include i seguenti bonus:

- perfection: quando l'ordine è stato evaso correttamente al 100%;
- 3 on the bounce: quando il dipendente completa tre ordini corretti di seguito;
- beat the clock: quando il livello viene terminato prima che scada il tempo di riserva;
- happy camper: quando si riesce a mantenere alto il livello di soddisfazione del cliente;
- time to spare: se si riesce ad evadere l'ordine prima della scadenza del tempo (Fonte: http://www.kineo.com/).

Il gioco è composto da quattro livelli, ognuno composto con cinque clienti da servire e con una complessità degli ordini crescente; l'addetto deve immettere, entro 20 minuti, nel modo più preciso possibile, gli ordini dei clienti nel nuovo sistema; l'interfaccia è, inoltre, costituita dalle Life Lines, che consistono in "strumenti" utilizzabili per riuscire a completare il livello (ad esempio, la possibilità di "bloccare il tempo"), dai Bonus, raggiungibili se vengono soddisfatti alcuni criteri di gioco, e dal termometro di soddisfazione che esprime le emozioni del cliente con espressioni facciali ed effetti audio. Il punteggio unico complessivo viene calcolato in base:

- A quanto tempo si impiega a completare tutti gli ordini;
- All'accuratezza e alla precisione nell'inserimento degli ordini;
- Alle risposte dell'addetto ai clienti;
- Alle Life Lines utilizzate;
- Ai bonus guadagnati.

Attraverso l'implementazione della piattaforma, testata da circa 50mila dipendenti solo nelle prime sei settimane, sono stati raggiunti diversi risultati sperati in riferimento sia alla soddisfazione dei dipendenti rispetto all'innovativo processo di apprendimento sia all'aumento dell'efficienza da parte del personale che, grazie alla piattaforma di gaming, è riuscito a ridurre i tempi medi di evasione dei clienti. Anche successivamente al primo periodo di test della piattaforma, Till Training è stato utilizzato come strumento di formazione con vivido interesse da parte del personale, per quanto non ci fosse l'obbligo, conseguendo circa 1.300 visite giornaliere dal lancio nel giugno 2012 e 205.216 visite entro giugno 2014 per un totale di 24.000 ore di formazione.

Mark Reilly, Corporate Training Manager, a proposito del progetto gamificato, ha dichiarato: "Questo gioco è stato inserito silenziosamente sul portale accessibile solo dal nostro personale senza alcun tipo di pubblicità o raccomandazione da parte dei direttori dei punti vendita. Il personale l'ha trovato, ci ha giocato, rigiocato e condiviso. Il punto di forza del progetto risiede nella sfida fresca e originale che proponiamo incentivando i nostri lavoratori a provare e sperimentare per avere successo, che è ciò che dovrebbero fare i learning tools. Dal punto di vista aziendale abbiamo riscontrato significativi miglioramenti nell'esperienza lato utente, nelle vendite e nelle metriche di fatturato. Sicuramente, dall'UK, questo progetto sarà allargato in altre nazioni europee e lavoreremo su nuovi prodotti game-based". Anche i dipendenti hanno apprezzato l'iniziativa ed hanno affermato: "È stato davvero un vantaggio competitivo, stavamo parlando dei nostri punteggi dopo aver giocato" e "È stato utile conoscere il nuovo sistema prima di provarlo di fronte ai clienti". Dunque, tramite la piattaforma, è stata migliorata l'esperienza del cliente, come confermano le riduzioni dei reclami e dei tempi medi di assistenza, ed è aumentato il coinvolgimento dei dipendenti, che hanno assegnato un feedback positivo all'iniziativa (Su e Cheng, 2015).

La piattaforma è stata anche premiata con un Silver Learning Technologies Award nel 2014 ed un LPI Learning Awards e Gold ai 2014 Elearning Awards, con i giudici che hanno dichiarato: "Offrendo alte percentuali di successo, risparmi sui costi e una maggiore diffusione e conservazione

della conoscenza, il gioco è stato un successo indiscutibile, una voce che ha avuto un chiaro impatto sul business, diffondendosi viralmente nel mondo degli affari con grande impegno da parte dei discenti. Questo semplice gioco ben progettato si distingue come un ottimo esempio di come i giochi possono essere utilizzati nell'apprendimento".

4.3 Walmart: Axonify

Il secondo Case Study selezionato riguarda Walmart, multinazionale statunitense della grande distribuzione organizzata (GDO), proprietaria di circa 12mila negozi, che nel 2012 ha implementato una piattaforma gamificata per aumentare le adesioni ai protocolli lavorativi e migliorare il livello delle procedure di sicurezza, visti i livelli di pericolosità e di incidenti sul lavoro molto elevati in questo settore. I tempi serrati, l'ambiente lavorativo pericoloso (pallet, muletti, etc.) e la forza lavoro numerosa culturalmente eterogenea, infatti, sono fattori causalmente correlati ai tassi legati alla sicurezza sul lavoro. Woodlin, Vice Presidente della Compliance, Safety and Asset Protection per Walmart Logistics, a proposito dei processi di apprendimento, ha affermato: "Nella nostra forza lavoro, abbiamo quattro generazioni distinte: tradizionalisti, Baby Boomers, Generazione X e Millennials, ognuno con le proprie preferenze di apprendimento. Abbiamo anche centri di distribuzione in tutto il Nord America, ognuno con le proprie culture di sicurezza, che hanno bisogno di essere parte di una cultura generale di sicurezza aziendale. In breve, avevamo bisogno di una soluzione che potesse essere adatta a soddisfare le esigenze dei nostri diversi gruppi di dipendenti" (https://axonify.com/).

Leaman, il CEO di Axonify, la startup a cui Walmart ha affidato lo sviluppo della piattaforma di gamification, ha proposto una nuova idea di gioco utile alla formazione in azienda: "A causa del turnover e della forza lavoro ampiamente dispersa, è difficile per i responsabili di Walmart sapere esattamente quali procedure di sicurezza i dipendenti stanno applicando sul lavoro. La nostra applicazione di gioco richiede solo tre minuti e fornisce una raffica di informazioni con due domande a scelta multipla intrecciate con un gioco a loro scelta".

Inizialmente le due società decisero di lanciare un progetto pilota, della durata di sei mesi, su 5mila operatori logistici di otto centri di distribuzione, che ebbe risultati soddisfacenti: una diminuzione degli incidenti del 54%. "Abbiamo visto un enorme miglioramento a seguito dell'utilizzo e del coinvolgimento dei nostri associati nei programmi di sicurezza, nonché dell'impegno dei leader nel programma" afferma Woodlin "Le metriche di "Lost Times" sono state ridotte di oltre il 50% negli ultimi tre anni, ed i tassi degli incidenti e del DART [giorni di assenza da lavoro per malattia, licenze orarie e/o trasferimenti di mansione] sono ben al di sotto della media del settore."

A seguito di questi risultati, si decise, quindi, di implementarlo in 150 centri di distribuzione negli USA (75mila dipendenti totali) con l'obiettivo di:

- Ridurre gli incidenti nelle sedi Walmart Logistics (Law *et al.*, 2011);
- Costruire e diffondere una cultura di sicurezza di livello elevato;
- Aumentare la conoscenza e l'information retention degli operatori sulle procedure di sicurezza;
- Coinvolgere il personale multigenerazionale mantenendo la sicurezza al primo posto;
- Prevedere i comportamenti a rischio;
- Rafforzare continuamente le procedure di sicurezza;
- Assicurare un accesso facile e veloce alla formazione per evitare pause dal lavoro;
- Fornire un apprendimento personalizzato in modo da garantire un progresso a ciascun dipendente;
- Consentire all'azienda di identificare e prevedere i comportamenti a rischio in modo che da poterli affrontare proattivamente (Bajdor e Dragolea, 2011).

In questa direzione, Axonify aiuta i dipendenti a costruire, rinforzare e condividere le conoscenze in modo divertente e coinvolgente, al fine di personalizzare l'apprendimento e colmare le lacune individuali. I dipendenti, inoltre, maturano una maggiore sicurezza nello svolgere i loro

ruoli, acquisendo un'appropriata conoscenza che supporta l'organizzazione nel raggiungimento di migliori risultati.

Nello specifico, gli operatori si collegano alla piattaforma Axonify Microlearning nel loro tempo libero, rispondendo in tre minuti alle domande sulla sicurezza, intervallate da giochi; alle risposte segue un feedback immediato che permette ai dipendenti di acquisire consapevolezza sulle loro conoscenze e lacune. Il sistema ricorda le risposte di ogni utente e, all'accesso successivo, somministra ai dipendenti domande per rinforzare quanto appreso e colmare il gap informativo.

I dipendenti, inoltre, hanno la possibilità di seguire anche i progressi e i risultati dei colleghi, creando le condizioni di una competizione amichevole. Il formato di tre minuti non è una casualità, infatti è il tempo necessario a ricaricare la batteria del carrello elevatore di Walmart e, quindi, un tempo morto per il lavoratore che, anziché annoiarsi, impara divertendosi. Le ricerche di Axonify, inoltre, asseriscono che gli apprendimenti ripetitivi a brevi intervalli tendono a essere conservati molto più a lungo dei webinar di trenta minuti o di altri formati, spesso utilizzati, che portano ad un sovraccarico di informazioni (Fonte: http://www.gameifications.com/gamification/walmart-sicurezza-aziendale-con-la-gamification/).

Un sistema di analitiche (Axonify Behaviors), inoltre, consente al manager di ciascun magazzino di verificare in tempo reale che le informazioni apprese vengano concretamente utilizzate e applicate e che vengano adottati i comportamenti desiderati per mantenere un ambiente di lavoro sicuro.

Attraverso questo processo, Walmart può identificare le aree in cui i comportamenti di sicurezza non vengono eseguiti correttamente e indagare in modo proattivo, affrontando preventivamente il problema (prima che avvenga un incidente sul lavoro), ad esempio inserendo ulteriori domande su quella specifica procedura. In generale, la piattaforma è stata accolta in modo positivo dal personale, con una media del 91% di partecipazione volontaria. Inoltre, è stata riscontrata una maggiore conoscenza degli argomenti trattati, una diminuzione delle spese per infortunio e un miglior clima aziendale.

A seguito di questi risultati, la multinazionale statunitense ha deciso di continuare il rapporto con Axonify per creare una piattaforma anche per i suoi 6mila camionisti.

4.4 PwC: Multipoly Next

Il terzo ed ultimo caso riguarda PricewaterhouseCoopers, multinazionale presente in 158 Paesi con circa 236mila dipendenti. L'azienda è sempre disposta ad utilizzare le tecniche più innovative; sul sito, infatti, è chiara la vision aziendale rispetto al gioco: "Il gioco rappresenta un aspetto naturale della nostra vita, sia da bambini che da adolescenti ed adulti. E non scomoderemo le scienze sociali, che pur molto hanno trattato del tema, per convenirne. Certo è che nella nostra cultura è diffusa la prevalente assimilazione del gioco a cose "frivole" e del lavoro a cose "serie". Ebbene questo paradigma è attualmente in evoluzione e non solo nel caso dell'educazione scolastica, dove da tempo il gioco è una delle leve dell'apprendimento, ma anche nel caso di contesti lavorativi e di business." (Fonte: https://www.pwc.com/it/it/about-us.html).

La divisione Hr ungherese dell'azienda si è posta l'obiettivo di coinvolgere maggiormente i candidati durante il processo di ricerca (Kai Huotari e Hamari, 2012), essendo consapevole dei livelli di engagement ed attenzione bassi dei Millenials, e di aumentare negli aspiranti la consapevolezza del brand e della mission/vision aziendale. I candidati, infatti, trascorrevano, mediamente, meno di quindici minuti sul sito web, nella sezione "careers".

Per riuscire a raggiungere gli obiettivi definiti PwC ha sviluppato e lanciato, in collaborazione con la società ungherese Games for Business, Multipoly, una piattaforma gamificata che permette agli aspiranti di PwC di testare le loro attitudini e capacità, soprattutto di team working e problem solving, attraverso la somministrazione di problemi di business simili a quelli riscontrabili in azienda. I candidati, inoltre, possono simulare il colloquio di lavoro e i ruoli di consulente e manager. Multipoly presenta task basati sulle "competenze PwC" come la costruzione di acume aziendale, l'aumento di competenze digitali e l'adozione di capacità relazionali

(https://www.forbes.com/sites/jeannemeister/2015/03/30/future-of-work-using-gamification-for-human-resources/3/#24155a1862e4). Ulteriori caratteristiche specifiche della piattaforma sono la presenza nel gioco di persone reali, che fanno parte del personale della sede ungherese, i feedback in tempo reale e l'ambiente del gioco che ricalca gli uffici di Budapest.

Grazie alla piattaforma è possibile anche accedere a Multipoly Next, un gioco a due round con una parte online ed una offline: nella prima fase del gioco, il giocatore invia l'application a PwC, prende parte al processo di intervista virtuale per diventare tirocinante; nella seconda fase del gioco, i migliori giocatori partecipano personalmente nell'ufficio di Budapest di PwC. Un totale di dodici giocatori, selezionati tra i primi trenta giocatori della classifica individuale, che abbiano almeno diciotto anni e massimo ventisei e siano studenti o neolaureati da massimo un anno, diventerà idoneo a partecipare alla finale. In particolare, verranno selezionati:

- I primi otto giocatori della classifica automaticamente;
- Quattro altri giocatori selezionati dagli esperti di PwC (http://multipoly.hu/en/game-rules.html).

La registrazione alla piattaforma è possibile sia dal sito dedicato che tramite Facebook ed ai giocatori è permesso giocare i livelli senza alcuna limitazione in termini di tentativi, conteggiando soltanto il punteggio più alto raggiunto in quel livello; ai primi tre classificati, al fine di aumentare la loro motivazione, vengono conferiti premi materiali (MacBook, Iphone e Ipad), oltre all'invito a partecipare alla seconda parte dell'iniziativa in azienda (http://multipoly.hu/en/game-rules.html).

Dopo aver compiuto specifiche azioni richieste nel corso dell'esperienza, il giocatore ottiene dei punti in relazione a cinque aree di competenza: capacità di relazionarsi, visione globale, visione business, capacità tecniche e leadership. Il numero totale di punti ricevuti per ciascuna di queste aree va a costituire il punteggio finale di ciascun livello di gioco (http://www.gameifications.com/enterprise/il-futuro-del-recruiting-e-nella-gamification-il-caso-multipoly-di-pwc).

Il giocatore può raccogliere ulteriori punti mediante la soddisfazione delle seguenti attività extra:

- Compilazione del video: 50-60-70 punti;
- Compilazione del test di competenza: 40-50-60 punti;
- Caricamento del CV attraverso il sistema PwC: 20-30-40 punti;
- Compilazione test numerici online attraverso il sistema PwC: 50-60-70 punti;
- Compilazione test logici online attraverso il sistema PwC: 50-60-70 punti;
- Caricamento profilo LinkedIn: 10-15-20 punti (http://multipoly.hu/en/game-rules.html).

I risultati dell'iniziativa sono stati soddisfacenti, come conferma Noémi Biró, la responsabile regionale delle assunzioni di PwC Hungary. Infatti, dopo l'iniziativa, sono stati conseguiti diversi vantaggi come un maggior numero di candidature, una migliore preparazione dei candidati per le interviste face to face e una più profonda consapevolezza da parte degli utenti dell'azienda. Inoltre, i candidati provenienti dalla piattaforma, superano con maggiore facilità il periodo di *onboarding*, contestualizzandosi rapidamente in azienda, facilitati dall'aver già sperimentato la cultura aziendale attraverso il processo gamificato.

5. Discussione

Il lavoro ha avuto lo scopo di esplorare le opportunità di utilizzo del game thinking nell'ambito della gestione delle risorse umane identificando, attraverso tre case study, i vantaggi conseguiti dall'implementazione di piattaforme di gaming in azienda.

Attraverso l'analisi condotta è stato possibile fornire una risposta alla prima domanda di ricerca ed identificare, dunque, in termini di GRU, i vantaggi comuni per le aziende che adottano soluzioni gamificate, indipendentemente dai loro settori di appartenenza e dalle loro differenti problematiche di origine.

Infatti, nonostante siano state considerate tre realtà aziendali operanti in settori diversi e caratterizzate da problematiche iniziali differenti, è possibile osservare come l'adozione di tecniche

di gaming permetta di identificare vantaggi comuni che si manifestano indipendentemente dal contesto in cui la soluzione viene proposta. Nello specifico, si può notare che in tutti e tre i casi, attraverso le dinamiche ludiche, il personale riesce ad assorbire più facilmente informazioni, sviluppa un approccio orientato all'utilizzo di piattaforme ICT e, infine, matura un maggiore coinvolgimento nell'ambiente lavorativo. La Tabella 1 seguente sintetizza i tre case study presentati.

Tab. 1: Problematiche aziendali, implementazione della piattaforma di gaming e vantaggi conseguiti nel Multiple Case Study

	Mc Donald's	***Walmart***	***PwC***
Problematica aziendale	• Difficoltà delle risorse umane nella fase iniziale di apprendimento del nuovo sistema di cassa; • Disservizi col cliente a causa di errori durante la fase di apprendimento.	• Contesto della GDO caratterizzato da livelli molto elevati di pericolosità ed incidenti sul posto di lavoro; • Inefficacia dei metodi di apprendimento tradizionali delle procedure di sicurezze legata all'eterogeneità culturale e generazionale del personale; • Necessità di controllare le adesioni ai protocolli lavorativi per migliorare il livello delle procedure di sicurezza.	• Scarso coinvolgimento degli utenti nel processo di recruitment; • Bassa consapevolezza dell'identità e della *mission/vision* aziendale da parte degli utenti nel processo di recruitment.
Piattaforma di gaming	Till Training Game simula il nuovo registratore di cassa, includendo: ✓il livello utente; ✓il punteggio utente; ✓ il grado di soddisfazione del cliente; ✓Bonus per crescere di livello; ✓Strumenti Life Lines.	Axonify Microlearning consiste in: ✓due domande, inerenti alle procedure di sicurezza, a scelta multipla; ✓un mini-game, di tre tipologie differenti: – Curvy Loop, dove bisogna unire due punti con la linea più lunga possibile; – Quiz Show, un cruciverba da risolvere con l'aiuto di immagini che fungono da indizi; – Simon Says, un memory game.	Multipoly permette agli aspiranti di PwC di: ✓testare le loro attitudini e capacità risolvendo problemi di business; ✓provare i ruoli di consulente, consulente senior e manager; ✓costruire attraverso specifiche task le competenze richieste dall'azienda.
Vantaggi aziendali conseguiti	▪ L'85% dei dipendenti ha affermato che l'applicazione ha condotto ad una comprensione adeguata del nuovo sistema di cassa e ad un miglioramento delle performance; ▪ Riduzione di 7,9 secondi sul tempo medio di evasione di un cliente; ▪ Aumento medio di spesa di 15 penny a utente, equivalenti a 18mila sterline per punto vendita (per un totale, nel Regno Unito, di 23,7 milioni di sterline annue); ▪ La società ha risparmiato all'incirca 1,5 milioni di sterline di costi di formazione diretta.	▪ Livelli di conoscenza su argomenti relativi alla sicurezza aumentati del 15%; ▪ La fiducia dei dipendenti sugli strumenti di lavoro è aumentata dell'8%; ▪ Le spese per infortunio sono diminuite; ▪ Maggiore propensione da parte del personale nell'individuare potenziali pericoli e nel sollevare problemi relativi alla sicurezza.	▪ Il tempo medio di sessione nella sezione "careers" si attesta sui quindici minuti, mentre quello di una sessione di gioco su Multipoly raggiunge i novanta minuti; ▪ Dal lancio della piattaforma si è registrata una crescita del 190% dei candidati; ▪ Il 78% degli utenti dichiara di essere interessato a saperne di più sul lavoro presso PwC; ▪ Tra gli intervistati, il 100% ha dichiarato di aver acquisito nuove informazioni su PwC; ▪ Oltre l'80% degli intervistati ha convenuto che il gioco abbia contribuito a migliorare la percezione dell'azienda.

Fonte: Elaborazione degli Autori da (http://marcominghetti.nova100.ilsole24ore.com/2015/10/05/il-potere-della-gamification; https://diginomica.com/; http://www.gameifications.com/gamification/walmart-sicurezza-aziendale-con-la-gamification/; https://www.forbes.com/sites/jeannemeister/2015/03/30/future-of-work-using-gamification-for-human-resources/3/#24155a1862e4; https://bbj.hu/special-report/turning-recruitment-into-a-game_114827)

Per quanto concerne la seconda domanda di ricerca, come emerge dai casi di studio presentati, vi è la necessità di identificare percorsi di formazione adatti a soddisfare le diverse esigenze dei

dipendenti e tenendo in considerazione diversità sia di carattere generazionale che individuale.

In linea con quanto appena detto, le situazioni di gioco che il lavoratore si ritrova ad affrontare riescono ad agire anche su aspetti emotivi e caratteriali, su cui, invece, la formazione classica difficilmente incide. Le soluzioni gamificate, quindi, suggeriscono un nuovo modo di intendere i processi formativi, basato su piattaforme scalabili, flessibili ed adottabili in una serie di contesti non ludici e molto diversi tra di loro (Taspinar *et al.*, 2016): le dinamiche di gioco, come emerge dal lavoro, possono essere utilizzate sia nella trasmissione a dipendenti e collaboratori di skill tecniche e professionalizzanti sia nei processi di training utili allo sviluppo di soft skill.

Questa duplice valenza si ricollega a quanto tradizionalmente rappresentato come conoscenza "T-shaped", ovvero caratterizzata sia da *competenze* funzionali/disciplinari che da *capacità* di adattamento delle conoscenze (Guest, 1991; Hansen, 2001; Barile *et al.*, 2012).

Le *competenze* generalmente consistono in un insieme di caratteristiche intrinseche possedute da un individuo, causalmente legate alle prestazioni (Spencer e Spencer, 1993); sono assimilabili a *schemi di sintesi* che costituiscono abilità tecniche basate sulle conoscenze possedute (Barile *et al.*, 2012). Le *capacità* sono, invece, abilità che permettono agli individui, ai gruppi, alle organizzazioni e alle società in generale di creare nuove competenze, nuove conoscenze, nuovi modi di fare: sono riconducibili agli *schemi generali,* intesi come la capacità di interagire con altre realtà, di scambiare, condividere e trasferire la conoscenza, creando le giuste condizioni per generare o mantenere vantaggi competitivi (Barile *et al.*, 2012).

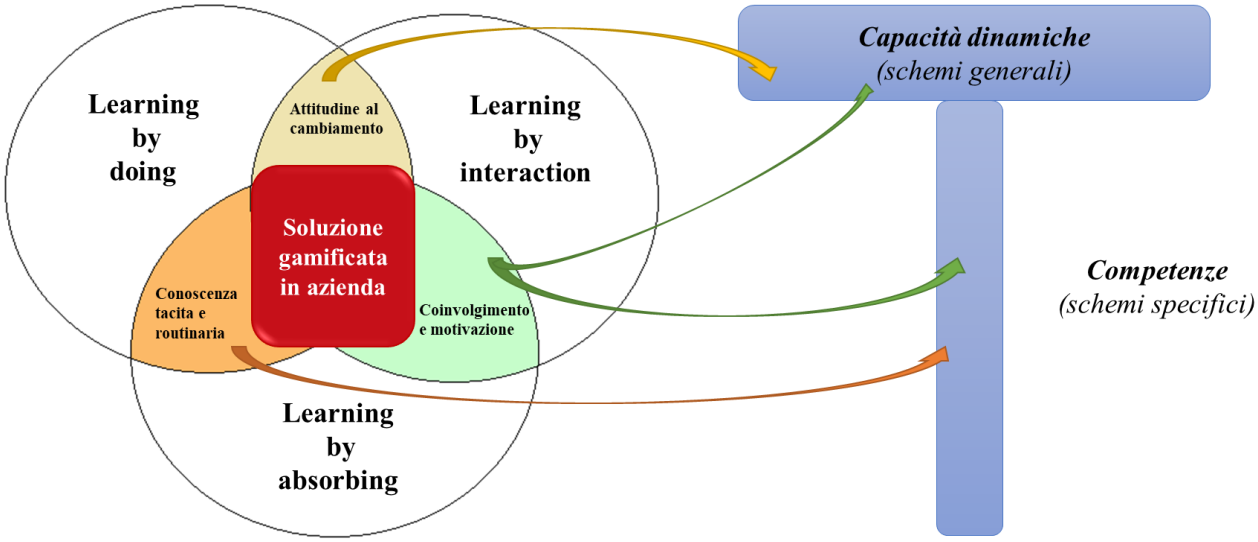
Come illustrato in Figura 2, l'approccio gamificato in azienda contribuisce a diverse modalità di apprendimento, fortificando tanto le competenze possedute dalle risorse umane (schemi di sintesi) quanto le capacità di adattamento a nuove conoscenze (schemi generali).

Se consideriamo la tradizionale tripartizione delle modalità di apprendimento in:

- *Learning by doing* (Anzai and Simon, 1979): inteso come apprendimento tramite azione;
- *Learning by interacting* (Wrede *et al.*, 2009): definito come l'acquisizione di conoscenza attraverso attività di interazione e collaborazione;
- *Learning by absorbing* (Haryanta, 2010): inteso come l'apprendimento tramite nozioni teoriche;

è possibile ipotizzare come l'utilizzo della gamification, facilitando l'interazione tra le tre, faccia emergere altrettanti ambiti rilevanti per il contesto aziendale. Il primo relativo alla *Conoscenza tacita e routinaria:* grazie alla piattaforma gamificata e alle sue simulazioni è possibile assorbire nuove competenze che contribuiscono a costruire il patrimonio di conoscenza tacita delle risorse umane. Anche da quanto emerge dal caso di McDonald's, i dipendenti hanno avuto la possibilità di simulare il nuovo sistema di cassa al fine di acquisire conoscenza routinaria senza determinare inefficienze, rallentamenti ed errori (Edmonds, 2011). Il secondo relativo alla *Attitudine al cambiamento e sviluppo di capacità platform-oriented:* le dinamiche di gioco permettono di acquisire nuove capacità sviluppando un approccio orientato all'utilizzo di piattaforme ICT e supportando l'adattamento dei dipendenti alle nuove tecnologie in modo graduale e semplice. Come emerge nei tre casi analizzati, gli utenti, eterogenei in termini generazionali e culturali, infatti, hanno l'opportunità di familiarizzare con le sfide virtuali, gli scenari interattivi e la navigazione su Internet (Uhr *et al.*, 2015). Il terzo, infine, relativo al *Coinvolgimento e motivazione delle risorse umane:* l'apprendimento basato sul gioco, come già affermato, fornisce gli strumenti necessari per acquisire nuove competenze specifiche, come si è notato in particolare nel caso di Walmart, in cui gli utenti, grazie alla piattaforma gamificata, hanno aumentato i livelli di conoscenza in merito ad argomenti relativi alla sicurezza. Sempre in riferimento al caso specifico, ed in particolar modo mediante la funzionalità di somministrazione dei punteggi, la piattaforma ha evidenziato un incremento dell'interazione tra le risorse umane nel contesto lavorativo e la diffusione di un clima di sana competizione. Dunque, l'approccio gamificato favorisce anche il rafforzamento delle capacità motivazionali all'interno dell'azienda, contribuendo alla diffusione di un atteggiamento positivo e coinvolgente, strategico nel migliorare le performance (Hanus and Fox, 2015).

Fig. 2: Il contributo della gamification alla gestione della conoscenza



Fonte: Elaborazione degli Autori

6. Implicazioni manageriali, future linee di ricerca e conclusioni

In conclusione, le piattaforme gamificate portano all'interno delle organizzazioni innumerevoli vantaggi oltre che un nuovo modo di intendere l'apprendimento, che diviene fonte di competenze specifiche e capacità trasversali. Ciò acquisisce maggiore importanza nei contesti contemporanei, caratterizzati da crescente complessità e necessità di conoscenza sempre più flessibile e multidimensionale.

Il paper offre interessanti spunti da un punto di vista manageriale, in quanto, facendo leva sul dinamismo e sulla versatilità dei processi di sviluppo e apprendimento tecnologico, spinge a mettere in atto una serie di politiche tese a ridefinire l'approccio alla gestione della conoscenza (Barile *et al.*, 2015; Simone e Calabrese, 2017). Tali politiche dovrebbero tradursi in una serie di interventi volti ad un ripensamento dei classici metodi di gestione delle risorse umane, affinché individui con background differenti non si ritrovino "intrappolati" in rigidi percorsi formativi (Loia *et al.*, 2019).

L'originalità del lavoro risiede, dunque, nel tentativo di evidenziare come i processi gamificati nell'ambito della gestione delle risorse umane suggeriscano un nuovo modo di intendere i processi formativi e di reclutamento nell'ottica di una conoscenza "T-Shaped".

Tuttavia, il contributo fornisce approfondimenti preliminari per una futura indagine empirica necessaria per una comprensione più approfondita del problema proposto. Le considerazioni emerse dall'analisi dei tre casi studio andrebbero, infatti, ampliate attraverso la predisposizione di ulteriore materiale informativo. Ad esempio, la somministrazione di questionari in profondità o la realizzazione di focus group all'interno di piccole e medie imprese italiane permetterebbe di effettuare un confronto con le realtà delle multinazionali evidenziate in questo lavoro, mettendo in evidenza parallelismi e differenze che potrebbero garantire una più efficace generalizzazione dei risultati ottenuti.

Inoltre, future linee di ricerca potrebbero riguardare il processo di acquisizione e di ampliamento della conoscenza, sulla base della specifica profilazione e clusterizzazione degli utenti che deriva dall'applicazione del game thinking. Ciò in base alla possibilità offerta dalla gamification di favorire l'adattamento di alcuni servizi (contenuti, esperienze, etc.) al profilo e alle preferenze specifiche del singolo fruitore. Attraverso l'utilizzo di soluzioni gamificate, dunque, si potrebbe ridisegnare il processo di apprendimento e fruizione di un servizio legato alla formazione, sviluppando e definendo un modello all'avanguardia di piattaforma di apprendimento multimediale che suggerisca percorsi disegnati in basi ai singoli utenti (Sáiz-Manzanares *et al.*, 2019). In tal

modo, il percorso di apprendimento personalizzato andrebbe a delineare un modello innovativo di formazione di tipo *evolutivo*.

Bibliografia

ABU-JAROUR S.F. (2014). Person demotivation in organizational life. *International Journal of Business and Social Science*, vol. 5, n. 1, pp. 215-219.

ANZAI Y., SIMON H.A. (1979), "The theory of learning by doing", *Psychological review*, vol. 86, n. 2, pp. 124-140.

ARMSTRONG M.B., LANDERS, R. N. (2018), "Gamification of employee training and development", *International Journal of Training and Development*, vol. 22, n. 2, pp. 162-169.

ARMSTRONG, M. B., LANDERS R.N., COLLMUS A.B. (2016), "Gamifying recruitment, selection, training, and performance management: Game-thinking in human resource management", *Emerging research and trends in gamification*, pp. 140-165, IGI Global.

BAJDOR P., DRAGOLEA L. (2011), "The gamification as a tool to improve risk management in the enterprise", *Annales Universitatis Apulensis: Series Oeconomica*, vol. 13, n. 2, pp. 574.

BARATA G., GAMA S., JORGE J., GONÇALVES D. (2013), "Improving participation and learning with gamification", Paper presented at the Proceedings of the First International Conference on gameful design, research, and applications.

BARILE S. (2006), *L'impresa come sistema*, Giappichelli Editore.

BARILE S. (2009), *Management sistemico vitale (Vol. 1)*, Torino: Giappichelli.

BARILE S., FRANCO G., NOTA G., SAVIANO M. (2012), "Structure and dynamics of a "T-Shaped" knowledge: From individuals to cooperating communities of practice", *Service Science*, vol. 4, n. 2, pp. 161-180.

BARILE S., SAVIANO M., SIMONE C. (2015), "Service economy, knowledge, and the need for T-shaped innovators", *World Wide Web*, vol. 18, n. 4, pp. 1177-1197.

BURKE B. (2016), *Gamify: How gamification motivates people to do extraordinary things*, Routledge.

BUTLER C. (2015), "Applied behavioral economics: A game designer's perspective: Investigating the gamification of modern games and how similar techniques can be leveraged in non-game environments", *Gamification in Education and Business*, pp. 81-104, Springer International Publishing.

CALABRESE M. (2014), *Il management nell'era della conoscenza*, Rirea.

CHOW S. (2014), *A novel approach to employee recruitment: Gamification*, Graduate Studies.

CHOW S., CHAPMAN D. (2013), "Gamifying the employee recruitment process", Paper presented at the Proceedings of the First International Conference on Gameful Design, Research, and Applications.

DERGOUSOFF K., MANDRYK R.L. (2015), "Mobile gamification for crowdsourcing data collection: Leveraging the freemium model", Paper presented at the Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems.

DETERDING S. (2012), "Gamification: designing for motivation", *Interactions*, vol. 19, n. 4, pp. 14-17.

DETERDING S., BJÖRK S.L., NACKE L.E., DIXON D., LAWLEY E. (2013), "Designing gamification: creating gameful and playful experiences", *CHI'13 Extended Abstracts on Human Factors in Computing Systems*, pp. 3263-3266.

DETERDING S., DIXON D., KHALED R., NACKE L. (2011), "From game design elements to gamefulness: defining" gamification", Paper presented at the Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments.

DETERDING S., KHALED R., NACKE L.E., DIXON D. (2011), "Gamification: Toward a definition", Paper presented at the CHI 2011 gamification workshop proceedings.

DEVERS C.J., GURUNG R.A.R. (2015), "Critical perspective on gamification in education", *Gamification in Education and Business*, pp. 417-430, Springer International Publishing.

DILLON K., OLBERDING J.C. (2016), "Promoting events: Through cause marketing, social media, and "gamification"", *Social Enterprise and Special Events*, pp. 37-51, Taylor and Francis Inc.

DYMEK M. (2016), "Inside the gamification case of a mobile phone marketing campaign: The amalgamation of game studies with marketing communications?", *The Business of Gamification: A Critical Analysis*, pp. 99-121, Taylor and Francis.

EDMONDS S. (2011), "Gamification of learning", *Training and Development in Australia*, vol. 38, n. 6, pp. 20.

EICHINGER R., LOMBARDO M. (1996), "The career architect development planner", *Lominger Limited, Minneapolis*.

EISENHARDT K.M., GRAEBNER M.E. (2007), "Theory building from cases: Opportunities and challenges", *Academy of management journal*, vol. 50, n. 1, pp. 25-32.

ELISEEVA E.V., ZYATEVA L.A., KIYUTINA I.I., WEILER V.P., SHKITYR O.N., ISAKOVA G.S. (2017) "Gamification technology in the higher school educational process as a way of improving of professional training for the modern economy", *International Journal of Applied Business and Economic Research*, vol. 15, n. 11, pp. 175-183.

FERRELL J.Z., CARPENTER J.E., VAUGHN E.D., DUDLEY N.M., GOODMAN S.A. (2016), Gamification of human resource processes", *Emerging research and trends in gamification*, pp. 108-139, IGI Global.

FOX J. (2015), "Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance", *Computers & education*, n. 80, pp. 152-161.

GOLINELLI G.M. (2000), *L'approccio sistemico al governo dell'impresa*, Padova: Cedam, Vol. I.

GUBA E.G., LINCOLN Y.S., DENZIN N.K. (1994), "Handbook of qualitative research", *Califónia: Sage*, pp. 105-117.

GUEST D. (1991) "The hunt is on for the Renaissance Man of computing", *The Independent*, vol. 17, n. 09.

HAMBRICK D.C., *et al.* (2014), "The Quad Model for Identifying a Corporate Director's Potential for Effective Monitoring: Toward a New Theory of Board Sufficiency", *Academy of Management Review*, vol. 40, n. 3, pp. 323-344.

HAMMEDI W., LECLERQ T., VAN RIEL A.C.R. (2017), "The use of gamification mechanics to increase employee and user engagement in participative healthcare services: A study of two cases", *Journal of Service Management*, vol. 28, n. 4, pp. 640-661.

HANSEN M.T. (2001), "Introducing T-shaped managers. Knowledge management's next generation", *Harvard business review*, vol. 79, n. 3, pp. 106-116.

HARYANTA P. (2010), "Students' lived experiences in learning English at the vocational school".

HERGER M. (2014), *Gamification in Human Resources: Engaging people by letting them have fun*, CreateSpace.

HUANG B., HEW K.F. (2015), "Do points, badges and leaderboard increase learning and activity: A quasi-experiment on the effects of gamification", Paper presented at the Proceedings of the 23rd International Conference on Computers in Education.

HUGOS M. (2012), *Enterprise games: using game mechanics to build a better business*, " O'Reilly Media, Inc.".

HUOTARI K., HAMARI J. (2012), "Defining gamification: a service marketing perspective", Paper presented at the Proceeding of the 16th international academic MindTrek conference.

HUOTARI K., HAMARI J. (2017), "A definition for gamification: anchoring gamification in the service marketing literature", *Electronic Markets*, vol. 27, n. 1, pp. 21-31.

JENSEN M.C., MECKLING W.H. (1979), "Theory of the firm: Managerial behavior, agency costs, and ownership structure", *Economics social institutions*, pp. 163-231, Springer.

KRISTOF A.L. (1996), "Person-organization fit: An integrative review of its conceptualizations, measurement, and implications", *Personnel psychology*, vol. 49, n. 1, pp. 1-49.

KUMAR G.A., RAVI KUMAR A. (2019), "Employing gamification methods to increase customer engagement in digital marketing", *International Journal of Recent Technology and Engineering*, vol. *8*, n. 2 (Special Issue 8), pp. 869-872.

KUMAR H., RAGHAVENDRAN S. (2015) "Gamification, the finer art: fostering creativity and employee engagement", *Journal of Business Strategy*, vol. 36, n. 6, pp. 3-12.

LANDERS R.N., AUER E.M., COLLMUS A.B., ARMSTRONG M.B. (2018), "Gamification science, its history and future: Definitions and a research agenda", *Simulation & Gaming*, vol. 49, n. 3, pp. 315-337.

LAW F.L., KASIRUN Z.M., GAN C.K. (2011), "Gamification towards sustainable mobile application", Paper presented at the 2011 Malaysian Conference in Software Engineering.

LIER L.M., BREUER C. (2019), "The motivating power of gamification: Does the inclusion of game elements increase the effectiveness of worksite health promotion programs?", *International Journal of Workplace Health Management*, vol. 13, n. 1, pp. 1-15.

LOIA F., FULCO I., VITO P., LETTIERI M. (2019), Come superare l'human lock-in? Una rilettura in chiave sistemica del rapporto tra tecnologia, training policy e conoscenza. In *Il fascino della precarietà. Studi sull'evoluzionismo sistemico*. A cura di Barile S. e Paniccia P.M.A, pp. 53-70.

MCGONIGAL J. (2011), *Reality is broken: Why games make us better and how they can change the world*, Penguin.

MICHAEL D.R., CHEN S.L. (2005), *Serious games: Games that educate, train, and inform*, Muska & Lipman/Premier-Trade.

MOKYR J., ZAMAGNI V. (2004), *I doni di Atena: le origini storiche dell'economia della conoscenza*, Società editrice il Mulino.

PATTON M.Q. (1985), "Quality in qualitative research: Methodological principles and recent developments", *Invited address to Division J of the American Educational Research Association, Chicago*.

PEISCHL B., SCHANTL J., HOLZINGER A. (2014), "Energizing people's work: Transforming organizations through gamification", Paper presented at the 11th International Conference on e-Business, ICE-B 2014 - Part of 11th International Joint Conference on e-Business and Telecommunications, ICETE 2014.

PUNCH K.F. (2013), "Introduction to social research: Quantitative and qualitative approaches", sage.

QUATTROCIOCCHI B., FULCO I., LA SALA A., IANDOLO F., CALABRESE M. (2018). La teoria dei tipi psicologici e la consonanza nel processo di selezione delle risorse umane. *ESPERIENZE D'IMPRESA*, vol.1, pp. 85-107.

RICHTER G., RABAN D.R., RAFAELI S. (2015), "Studying gamification: The effect of rewards and incentives on motivation", *Gamification in education and business*, pp. 21-46, Springer.

ROSLI K., KHAIRUDIN N., SAAT R.M. (2019), "Gamification in entrepreneurship and accounting education", *Academy of Entrepreneurship Journal*, vol. 25, n. 3.

SÁIZ-MANZANARES M.C., OSORIO C.I.G., DÍEZ-PASTOR J.F., ANTÓN L.J.M. (2019), "Will personalized e-Learning increase deep learning in higher education?", Information Discovery and Delivery.
SANTHANAM R., LIU D., SHEN W.C.M. (2016), "Research Note-Gamification of technology-mediated training: Not all competitions are the same", *Information systems research*, vol. 27, n. 2, pp. 453-465.
SEIDLER A., THINSCHMIDT M., DECKERT S., THEN F., HEGEWALD J., NIEUWENHUIJSEN K., RIEDEL-HELLER S.G. (2014). The role of psychosocial working conditions on burnout and its core component emotional exhaustion–a systematic review. *Journal of occupational medicine and toxicology*, vol. 9, n. 1, p. 10.
SIGALA M. (2015), Gamification for crowdsourcing marketing practices: Applications and benefits in tourism", *Advances in Crowdsourcing*, pp. 129-146, Springer International Publishing.
SIGNORI G.G., DE GUIMARÃES J.C.F., SEVERO E.A., ROTTA C. (2018), "Gamification as an innovative method in the processes of learning in higher education institutions", *International Journal of Innovation and Learning*, vol. 24, n. 2, pp. 115-137.
SILVERMAN D. (2000), "Analyzing talk and text", *Handbook of qualitative research*, vol. 2, n. 0, pp. 821-834.
SIMONE C., CALABRESE M. (2017), "The nesting architecture of T-shaped capacities: Fostering the requisite variety in the service economy", Naples Forum on Service Science, Sorrento (Italy), 6-9 giugno.
STEIN M., CHRISTIANSEN L. (2010), *Successful onboarding*, McGraw-Hill Professional Publishing.
SU C.H., CHENG C.H. (2015), "A mobile gamification learning system for improving the learning motivation and achievements", *Journal of Computer Assisted Learning*, vol. 31, n. 3, pp. 268-286.
TASPINAR B., SCHMIDT W., SCHUHBAUER H. (2016), "Gamification in education: a board game approach to knowledge acquisition", *Procedia Computer Science*, n. 99, pp. 101-116.
TROISI O., D'ARCO M., LOIA F., MAIONE G. (2018), "Big data management: the case of mulino bianco's engagement platform for value co-creation", *International Journal of Engineering Business Management*, p. 10.
URH M., VUKOVIC G., JEREB E., PINTAR R. (2015), "The model for introduction of gamification into e-learning in higher education", *Procedia-Social and Behavioral Sciences*, vol. 197, n. 25, pp. 388-397, Hanus, M. D.
VAN ECK N.J., WALTMAN L. (2014), "CitNetExplorer: A new software tool for analyzing and visualizing citation networks", *Journal of Informetrics*, vol. 8, n. 4, pp. 802-823.
VEGT N., VISCH V., DE RIDDER H., VERMEEREN A. (2015), "Designing gamification to guide competitive and cooperative behavior in teamwork", *Gamification in Education and Business*, pp. 513-533, Springer International Publishing.
WERBACH K., HUNTER D. (2012), *For the win: How game thinking can revolutionize your business*, Wharton Digital Press.
WOŹNIAK J. (2015), "The use of gamification at different levels of e-recruitment", *Management Dynamics in the Knowledge Economy*, vol. 3, n. 2, pp. 257-278.
WREDE B., ROHLFING K.J., HANHEIDE M., SAGERER G. (2009), "Towards learning by interacting", *Creating Brain-Like Intelligence*, pp. 139-150, Springer, Berlin, Heidelberg.
YIN R.K. (2003), *Case study research: design and methods*, Thousand Oaks.
YIN R.K. (2013), "Validity and generalization in future case study evaluations", *Evaluation*, vol. 19, n. 3, pp. 321-332.
YOHANNIS A.R., DENNY PRABOWO Y., WAWORUNTU A. (2014), "Defining gamification: From lexical meaning and process viewpoint towards a gameful reality", Paper presented at the 2014 International Conference on Information Technology Systems and Innovation, ICITSI 2014.
ZICHERMANN G., CUNNINGHAM C. (2011), *Gamification by design: Implementing game mechanics in web and mobile apps*, O'Reilly Media, Inc.

Website

http://www.kineo.com/
https://axonify.com/
http://www.gameifications.com/gamification/walmart-sicurezza-aziendale-con-la-gamification/
https://www.pwc.com/it/it/about-us.html
http://multipoly.hu/en/game-rules.html
http://www.gameifications.com/enterprise/il-futuro-del-recruiting-e-nella-gamification-il-caso-multipoly-di-pwc
https://bbj.hu/special-report/turning-recruitment-into-a-game_114827
http://marcominghetti.nova100.ilsole24ore.com/2015/10/05/il-potere-della-gamification https://diginomica.com/
http://www.gameifications.com/gamification/walmart-sicurezza-aziendale-con-la-gamification/
https://www.forbes.com/sites/jeannemeister/2015/03/30/future-of-work-using-gamification-for-human resources/3/#24155a1862e4

Online public engagement is the new deal! Along the distinctive pathway of Italian university

LETIZIA LO PRESTI[*] GIULIO MAGGIORE[•] VITTORIA MARINO[♠]

Abstract

Objectives. *The purpose of this paper is to explore the construct of online university public engagement from a managerial perspective through the analysis of those Italian universities that in recent years have engaged in Third Mission activities thanks also to recent ministerial decrees issued on the subject.*

Methodology. *We conducted an analysis of the content of the main official websites from a sample of 50 Italian universities. Furthermore, an exploratory factorial analysis made it possible to identify the main approaches to online public engagement.*

Findings. *There are 4 main dimensions of online public engagement that have been communicated on Italian websites (social, cultural, research and widening engagement), each referring to a specific target. In particular, a so-called "Cultural engagement" approach emerges which underlines the role of the university as a pole of cultural and artistic attraction.*

Research limits. *The research explores public engagement only in the Italian context. Although the article investigates more than 50% of Italian universities, it does not allow the extension of the results to the reference population.*

Practical implications. *Research results contribute to the understanding of online public engagement and map the current uses of stakeholder engagement activities in the university context to date. The research also allows us to detect which dimensions are still little explored by university institutions.*

Originality of the study. *The research enriches the knowledge of the online public engagement construct thanks to the identification of a new dimension, the so-called "Cultural engagement" dimension, that had not yet emerged in international contexts.*

Key words: *public engagement; web communication; managerial perspective; stakeholder; third mission; cultural engagement.*

[*] Research Associate of Business Management - University of Rome Unitelma Sapienza - Italy
e-mail: letizia.lopresti@unitelmasapienza.it

[•] Associate Professor of Business Management - University of Rome Unitelma Sapienza - Italy
e-mail: giulio.maggiore@unitelmasapienza.it

[♠] Associate Professor of Business Management - University of Salerno - Italy
e-mail: vmarino@unisa.it

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6
DOI 10.7433/SRECP.FP.2020.01

1 Introduction

Major changes that have affected the university world for some years now and due largely to strong pressure from society for a more participatory role of university institutions, have certainly been amplified by the new digital tools. It is now possible to communicate and share university strategies and activities with an enlarged community in almost real time thus allowing them to become the protagonists in a process of close-knit integration with their territory and with their community. Universities are gradually abandoning their "ivory tower" to descend more and more often into the reality that surrounds them so that the knowledge they produce can be used for the benefit of their community. The Third Mission and public engagement, one of its main pillars, does precisely this and concretizes the osmotic idea of a relationship between a university and its territory, between the results of scientific research and their benefits for the community, between the processes of growth and social improvement, all activated through the virtuous circuits and synergies created between universities and society.

In particular, public engagement implies that universities listen to and interact with their internal and external communities; social networks and official websites seem to constitute valuable tools in strengthening engagement with all the stakeholders. Indeed, the simplicity, speed and diffusion of social networks may favour the creation of an effective bridge between research, teaching, and public services as they increase the possibility of stimulating the dialogue between and with the public. Despite the fact that the academic literature is unanimous in considering universities as the "engine" of change and social development (e.g. Kerr, 2001; Furco, 2010), yet little has been studied on development opportunities that the university can offer to the territory through the public engagement lever. In Italy, in particular, the potential of public engagement is still poorly understood and there are still many areas of application in our universities which remain unexplored. A synchronized use of all the levers of engagement can help create relationships of trust with citizens as well as new relationships between universities and citizens, universities and businesses, universities and the academic community (e.g. Baccarani, 1995; Stephenson, 2011; Chilvers, 2013; Bandelli and Konijn, 2013; Watermeyer and Lewis, 2018; Goldner and Golan, 2018; Lo Presti and Marino 2019). Public engagement therefore represents a cultural interpretative perspective of the relationships between universities and communities that cannot be separated from the use of digital communication tools (Marino and Lo Presti, 2017; 2018; Lo Presti and Marino, 2019). But how have Italian universities implemented public engagement? And above all how have they communicated and shared it through their digital media? This study aims to investigate the ways in which Italian universities have dealt with public engagement and what dimensions are used the most. Studying university public engagement through communication on official websites has inevitable managerial implications. In fact, by measuring what is actually communicated on the websites, it is possible to rethink and/or design those dimensions that have not yet received visibility. In addition, studies on university public engagement can help strengthen the communication of university identity from a social, scientific or accessibility point of view, depending on the positioning that the university wants to communicate to its public of reference.

2 Background

2.1 The Third Mission of Universities

The significance of the Third Mission of University Institutions has its roots in the last century. Many trace its birth back to 1963 when the rector of the University of California Clark Kerr, in a speech at Harvard, introduced the concept of "Multiversity" thus paving the way for a new idea of University (Multi vs Uni) to be seen as the centre of a community, capable of both including and enhancing its differences and of interpreting those social changes that, stemming from the economic boom of the 1960s, gave way to global transformations around the world. The central point of the

disruptive vision of this enlightened rector is the understanding of how the University had shut itself inside its own boundaries, sitting high in the exclusivity of its own circles, disconnected from its territory and people, and that it would soon implode on itself, accelerating society's perception of its deep detachment from the contemporary world. The University must become a community that creates value for society, thus contributing to the development of human capital and enabling it to face the new challenges of globalization. This innovative idea of University spread quickly and found a wide consensus; and pressure for an increasingly widespread awareness in this regard became stronger and stronger until it finally concretised in the form of recommendations and/or regulatory provisions from the authorities. A "new institutional aim" for universities was thus declared as being part of an open and dynamic system, increasingly interlaced with the external environment (Piccaluga, 2000). In addition to its traditional educational and research purposes (First and Second Mission), university institutions are now increasingly involved in a process of sharing and disseminating knowledge, due to the need to support an economic and social development that goes beyond the academic boundaries (Third Mission). In the very concept of the Third Mission lies the idea that the University is a resource for the territory itself (Cognetti, 2013) and that it must implement strategies and practices that takes its actions outside its actual premises (Gleeson, 2010). The Third Mission aims to enhance the social role of the University - a role, however, that can be interpreted with differing intensity, through different degrees of public involvement, such as awareness, consultation, collaboration or shared leadership. Furco (2010) in this regard speaks of an "engaged campus" in order to underline the single objective of its tripartite mission. The author argues that university campuses can be defined as "engaged" when each mission has the same priority and when not only does the University involve its community of reference but is itself called upon by the public with whom it comes into contact, thus activating a virtuous circle in which truly authentic strategies of engagement, aimed at establishing value and lasting relationships with the stakeholders, come into play. The last two decades of the 20th century, particularly in Anglo-Saxon countries, saw numerous attempts to implement management models in order to confer more substance to the Third Mission. This multitude of more or less virtuous cases have given rise to an international case study whose goal is the definition of best practices and, therefore, valid criteria for measuring performance and impact on the territory. In Italy, the debate on the Third Mission is in full swing.

With regard to Italy, ANVUR, the National Agency for the Evaluation of the University System and Research, in its Public Announcement for The VQR 2004-2010, defined eight indicators of the Third Mission, most of them linked to financially valorising research, research contracts and subcontracted consulting, patents, spin-offs, participation in think-tanks and consortia with technological transfer purposes; other indicators referred to the enhancement of knowledge for the well-being of society, such as the management of archaeological sites, museum poles and other activities. An open category for "other activities of the Third Mission", broad and indefinite, shows a conceptual confusion that as yet has not been fully clarified. In fact, creating a single final indicator for the Third Mission proved to be problematic and opened a phase of discussion and elaboration in the agency that saw the establishment of a group of Experts of the Third Mission for the analysis of evaluation criteria, possible indicators and sources, and the organisation of several workshops on the state of the art of the Third Mission indicators. With the second research assessment, the 2011-2014 Research Quality Assessment (VQR 2011-2014) where better tools tested by ANVUR were in fact used, the results of the assessment showed significant differences between universities, in particular in terms of comparability. As a result, it became clear that further reflection was needed on the definition of the Third Mission and its measurement. More recently, the Third Mission Assessment Manual for Italian Universities was approved and published in 2015 by ANVUR, effectively making the Third Mission one of the assessment parameters of research quality, together with Life-Long Learning and Public Engagement. In fact, according to some Authors, the Third Mission system can therefore be segmented into three main ambits: innovation and technology transfer; permanent education; Public Engagement (Boffo *et al.*, 2015). In the first area - innovation and technological transfer - research is transformed into knowledge useful for

production purposes, using an entrepreneurial approach. Whereas in the other two ambits of permanent education and social engagement, a logic of community service tends to prevail through cultural, social, educational or civil content contributions, capable of enhancing and multiplying the collective resources: an invisible revolution that scholars have long highlighted at an international level - the overcoming of the traditional academic self-exaltation thanks to an increased interdependence with the surroundings in a mutually advantageous exchange of diverse strategic resources. This change of perspective in Italy is also evident in the last evaluation of the research (VQR 2015-2019). The Third Mission appears strengthened in the ability to give relevance to the University Institution in its territory, confirming and expanding the parameters of evaluation. The evidence of this activity is given through the case studies which, presented in limited numbers by the department and/or institution, must be able to illustrate the social, economic and cultural dimension of the impact, the relevance with respect to the reference context, the added value for the beneficiaries, the contribution of the proposing structure. Following a standard scheme provided directly by Anvur, with this new method of presenting the results, an attempt was made to limit the risk of a conceptual confusion represented by the summary that was required in previous assessments.

2.2 Public Engagement: its Foundation and Purpose

Unlike the other areas of the Third Mission, Public Engagement remains, above all in Italy, a pillar of the Third Mission still to be explored and consolidated. Much attention is being focused today on this subject in view of the progressive financial squeeze that has been plaguing the university system for years, driving them more and more towards a collaboration with the world of business and local authorities. And if society as a whole does not fully understand the value produced by Universities and does not share its objectives, it will be increasingly difficult to attract the resources necessary for research, knowledge and progress, either from the public sector or from the private sector. Many initiatives, especially at an international level, aimed at coordinating the dissemination of scientific research and at enhancing scientific studies and research were already widely implemented well before what is the current level of diffusion of public engagement. In October 2002, a short article in Science informed the scientific community that the term “Public Understanding of Science” (PUS), better known as the Bodmer.

Report dating back to 1985, was now obsolete and, to indicate the increasingly complex relationship between scientific research and society, it was necessary to introduce a more explicit terminology to render its re-conceptualization and emphasise the dimension of public involvement: the “Public Engagement with Science and Technology” (PEST). The PUS was based on the assumption that the public passively receive the knowledge produced by the scientific community. The translation of the results of their research into a language that everyone understood was entrusted to the mass communication channels who used a language that was mostly improper and sometimes trivial and had the opposite effect to what was intended thus to all effects increasing the gap between science and the general public. No longer a diffusion of scientific knowledge and research results only and exclusively from the top down, today the focus is on a dialogue between the scientific communities and society in order to make the social consequences of science more and more effective, efficient and understandable. The one-way communication process, which has always characterized the transfer of knowledge, has also begun to feed off this dialogue between equals and the participation of those who will subsequently be the users and/or beneficiaries of that knowledge, and therefore sets off the involvement process right from the initial definition of its research paths and shares the dissemination of the results.

There have been some important foreign initiatives in this regard. In the United Kingdom, The National Co-ordination Centre for Public Engagement (NCCPE) was founded in 2008 to support universities in increasing the quality and impact of their public engagement activities. It is probably the institution that more than any other has inspired the philosophy of current public engagement and has made it a working priority for all those who carry out basic and applied research activities.

The same body defines public engagement as "[...] the myriad of ways in which the activity and benefits of higher education and research can be shared with the public. Engagement is by definition a two-way process, involving interaction and listening, with the goal of generating mutual benefit" and identifies the following three macro categories of goals that Public Engagement must necessarily pursue. 1. Inspire, inform and educate the public and make the results of the university's work more accessible. 2. Activate permanent listening to the public's point of view, their concerns and any further knowledge they may require. 3. Work directly with the participation of the public to solve problems together and activate the mutual exchange of skills. In the United States the Carnegie Foundation has worked for years to improve the quality of public and private institutions, certifying universities as a "community engaged institution" through a five-year survey of the level of public engagement based on the documentation that the agencies involved spontaneously provide to the Foundation. The Carnegie Foundation uses the following definition of community engagement "the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (The Carnegie Foundation for the Advancement of Teaching, 2013). In Italy, Anvur, in its Handbook for the Evaluation of the Third Mission of 2015, defines Public Engagement as the set of non-profit activities with educational, cultural and societal value. It also indicates that the activity and benefits of higher education and research can be communicated and shared with the public in a number of ways, and adds a number of activities that can be considered fully part of Public Engagement (Anvur, 2015). Subsequently, due to the confusion that still remains on the subject and the very heterogeneous measurements that were made in the first VQRs, during the first Assembly of the APEnet (Italian Network of Universities and Research Bodies for Public Engagement) in March 2018, in collaboration with ANVUR, a review of the definition of Public Engagement was proposed that, as a result of the critical issues which emerged, further specified the types of activities and recipients of the same. Public Engagement can therefore be defined as the set of activities organized institutionally by the University or its non-profit structures with educational, cultural and societal value and addressed to a public of non-specialists. It is evident in this first classification, that the institutional nature of the activities that are part of Public Engagement and the need to address a non-specialist public has been highlighted, but it also confirms the fact that the definition of what public engagement is exactly and how it is to be implemented still remains, in Italy and in most cases also abroad, an unfinished work that certainly needs further investigation.

2.3 Public Engagement in the perspective of management studies

Despite its immediate conceptual association, the study of public engagement has been addressed from different perspectives, revealing the complexity of how its actions are to be identified and implemented to enable the participation of the Public. In the strictly managerial sphere, public engagement is linked to the need for greater stakeholder involvement in the activities and in choosing organizations. There are many contributions present in the literature that, through qualitative and quantitative methodological approaches, illustrate theoretical experiences, best practices and frameworks (Borum *et al.*, 2017; Bandelli and Konijn, 2013; Bruning *et al.*, 2006; Curtis, 2014; Domegan, 2008; Hart and Northmore, 2011; Kim, 2007; Watermeyer, 2012, 2016; Watermeyer and Lewis, 2018). Studies on the subject converge towards the search for a unique definition of the phenomenon and the dimensions of the construct (Hart and Northmore, 2011) but little has been said about the nature of Public Engagement, its determinants and the context in which it is investigated (Watermeyer and Lewis, 2018; Davies, 2013a, 2013b; Hart and Northmore, 2011). Being able to observe Public Engagement in action at a university represents a great opportunity not only because of the great changes that are affecting the academic world but also because it allows us to circumscribe the phenomenon within well-defined boundaries. It is dealt with from three different perspectives: in relation to the context that determines its definition; in

relation to the effectiveness of its activities; and, finally, in relation to its usefulness for those who implement it and for those who benefit from it.

Preliminary studies on Public Engagement date back to 2004 in the ambit of Public Management and Communication and to 2006 for the Marketing area. But it has been the last five years that have shown a significant quantitative increase in the number of articles published in all thematic areas, demonstrating the growing interest in the subject. In particular, previous research has shown that University Public Engagement can be found most in the Communication Area, only partly in the Area of Public Management and residually in the Marketing Area (Marino and Lo Presti, 2018; Lo Presti and Marino, 2019). One of the most important studies (Hart and Northmore, 2011) identified the dimensions of public engagement, each of which can be identified as an objective for a specific target, both at the level of potential users and at the level of individuals directly involved in the organization, laying the groundwork for the definition of a theoretical framework of reference (Tab. 1).

Tab. 1: Subjects involved and beneficiaries for each dimension of university public engagement

N.	Dimension	Meaning	Subjects involved	Beneficiary subjects
1	**Public access to facilities**	Access to the university structures: libraries, gyms; open-air spaces; multi-media rooms etc.	Citizens; Students (current and prospective students); parents; Non-profit organizations	Students; citizens
2	**Public access to knowledge**	Access and sharing of the results of the scientific research produced inside the university or in collaboration with the territory	Students, Enterprises; citizens; associations	University
3	**Student engagement**	Student involvement through voluntary activities or through collaboration with research	Students (current and prospective students)	Civil society
4	**Faculty engagement**	Involvement of the teaching staff in socially committed activities through voluntary activities or through the research for solutions to social problems	Academic staff; citizens	Civil society; territory
5	**Widening participation**	Activities for the constitution of partnerships with the territory	University	Students, citizens
6	**Encoraging economic regeneration**	Activities for technology transfer or business consultancy	University	Firms and Institutions
7	**Institutional relationships and partnership building**	Activities aimed at the inclusion of subjects of discrimination by sex, race or physical condition	University	Public Institutions; Associations

Source: our adaptation from Marino and Lo Presti (2019)

It is evident that public engagement can be understood as an articulated construct that involves interaction and bidirectional exchange between two parties in order to co-create knowledge. In understanding the ultimate goal of public engagement it is important to focus more and more on resources and intangible relationships (Vargo and Lush, 2004). In this way, value can be created through interaction that allows a co-creation process. Once again it is Vargo and Lush who introduce the interpretative scheme of the Service-Dominant Logic which is based on the assumption that organizations are interested in the exchange of services, that is, "the application of skills by one entity for the benefit of another" (Vargo and Lush, 2008). This, in practice, implies the recognition of the fact that the value of the service is generated collaboratively through a network of one's own resources that, once made available and integrated with each other, contribute to the co-creation of value. The service ecosystem construct, adopted in the Service-Dominant Logic (S-D Logic), underlined the awareness of the opportunities arising from adequate resource management through the integration of economic, social and political actors and fostered the foundation of the

concept of service ecosystem (Vargo and Lusch, 2016). Even though there is agreement in the literature on the dimensions of public engagement and its objectives, there is still much debate regarding the different perspectives used for its definition and how it is to be implemented. Some authors see public engagement as a series of activities aimed at bringing the general public closer to science, stimulating informal debate and dialogue, for example students and teachers doing voluntary work. It therefore refers to a series of initiatives that Universities can put into place to achieve the objectives of Public Engagement. As an example, we have open labs, live science, open days, live demonstrations, meetings to explain scientific research. Such activities are usually aimed at a wide and undifferentiated audience of individuals, schools, parents and pupils, businesses and the whole community who could be interested in an active participation in the event organized by the University. From a more nuanced perspective, public engagement refers to a process of individual and collective problem solving on aspects related to scientific research whose main characteristic lies precisely in the involvement of stakeholders during the decision-making process. And it is precisely this involvement that stimulates innovation and the search for useful solutions (Kim, 2007; Capurro *et al.*, 2015; Bandelli and Konijn, 2013; Watermeyer, 2016; Boland, 2014; Krabbenborg and Mulder, 2015). This type of interpretative perspective focuses on the connector, that is, on the relational node capable of establishing a conjunction between the parties involved, thus making Public Engagement a process that will ensure the realization of a stable stakeholder participation. The stronger and more stable the connection, the more significant the benefits that are produced for the network of actors. Today public engagement is still considered by some authors to be a strategy or method orientated to making science available to the general public but also to bringing about social changes and a stronger and fairer democracy (Curtis, 2014; Tosse, 2013; Miller *et al.*, 2009; Fall, 2006; Bruning, *et al.*, 2006; Domegan, 2008; Hinchliffe, 2014; Tang *et al.*, 2013; Ward *et al.*, 2008). It is a strategy for the production of knowledge in the economic, social and cultural perspective that strengthens the social role of the university (Davies, 2013a; Wilkinson *et al.*, 2011; Ostrander, 2004; Stephenson, 2011).

Other studies see public engagement in universities as a new way of relating to its stakeholders. In this case, the public engagement adopted by the University facilitates a sense of citizenship and social conscience and brings the community closer to the academic world of universities, traditionally perceived as very distant from society. In this new vision, Public Engagement is also associated with the ambit of Corporate Social Responsibility (CSR) (Boland, 2014). This new vision, however, involves cultural change, new educational models, new skills and a change in the traditional organizational models to interact with stakeholders (Stephenson, 2011; Chilvers, 2013, Retzbach and Maier, 2015; Kimmel *et al.*, 2012; Persell and Wenglinsky, 2004; Denson and Bowman, 2013). Finally, there are studies that see Public Engagement as a communication tool (Poliakoff and Webb, 2007; Chilvers, 2013). Encouraging dialogue, discussion, participation and enabling the dissemination of scientific knowledge beyond the academic walls, are strategic objectives of the universities and are more easily achieved through a kind of communication orientated specifically towards these purposes. Today, in order to set up new training proposals, to better focus on research and to increase the number of social actors involved, it is essential to focus on all the activities of the University as any loss of attention on the part of the public concerned would result in an immediate loss of efficiency and effectiveness of the services offered. The focus on technology and innovation of communication styles and tools and the need to be attractive to students, teachers and social partners, with the adoption of marketing strategies, advertising, guidance and fundraising, are issues that in the past hardly ever emerged publicly in the context of higher education, but today they have become necessary as the demand for university education and, consequently, its structures (Morcellini, 2005) increases. University communication today plays a strategic role as a tool in raising awareness in the general public of the role that the University plays in society today and its performance in every field of competence, especially in these times of identity crisis.

The literature also questions the results of public engagement in universities. One of the most important objectives is related to the dissemination of information related to the university world,

increasing public awareness on all the scientific issues while maintaining a high interest, particularly in young people, for all the different scientific fields (Davies, 2013a; Wilkinson *et al.*, 2011; Winter, 2004; Curtis, 2014; Watermeyer,2016; Schoerning, 2018). This can also lead to an improvement in the image, reputation and identity of university institutions in the community (Bruning *et al.,* 2006; Watermeyer, 2016; Ward *et al.,* 2008). It also improves the quality of learning as it is based on the actual needs of the community and helps to support businesses in their challenges by finding new opportunities in an ever-changing environment. The benefits of public engagement in terms of perceived quality are also evident in the collaboration between universities and communities to drive social and institutional change towards a more just society (Boland, 2014; Kimmel *et al.,* 2012; Ostranger, 2004; Stephenson, 2011; Kimmel *et al.,* 2012; Krabbenborg and Mulder, 2015). Public engagement also helps to build a deep synergy between academia and society in value co-creation processes, through the construction of learning action networks (LANs) that connect people through information and ideas (Watermeyer, 2012; Stephenson, 2011; Hinchliffe *et al.,* 2014; Kimmel *et al.,* 2012; Dickerson-Lange *et al.,* 2016). But public engagement also stimulates emotional and experiential aspects and increases the degree of personal satisfaction and fun. In fact, science poles and museums become facilitators of a dialogue between scientists and the public and represent a valuable platform for disseminating scientific content to the general public (Miller *et al.,* 2009; Wilkinson *et al.,* 2011; Denson and Bowman, 2013; Bandelli and Konijn, 2013; Chilvers, 2013; Goldner and Golan, 2018). Finally, public engagement, through the new online communication tools, facilitates the interaction between researchers, scientists and stakeholders, thus increasing accessibility, in particular for businesses, to the knowledge produced by scientists (Miller *et al.,* 2009; Wilkinson *et al.,* 2011; Denson and Bowman, 2013; Bandelli and Konijn, 2013; Chilvers, 2013; Goldner and Golan, 2018). The use of tools like websites and social networks, contributes to giving a greater impetus to public engagement and above all gives visibility to the multiple activities that fuel it.

3 Methodology

3.1 The sample

To assess the potential of the phenomenon of public engagement in countries like Italy that have only recently started to develop knowledge and sensitivity towards this phenomenon, we analysed the websites of 50 universities from a list of 98 universities (both public and private) present on Italian territory and published on the ISTAT website for university institutions (www.ustat.miur.it). Online university public engagement was investigated through an analysis of the content of their official websites using an evaluation grid already validated in the literature (Marino and Lo Presti, 2018; 2019) for the analysis of online public engagement in British and American universities. Furthermore, our research was based on the theoretical framework proposed by Hart and Northmore (2011) who define university public engagement as a 7-dimensional construct. Each dimension of public engagement was then operationalized for a total of 23 items (Marino and Lo Presti, 2017).

3.2 Website analysis and inter-rater reliability

In order to analyse the 50 university websites, a content analysis was adopted with a methodology consolidated in the literature in the context of university public engagement (Marino and Lo Presti 2018; 2019) and in the context of management (e.g. Schmidt *et al.,* 2008). An analysis of the content allows us to analyse the phenomena that are still in an exploratory phase. Woodside et al. (2011) affirm that the quality of websites is generally achieved through the richness of the content and ease of use. Exploring the content on websites and applying statistical methods to measure its effectiveness permits us to understand which are the most critical aspects and which

ones need improvement. Furthermore, a content analysis of the websites explores the content while taking into account its presentation and its communicative effectiveness (Wan, 2002; Polillo, 2005; Gordon and Berhow, 2009; Polillo, 2013; Marino and Lo Presti, 2017). To evaluate each website, the evaluation grid was divided into two sections: a first section explores the presence or absence of public engagement and/or the Third Mission on its homepage; whereas the second section explores the quality of the communication, accessibility and the navigability of the information for each dimension of public engagement within the website (Marino and Lo Presti, 2017).

To carry out this task, three evaluators, experts on public engagement issues, assessed each aspect connected to each dimension of public engagement on a 5-point Likert scale (from 1 = definitely not visible to 5 = definitely visible) (Marino and Lo Presti , 2018; 2019). Before the assessment, the evaluators were "instructed" on how to compile the evaluation forms. A pilot test and evaluation was carried out in the presence of the authors of this paper in order to reduce the margins of error. Since the biggest limit of content analysis is subjectivity during the evaluation process, the coefficient of concordance was calculated, using Kendall's W test for each dimension. This coefficient ranges from 0 (absence of concordance) to 1 (maximum concordance).

The concordance test revealed a wide agreement between the evaluators ($W = 0.50$ $p = <0.01$ for public access to knowledge; $W = 0.60$ $p = <0.01$ for widening participation; $W = 0.62$ $p = <0.01$ for public access to facilities; $W = 0.52$ $p = <0.01$ for encouraging economic regeneration and finally, $W = 0.66$ $p = <0.01$ for the institutional relationship and partnership building dimension; $W = 0.55$ $p = <0.01$ for student engagement) and a discreet concordance for the faculty engagement dimension ($W = 0.40$ $p = <0.01$).

3.3 Reliability analysis and Exploratory Factor Analysis

For each dimension of university public engagement, a reliability analysis was conducted by calculating the Item to Total Correlation (ITC) and Cronbach's Alpha (Table 3). This analysis led to the elimination of the faculty engagement dimension, made up of three items, which do not seem to adequately represent the dimension (Cronbach's Alpha <.65). The reliability analysis also made it possible to remove three other items that resulted from the analysis with Item toTtotal Correlation <.40 (Public engagement office within the Institutional partnership dimension; public databases and research involvement belonging to the Public knowledge dimension). At the end of this phase, the public engagement scale is composed of 17 items and each dimension has a Cronbach Alpha > .65 and an ITC > .40 (Table 3). The overall Cronbach's Alpha of the scale is .887 and an ITC > .415.

An exploratory factorial analysis was conducted on the assessment of the 17 items in order to detect the approaches to public engagement adopted by Italian universities on their official websites. In fact, Italian universities can also be distinguished by a different approach to public engagement that could well be connoted to the mission that the university institution has set itself to achieve. Furthermore, resources and skills in this sense are strategic to identify which "approach" could be more suitable in relation to the "university vocation" and how much of these must be strengthened in order to make this attitude manifest (Marino and Lo Presti, 2019).

4 Results

4.1 Descriptive analysis

The analysis of university public engagement through their official websites was conducted on the top 50 universities from a list that includes all Italian universities accredited by MIUR (51% of 98 universities). As can be seen in table 2, the analyses include the universities of Northern and

Central Italy. Almost all the universities in the north west and all those in the north east of Italy were analysed. The analysis only partially includes the universities of Central and Southern Italy.

Of the 50 universities analysed, it was found that 28 universities presented a section dedicated to the Third Mission. 23 of these universities entered a reference to the Third Mission directly on the homepage accessible from the navigation bar. While only 24 universities report a section dedicated to Public engagement and, in 7 cases, this section can be reached from the homepage. While if we observe each single dimension of public engagement, the exploratory analysis of the websites gives a fairly homogeneous picture in terms of communication of the dimensions of public engagement (table 3). The construct is averagely communicated on university websites (mean = 3.21).

Tab. 2: University sample for geographical area

Region	University sample	Italian Universities
Piemonte	4	4
Lombardia	14	15
Liguria	1	1
Valle d'Aosta	1	1
Nord ovest	20	21
Emilia-Romagna	4	4
Friuli Venezia Giulia	3	3
Trentino Alto Adige	2	2
Veneto	4	4
Nord est	13	13
Lazio	2	19
Marche	4	4
Toscana	7	8
Umbria	2	2
Centro	15	33
Abruzzo	1	5
Basilicata	0	1
Calabria	0	4
Campania	0	9
Molise	0	1
Puglia	1	5
Sud	2	25
Sardegna	0	2
Sicilia	0	4
Isole	0	6
Total	**50**	**98**

Source: our elaboration

In some Italian universities this index is above average (> 4.0) for all dimensions (e.g. University of Turin, University of Bergamo and University of Parma) except for faculty engagement which results the least communicated dimension among all the dimensions analysed. As can be seen from table 3, as a whole, the dimensions of public engagement that have greater online visibility are those dealing with access to university structures for non-academic publics (citizens, institutions, associations, companies), access to scientific knowledge and access to study that respects diversity.

This concept of "access" is manifested not only through the possibility of entering university structures to participate in public conferences or science fairs, but must also be understood as facilitated "access" to scientific knowledge and greater participation in academic research results. Unlike the international context, the dimension of student engagement is poorly valorised (mean = 2.70) (Marino and Lo Presti, 2018). In particular, the activities that promote student volunteer work or those that see the joint participation of students, teachers and communities in view of a common benefit for all, are on the whole not well developed. The "Institutional partnership" dimension also reports lower average values (mean = 2.65) than the public engagement index (mean=3.21)

(calculated as Lo Presti and Marino, 2019), despite the fact that universities have shown themselves to be active in exploiting the possibility of enhancing visibility for web pages dedicated to the promotion of the university's territory and the beauty of its landscape.

Tab. 3: Item Total Statistics

N.	Dimension	N. of Items	Mean	Min.	Max	Variance	Alpha di Cronbach
1	Public access to facilities	4	3.57	3.22	4.28	.23	.67
2	Public access to knowledge	2	3.83	3.50	4.16	.21	.65*
3	Student engagement	4	2.70	2.18	3.76	.52	.70
4	Faculty engagement	3	2.02	1.06	2.74	.75	.27**
5	Widening participation	2	3.55	3.32	3.78	.10	.89
6	Encoraging economic regeneration	3	3.18	2.70	3.46	.17	.82
7	Institutional partnership	2	2.65	2.10	3.20	.60	.66*
	Public engagement index	17	3.21	2.10	4.28	.42	.88

Note: * Cronbach's alpha is calculated missing the items with the ITC <.40; **the dimension of Faculty engagement has a Cronbach's Alpha <.65 for this reason therefore it was not taken into account for exploratory factorial analysis.

Source: our elaboration

4.2 Digital engagement approaches to university public engagement

Both the KMO index for the measurement of sample suitability equal to 0.728 (> of 0.50) and Bartelett's sphericity test (<0.001 df = 136) confirm the appropriateness of the development of the factorial analysis (Lattin *et al.*, 2003). The coefficient of reliability, Cronbach's α, for the single factors is acceptable (1st factor: 0.86; 2nd factor: 0.73; 3rd factor: 0.82; 4th factor: 0.73). All the variables show a commonality equal or greater than 0.50, showing a good overall significance of the analysis that has produced a structure of four factors (Table 4).

The exploratory factorial analysis generated 4 dimensions of online public engagement. Compared to the American or English context (Marino and Lo Presti, 2018), Italian universities give much more space to "social engagement" such that it is possible to identify another approach to university public engagement that could fall into the "cultural engagement" category. Most likely this is related to the Italian culture which boasts a historical past of great value and which can then be found in its web communication.

As for the other dimensions, we can confirm a certain affinity with the other dimensions that emerged from the research of Marino and Lo Presti (2018) on British and American universities. In particular, the "research engagement approach" dimension is confirmed, which corresponds to the "encouraging economic regeneration" dimension identified by Hart and Nortmore (2011) and which seems to be communicated quite well at Italian universities. Furthermore, while in American universities there is an office for public engagement in Italy this is not yet the case.

Therefore the factorial analysis allows us to recover the dimensions of online public engagement attributable to different approaches, that is to say methods of implementation of public engagement capable of putting in place actions aimed at involving the main players in the area:

- *Widening engagement* - this dimension is made up of items that involve students in research activities, volunteer work, also with financial assistance, and activities that encourage access for students with disabilities.
- *Cultural engagement* - this dimension includes all those activities that connect the university to local resources or that connect university resources to different non-academic publics (institutions, citizens and relatives). In this dimension, reference is made to the importance of culture which, especially in Italy, is connected to art and tourism. The university has a central role in these aspects and cultural engagement is a catalyst and the privileged conduit for cultural and educational activities.

Tab. 4: Engagement approaches to university public engagement in the Italian sample

		Dimensions of online public engagement			
		Widening engagement	**Cultural engagement**	**Research engagement**	**Social Engagement**
5.b	Strategy in favor of the public to encourage the access of students with disabilities	.976			
5.a	Financial assistance, peer-mentoring, etc. to improve recruitment and the success rate of students from non-conventional backgrounds	.940			
1.d	Public access to the sports facilities and to summer sports schools	.718			
3.a	Students doing voluntary work	.632			
4.a	Activities organized by the students, e.g. art, environment, etc.	.591			
1.c	Sharing structures, e.g. museums, art galleries and entertainment organized by the university		.798		
7.b	Web site with pages dedicated to location or city		.752		
7.c	Conferences with public access to discuss social questions, e.g. ceremonies, awards, shows		.680		
1.a	Access to the university libraries		.573		
6.a	Collaboration with research and technological transfer			.905	
6.c	Consultancy services for enterprises that produce and exchange goods and services of social utility (e.g. Social enterprises)			.834	
6.b	Initiatives for technological development (e.g. that brings together staff, students and members of the community to plan, and develop technology for people with disabilities)			.743	
2.a	Access to pre-established study programs				.871
1.b	Access to university spaces, e.g. for conferences, meetings, events, accommodation, gardens, walking tours, discovery programs, campus tours, etc.		.476		.626
2.b	Public involvement in events, science fairs, science shops, etc				.623
3.b	On-site learning, e.g. traineeships, collaboration in research projects, etc.				.415
3.c	Curriculum engagement				.338
	Eignvalue	6.246	1.709	1.579	1.229
	Percent of variance	36.743	10.054	9.288	7.228
	Cumulative percent of variance	36.743	46.797	56.085	63.314

Note: Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization. Loading under |0.35| are not shown.

Source: our elaboration

- *Research engagement* - this dimension, on the other hand, includes all those activities related to technology transfer, consultancy activities, and activities aimed at involving the diversified publics in technological development.
- *Social engagement* - in this dimension we can find all those activities that directly involve universities with the territory. This involvement concerns opening the university to the outside community, through conferences for scientific dissemination and developing collaboration to finalize research towards applications useful to the real needs of the public. In this case, the university makes its skills and academic programmes available to a wider audience in the form of applied knowledge.

5 Discussion and conclusion

This research shows that online university public engagement is a complex construct that can take on different facets depending on the country. In fact, while on the one hand the research confirms that the dimensions of online public engagement are those connected to the social dimension, to research and to its willingness to open university boundaries towards collaboration with other non-academic stakeholders, on the other hand this research identifies a new dimension connected to culture and to the dissemination of scientific knowledge through museum events and structures and access to libraries, which seems to be a distinctive feature of Italy as a country and another important manifestation of university public engagement. This result enriches current research on university public engagement and demonstrates the complexity of the construct which, to date, is struggling to be applied in its entirety despite the recognition of its importance. This paper tries to fill the gap of literature by providing a comprehensive study that investigates the nature of public engagement and its determinants by means of Italian context that it is not been fully investigated through digital communication.

At the same time, this research tries to demonstrate that public engagement, precisely by virtue of its complexity, is capable of demonstrating the social and community nature of the university also through its core product: culture. Indeed, the presence of a new dimension that communicates culture-orientated university public engagement seems to be a prerogative of the Italian university. This new perspective fits well both with the mission of public engagement and with the concept of culture itself (William, 1958). Hess *et al.,* (2007) talk about a model for cultural engagement resulting from the interaction and participation between multiple actors (academic and otherwise) in order to create effective cultural growth: "The CMCE (Conceptual Model for Cultural Engagement [ours]) develops long-term interactive relationships between faculty, students, and communities from an asset-based perspective […]. Individuals in this relationship are active participants in the process of growing toward cultural effectiveness" (Hess *et al.,* 2007, p. 34). Doyle (2010) also highlighted the social role of the university, especially with reference to the value of cultural engagement as an engine that activates university efforts. In fact, if we consider the definition of "culture" as provided by the principle scholars of the topic (e.g. William, 1958), the dual role of the university as a social promoter and cultural promoter clearly emerges. The former has to do with the norms and the values that form a society and through which the university expresses itself; the latter, on the other hand, is aimed more at enriching the quality of life. In Italian universities there is a wide variety of activities that involve both the university and other players in the area: civil society, companies, institutions and associations. In this sense, the university plays a decisive role in influencing the culture of a territory in terms of increasing cultural and social capital. This research shows that universities are not to be seen only as an allied service industry in which the knowledge of other territorial actors converge (Doyle, 2010), but also the place where the "sense of culture" is cultivated as an art through participatory and free learning in which processes of discovery and creative effort are activated (William, 1958). The rediscovery of this important role of the university enriches the very concept of public engagement. This means that academic research should commit to studying public engagement in a cross-cultural perspective in order to highlight the facets of the construct.

In this sense, the concept of cultural engagement also serves to indicate the university's ability to use service-learning courses to help students develop cultural competence (Hess *et al.,* 2007). Universities therefore need to develop reciprocal relationships between faculty members, community partners, and higher education students in order to activate participation in culturally engaged learning (Hess *et al.,* 2007).

The research results show the absence of faculty engagement in the sample universities analysed. This important result should lead to some reflections on the importance of faculty engagement as another important dimension of the university's ability to be for and with its territory. This also leads us to imagine an opportunity to structure and plan activities that can adequately develop and communicate this dimension. Although this paper analyzes online

communication strategies that do not always coincide with the public engagement policies actually adopted by the universities, the indicators used are to be considered valid proxies of the real public engagement activities carried out by universities and therefore these indicators can provide useful information to help universities to fill the information gap on websites. This research investigates only a sample of Italian universities and therefore the results cannot be extended to the entire population. Moreover, this research carries out an analysis of online public engagement strategies at the University level, but future research developments could focus on investigating public engagement at the Departmental level. Despite this, the research investigates a country that has not yet been fully explored in the literature on the subject, particularly with reference to public engagement as a 7-dimensional construct.

References

BACCARANI C. (1995), "La complessità delle relazioni tra i soggetti istituzionali locali preposti allo sviluppo: il possibile ruolo dell'università, *Sinergie*, n. 36/37, pp. 95-110

BANDELLI A., KONIJN, E.A. (2013), "Science centers and public participation: Methods, strategies, and barriers", *Science Communication*, vol. 35, n. 4, pp. 419-448.

BOFFO S., MOSCATI R (2015), "La Terza Missione dell'università. Origini, problemi e indicatori", *Scuola Democratica*, n. 2, pp.251-272.

BOLAND J.A. (2014), "Orientations to civic engagement: insights into the sustainability of a challenging pedagogy", *Studies in Higher Education*, vol. 39, n. 1, pp.180-195.

BORUM CHATTOO C., FELDMAN, L. (2017), "Storytelling for social change: Leveraging documentary and comedy for public engagement in global poverty", *Journal of Communication*, vol. 67, n. 5, pp. 668-701.

BRUNING S.D., MCGREW S., COOPER M. (2006), "Town-gown relationships: Exploring university-community engagement from the perspective of community members", *Public Relations Review*, vol. 32, n. 2, pp.125-130.

CAPURRO G., DAG H., LONGSTAFF H., SECKO D.M. (2015), "The Role of Media References During Public Deliberation Sessions", *Science Communication*, vol. 37, n. 2, pp. 240-269.

CHILVERS J. (2013), "Reflexive Engagement? Actors, Learning, and Reflexivity in Public Dialogue on Science and Technology", *Science Communication*, vol. 35 n. 3, pp.283-310.

COGNETTI F. (2013), "La third mission delle università. Lo spazio di soglia tra città e accademia", *Territorio*, vol. 66, pp. 18-22.

CURTIS V. (2014), "Public engagement through the development of science-based computer games: The Wellcome Trust's "Gamify Your PhD" initiative", *Science Communication*, vol. 36, n. 3, pp. 379-387.

DAVIES S.R. (2013a), "Constituting Public Engagement: Meanings and Genealogies of PEST in Two U.K. Studies", *Science Communication*, vol. 35, n. 6, pp. 687-707.

DAVIES S.R. (2013b), "Research staff and public engagement: A UK study", *Higher Education*, vol. 66, n. 6, pp. 725-739.

DEBORAH J., HESS H.L., WINSTON V. (2007), "Educating for Equity and Social Justice: A Conceptual Model for Cultural Engagement", *Multicultural Perspectives*, vol. 9, n.1, pp. 32-39.

DENSON N., BOWMAN N (2013), "University diversity and preparation for a global society: the role of diversity in shaping intergroup attitudes and civic outcomes", *Studies in Higher Education*, vol. 38, n. 4, pp. 555-570.

DICKERSON-LANGE S.E., EITEL K.B., DORSEY L., LINK TE, LUNDQUIST J.D. (2016), "Challenges and successes in engaging citizen scientists to observe snow cover: from public engagement to an educational collaboration", *Journal of Science Communication*, vol. 15, n. 1, pp. 1-14.

DOYLE L. (2010). "The Role of Universities in the 'Cultural Health'of their Regions: universities' and regions' understandings of cultural engagement", *European Journal of Education*, vol. 45 n. 3, pp. 466-480.

DOMEGAN C.T. (2008), "Social marketing: implications for contemporary marketing practices classification scheme", *Journal of business and industrial marketing*, vol. 23, n. 2, pp. 135-141.

FALL L. (2006), "Value of engagement: Factors influencing how students perceive their community contribution to public relations internships", *Public Relations Review*, vol. 32, n. 4, pp. 407-415.

FURCO A. (2010), "The Engaged Campus: Toward a comprehensive approach to Public engagement", *British Journal of Educational Studies*, vol. 58, n. 4, pp. 375-390.

GLEESON R.E., The Third Mission and the History of Reform in American Higher Education, in Inman P., Schuetze H.G. (eds), *The Community Engagement and Service Mission of Universities*, Niace, Leicester 2010, pp. 121-137.

GOLDNER L., GOLAN D. (2018), "What is meaningful civic engagement for students? Recollections of Jewish and Palestinian graduates in Israel", *Studies in Higher Education*, vol. 44, n. 3, pp. 1-15.

GORDON J., BERHOW S. (2009), "University websites and dialogic features for building relationships with potential Students*", Public Relations Review*, vol. 35, n. 2, pp. 150-152.

HART A., NORTHMORE S. (2011), "Auditing and Evaluating University-Community Engagement: Lessons from a UK Case Study", *Higher Education Quarterly*, vol. 65, n. 1, pp. 34-58.

HINCHLIFFE S., LEVIDOW L., ORESZCZYN S. (2014), "Engaging Cooperative Research", *Environment and Planning A*, vol. 46, n. 9, pp. 2080-2094.

KERR C. (2001), *The uses of the university*, Boston, Harvard University Press.

KIM H.S. (2007), "PEP/IS: A new model for communicative effectiveness of science", *Science Communication*, vol. 28 n. 3, pp. 287-313.

KIMMEL C.E., HULL R.B., STEPHENSON M.O., ROBERTSON D.P., COWGILL K.H. (2012), "Building community capacity and social infrastructure through landcare: a case study of land grant engagement", *Higher Education*, vol. 64, n. 2, pp. 223-235.

KRABBENBORG L., MULDER H.A. (2015), "Upstream public engagement in nanotechnology: Constraints and opportunities", *Science Communication*, vol. 37, n. 4, pp. 452-484.

LO PRESTI L., MARINO V. (2019), "Is on line public engagement a new challange in the unversity communication plan? A managerial perspective", *Studies in Higher Eduction*, DOI: 10.1080/03075079.2019.1619680

MARINO V., LO PRESTI L. (2018), "Approaches to university public engagement in the online environment: insights from Anglo-Saxon Higher education", *International Journal of Educational Management*, vol. 32, n. 5, pp. 734-748.

MARINO V., LO PRESTI L. (2017), "Towards an online approach to university public engagement: An exploratory analysis of website content", *Mercati e Competitività - The Journal of the Italian Marketing Association*, vol. 2, pp.73-96.

MILLER S., FAHY D., ESCONET TEAM (2009), "Can science communication workshops train scientists for reflexive public engagement? The ESConet experience", *Science Communication*, vol. 31, n. 1, pp.116-126.

MORCELLINI M., (2005), *Contro il declino dell'Università. Appunti e idee per una comunità che cambia, Il* Sole 24 Ore, Milano.

OSTRANDER S.A. (2004), "Democracy, civic participation, and the university: A comparative study of civic engagement on five campuses", *Nonprofit and voluntary sector quarterly*, vol. 33, n. 1, pp.74-93.

PERSELL C.H., WENGLINSKY H. (2004), "For-Profit Post-Secondary Education and Civic Engagement", *Higher Education*, vol. 47, n. 3, pp.337-359.

PICCALUGA A. (2000), *La valorizzazione della ricerca scientifica*, Franco Angeli, Milano.

POLIAKOFF E., WEBB T.L. (2007), "What factors predict scientists' intentions to participate in public engagement of science activities?", *Science communication*, vol 29, n. 2, pp. 242-263.

POLILLO R. (2013), "Il check up dei siti web delle organizzazioni non profit", I Quaderni di THINK!, n. 3.

POLILLO R. (2005), "Un modello di qualità per i siti web, Mondo Digitale", vol. Giugno, n. 2, pp. 32-44, Associazione Italiana per l'Informatica e il Calcolo Automatico (AICA).

RETZBACH A., MAIER M. (2015), "Communicating Scientific Uncertainty: Media Effects on Public Engagement With Science", *Communication Research*, vol. 42, n. 3, pp. 429-456.

SCHOERNING E. (2018), "A no-conflict approach to informal science education increases community science literacy and engagement", *Journal of science communication*, vol. 17, n. 3, pp.1-16.

SCHMIDT S., CANTALLOPS A.S., DOS SANTOS C.P. (2008), "The characteristics of hotel websites and their implications for website effectiveness", *International Journal of Hospitality Management*, vol. 27, n. 4, pp. 504-516.

STEPHENSON M. (2011), "Conceiving land grant university community engagement as adaptive leadership", *Higher Education*, vol. 61, n. 1, pp. 95-108.

TANG J.J., MAROOTHYNADEN J., BELLO B., KNEEBONE R. (2013), "Public Engagement Through Shared Immersion: Participating in the Processes of Research", *Science Communication*, vol. 35, n. 5, pp. 654-666.

TØSSE S.E. (2013), "Aiming for social or political robustness? Media strategies among climate scientists", *Science communication*, vol. 35, n.1, pp. 32-55.

VARGO S.L., LUSCH R.F. (2016), "Institutions and Axioms: An Extension and Update of Service-Dominant Logic", *Journal of the Academy of Marketing Science*, 44, pp. 5-23.

VARGO, S.L., LUSCH, R.F. (2008), "Service-dominant logic: continuing the evolution", *Journal of the Academy of Marketing Science*, vol. 36, pp. 1-10.

VARGO S.L., LUSCH R.F. (2004), "Evolving to a new Dominant Logic", *Journal of Marketing*, vol. 68 n. 1, pp. 1-17.

WAN C.S. (2002), "The web sites of international tourist hotels and tour wholesalers in Taiwan", *Tourism Management*, vol. 23, n. 2, pp. 155-160.

WARD V., HOWDLE P., HAMER S. (2008), "You and Your Body A Case Study of Bioscience Communication at the University of Leeds", *Science Communication*, vol. 30, n. 2, pp. 177-208.

WATERMEYER R., LEWIS J. (2018), "Institutionalizing public engagement through research in UK universities: perceptions, predictions and paradoxes concerning the state of the art", *Studies in Higher Education*, vol. 43, n. 9, pp. 1612-1624.

WATERMEYER R. (2012), "Measuring the impact values of public engagement in medical contexts", *Science Communication*, vol. 34, n. 6, pp. 752-775.

WILKINSON C., BULTITUDE K., DAWSON E. (2011), "Oh yes, robots! People like robots; the robot people should do something: perspectives and prospects in public engagement with robotics", *Science communication*, vol. 33 n. 3, pp. 367-397.

WILLIAMS R. (1958) Culture is ordinary, in: N. Mckenzie (Ed) Convictions (London, MacGibbon and Kee).

WINTER E. (2004), "Public Communication of Science and Technology German and European Perspectives", *Science Communication*, vol. 25 n. 3, pp. 288-293.

WOODSIDE A.G., VINCENTE R.M., DUNQUE M. (2011) "Tourisms destination dominance and marketing website usefulness", *International Journal Contemporary Hospitality Management*, vol. 23, n. 4, pp. 552-564.

Does country image impact retail brand equity? A multi-cue analysis

ELISA MARTINELLI* FRANCESCA DE CANIO♠

Abstract

Objectives. *This study investigates the factors affecting retail brand equity (RBE) when a multi-cue approach is applied, that is: considering traditional RBE antecedents (e.g. retail brand awareness, retail brand image, retail perceived value) together with country image (CI) cues - in their cognitive and affective dimensions.*

Methodology. *A survey was carried out administering a structured questionnaire to a sample of consumers. Structural equation modeling (SEM) was employed to test the proposed model.*

Findings. *All the postulated relationships were verified, apart from retail perceived value. Country image affects retail brand equity, but in unexpected ways. While the cognitive image of the country of origin of a retailer exerts a negative effect, affective country image impacts in a positive way.*

Research limits. *Despite the contribution to the retailing and international marketing literature, the research has some limitations. It is performed on a single retail brand and focused on Italian consumers only. Finally, this first study did not include any control or moderating variables.*

Practical implications. *International retailers, with particular attention to discounters, would understand the factors to leverage their consumer-based brand equity.*

Originality of the study. *So far, poor attention has been given to the effect of country image on retail brand equity. However, the image of a retailer develops not only in accordance with the service provided, but also in relation to the stereotypes connected with the retailer's country of origin. Moreover, the study employs a multi-cue perspective, using traditional RBE antecedents together with CI dimensions.*

Key words: *retail brand equity; country image; brand awareness; brand image; discounter; SEM*

* Associate Professor of Management - University of Modena and Reggio Emilia - Italy
e-mail: elisa.martinelli@unimore.it

♠ Research fellow of Management - University of Modena and Reggio Emilia - Italy
e-mail: francesca.decanio@unimore.itit

This contribution is the result of the joint research work of both authors. In writing the sections of the paper, Elisa Martinelli has paid particular attention to paragraph 1, 2, 3 and 6, while Francesca De Canio has contributed specifically to paragraph 4, 5 and 7.

ISBN 97888943937-3-6
DOI 10.7433/SRECP.FP.2020.01

1. Introduction

The spread in the international business activity has facilitated the availability of brands from one country to consumers in other countries. Today, many companies have a global and multinational approach to their development. However, convergence and divergence in consumer behaviour and cross-cultural issues continue to affect the tendency to grow internationally, in particular when retailing is concerned (De Mooij and Hofstede, 2002). Retailers going international need to transfer, negotiate and adapt their business model to the local context as they embed themselves in different institutional environments (Burt *et al.*, 2016). This acknowledgement is opening up new research avenues. To this concern, an area that require supplementary studies is related to consumer-based brand equity (CBBE) in an international marketing perspective. Specifically, since now, to the best of our knowledge, no study has investigated factors affecting retail brand equity (RBE) when the retail brand originates from a foreign country. To fill this gap, the current study focuses on the perception of origin at the brand level rather than on the actual origin at the product level as extant literature on the country-of-origin effect (COE) is mainly focused on (Roth and Diamantopoulos, 2009), contributing to the literature.

The importance of the brand is that it shapes consumers' beliefs and attitudes and enters consumers' conscience in a quick and strong way. Some authors have highlighted the brand importance in the context of COE, proposing that the "origin", in the country of origin research, should be conceptualised as perceived brand origin (Pharr, 2005; Thakor and Kholi, 1996). Actually, consumers appear to "place" products and services based on the perceived origin of the brand. Accordingly, the issue of how various facets of place influence brand equity (BE) is emerging as an interesting avenue for advancing the knowledge of origin effects.

In this study, we decided to use the origin with explicit reference to a brand in the retail sector. In fact, the sector in question has been little taken into consideration by the studies on the country-of-origin effect. However, the image of a retailer might develop not only in accordance with the retail service provided, but also in relation to the stereotypes concerned with the retailer's country of origin. Yet, companies like Wal-Mart and Carrefour recall their origins, respectively American and French, while some others use an opposite approach applying an adaptation strategy in the purpose of "think globally, act locally". But despite the strategic companies' aims, are consumers impacted by a retailer's country image when they value a retail brand? In synthesis, this is our main research question.

To this purpose, the current paper aims at exploring the effect of country image (CI) on the perceptions of consumers with respect to the equity of an international retail brand, as perceived by consumers. Specifically, this study is purposed at investigating the factors affecting RBE adopting a multi-cue approach where not only traditional RBE antecedents are concerned [e.g. retail brand awareness (RBA), retail brand image (RBI), retail perceived value (RPV)], but also country image (CI) cues are included, intended in a cognitive (CCI) as well as affective (ACI) dimensions. This is fulfilled through a survey, administering a structured questionnaire to a sample of consumers and then employing structural equation modeling (SEM) to test the proposed model.

This paper intends to provide the following contributions. First of all, to extend the academic knowledge on the role of country image in the retail context. Generally speaking, the literature specifically aimed at exploring the COE in service settings reveals a shortage of studies (Ahmed *et al.*, 2002; Berentzen *et al.*, 2008; Martinelli and De Canio, 2019; Javalgi *et al.*, 2001). As the way in which consumers are affected by the COE depends on the product category (Ahmed and d'Astous, 1996) and this has been found enhanced when services are involved (Pecotich *et al.*, 1996), empirical woks aimed at exploring the COE role when a service offer is involved, especially in the grocery retailing context (Kan *et al.*, 2015) are required (Martinelli and De Canio, 2019). Second, even if a number of studies show that COE directly affects products brand equity (Buil *et al.*, 2008; Pappu *et al.*, 2006, 2007; Shocker *et al.*, 1994; Thakor and Katsanis, 1997; Yasin *et al.*, 2007) - even if recent studies found that BE dimensions could not be always clearly discriminated in all national contexts (Christodoulides *et al.*, 2015) - to our knowledge no studies were addressed to the

retail setting. Hence, the present research is one of the first studies examining the relationship between two sets of constructs: country image and retail brand equity. Third, this work aims at developing the scientific knowledge on RBE at the retail company level rather than at the store or private label level, as the literature on the subject has mainly done so far. As a matter of fact, "conceptualisation of retail equity is still in want of consensus" (Rashmi and Dangi, 2016, p. 67) and further studies are required. This is even more important today, as the spread of multichannelty makes quite limited the exclusive focus on equity at the point-of-sale level. Into this perspective, the retail branding policies should be reviewed, extending to the retail corporate brand upper level. In this spirit, due to the difficulties associated with the measurement of the BE, scholars argued that the assessment of brand equity at the corporate level in the retail setting can pose further challenges compared to operating the same measurement with products instead of services (Ailawadi and Keller, 2004). From this point of view, the few studies in line with this perspective offer non-univocal measures and models often contradictory compared to the findings of the mainstream literature and do not include the COE as RBE determinant. Last but not least, whilst previous research (e.g. Buil *et al.*, 2008; Yoo and Donthu, 2001) applied the Aaker's (1991) scale of consumer-based brand equity using cross-national data, the samples used were usually composed by students rather than real consumers, limiting the managerial return of findings. In this study we collected data from real shoppers, so as to overcome this possible limitation.

For the remainder of the paper, we first review the relevant country image and retail brand equity literature, outlining then the conceptual model and the theoretical hypotheses postulated. A description of the methodology applied to collect and measure data, the sample features and the empirical model and measure validity follow. We then outline and discuss the findings, highlighting the main theoretical and managerial implications of our work. We conclude by presenting some study limitations and future avenues for further research.

2. Country image and retail brand equity: a literature review

The country-of-origin effect is considered as one of the most widely researched topics in international marketing (Magnusson *et al.*, 2011; Pharr, 2005; Usunier, 2006).

The COO has been found to operate as an extrinsic cue able to influence the consumer decision-making process likewise price and/or product guarantee. Consumers infer beliefs about product attributes because of the stereotypes that individuals possess about a certain country and the products originated from there (Han, 1989; Johansson, 1989; Knight and Calantone, 2000).

This body of research brought to the acknowledgement that a product's COO affects product evaluations and purchasing behavior (Roth and Diamantopoulos, 2009; Verlegh and Steenkamp, 1999), in dependence of the level of consumer knowledge (Han, 1989). Indeed, this impressive consideration has developed also a fair amount of criticism that has drawn attention to a number of issues, such as: the lack of theoretical development in the field (Bloemer *et al.*, 2009), the presence of methodological bias (Bilkey and Nes, 1982; Samiee, 2010) and the usefulness of the effect in the real-world (Usunier, 2006, 2011).

The research focus has gradually evolved over time. Initially, the scholar attention was addressed to the evaluation of the global quality of the products with distinct origins (Bilkey and Nes, 1982; Han, 1989; Nagashima, 1970, 1977; Roth and Romeo, 1992), while then the focus passed on the multiple origin of products, so-called hybrid products (Chao, 1993), and was later centered on the country image conceptualization and measurement (Martin and Eroglu, 1993; Nebenzahl *et al.*, 2003; Parameswaran and Yaprak, 1987). More recently, country equity (Pappu and Quester, 2010) and country branding (Marino and Mainolfi, 2010, 2013; Papadopoulos and Heslop, 2002) emerged as developing topics.

Country image is a construct defined at the macro and micro level (Heslop and Papadopoulos, 1993; Balboni *et al.*, 2011). The macro country image summarizes the beliefs of individuals on the political, economic and socio-cultural characteristics associated with the overall image of a country

(Country Image) (Heslop and Papadopoulos, 1993). Conversely, the micro country image refers to the perceptions and beliefs related to a specific product category produced in a certain country (Country related product image) (Johansson *et al.*, 1985; Roth and Romeo, 1992). Most COE research measured "country" image through product rather than country measures (Han, 1989). Moreover, a line of research on the country image investigated its multi-dimensionality (Papadopoulos *et al.*, 1990, 1993), identifying three components: a cognitive component, including consumers' beliefs about the country's industrial and technological advancement; an affective component, defining consumers' affective response to the country's people; and a conative component, consisting of consumers' desired level of interaction with the sourcing country. However, most empirical studies on country image have not considered its multi-dimensionality when operationalizing the construct (Johansson *et al.*, 1985; Han, 1989; Knight and Calantone, 2000).

More recently, some scholars started to suggest that the focus of origin effect research should shift away from products and focus on brands (Thakor and Lavack, 2003; Pharr, 2005; Josiassen and Harzing, 2008; Usunier, 2011). Actually, if we go back to the definition of country image given by Nagashima (1970), it is possible to find a similarity with the way in which Keller (1993) defined customer-based brand equity: "*What the two definitions share is the emphasis upon the perceptual nature of these images, which can lead to a great variation in what consumers actually associate with a given image.*" (Andéhn *et al.*, 2016, p. 227). As a cue- based cognitive short- cut, brand origin information is a place association reflecting the personal meaning about a brand stored in consumers' memory (Samiee *et al.*, 2005).

In the last decade, retailers toughly increased the awareness and value of their brands. This has led scholars to pose more attention to retail brand equity: a number of studies started to focus on this matter (Swoboda *et al.*, 2009; Jara and Cliquet, 2012; Swoboda *et al.*, 2013; Swoboda *et al.*, 2016; Londoño *et al.*, 2016, 2017), providing preliminary support to the RBE construct and its antecedents. Although these contributions highlighted the growing interest in the topic of BE conceptualization within the application area of retailing, extant literature on RBE is mainly aimed at conceptualizing it at the store (Pappu and Quester, 2006; Gil-Saura *et al.*, 2013) or the private label levels (Das *et al.*, 2012), ignoring that it is the retail corporate brand that should become the key study reference (Burt and Davies, 2010; Anselmsson *et al.*, 2017). In fact, retail brand equity should be considered under three conceptual perspectives: (1) the equity associated with the retailer's brand (e.g., Coop, Conad), (2) the equity associated with a specific retailer's store; 3) the equity associated with the retailer's store brand (e.g. Conad's Sapori & Dintorni, ViviNatura, etc.). The young and not well-established literature on RBE is mainly focused on the second perspective, that is: measuring store equity, ending in neglecting an important level on which studies on RBE should be articulated. This is the study of the RBE at the retail corporate brand level, in the perspective of the "retailer as a brand" (Ailawadi and Keller, 2004; Burt, 2000; Burt and Davies, 2010; Martinelli and De Canio, 2018). However, the few studies in line with this perspective report contradictory results. For example, Anselmsson *et al.* (2017) consider a conceptualization of RBE in terms of retail brand image measured in a multi-dimensional perspective, differently from the product branding literature in which the brand image is traditionally considered antecedent of its value (Keller, 1993) and from other retail literature (Gil-Saura *et al.*, 2013). More recently, studying the equity concept in a retailing channel, Londoño *et al.* (2016) identified awareness, quality and loyalty as formative indicators of equity, while Martinelli and De Canio (2018) proved that RBE acts a mediator of BA and retail perceived value in developing customer loyalty to the retail corporate brand. Yoo *et al.* (2000) examine the influence of marketing mix elements on CBBE, founding that store image, advertising and price level increase consumers' perceptions of brand equity whereas frequent sales promotions destroy brand equity. However, empirical research on brand equity has focused largely on single country's data, resulting from neglecting international marketing issues and focusing on evaluations of brands almost only in goods domain (Christodoulides *et al.*, 2015).

To clarify the role of country image in the consumer-based retail brand equity formation, a structural model is proposed in the following paragraph.

3. Conceptual model and hypotheses

This paper explores consumer-based retail brand equity in an international marketing perspective. Specifically, our study is aimed at investigating the factors affecting RBE, adopting a multi-cue approach where not only traditional RBE antecedents are concerned (e.g. RBA, RBI, RPV), but also country image cues (i.e. cognitive and affective) are included.

In our work RBE refers to the retail brand at the corporate level (Burt and Davies, 2010), while country image is defined as "the sum of beliefs and impressions people hold about places" (Kotler and Gertner, 2002, p. 251) and the local population (Laroche *et al.*, 2005).

Brand awareness (BA) is fundamental to influence consumer behavior and boost sales. Keller (1993, p. 3) defined brand awareness as "related to the likelihood that a brand name will come to mind and the ease with which it does so". This author stated that without being conscious and mindful of a brand, it is difficult to rend it strong and favorable. BA has been found to positively stimulate BE (Keller, 1993) and store equity (Yoo *et al.*, 2000; Hartman and Spiro, 2005; Pappu and Quester, 2006; Jinfeng and Zhilong, 2009; Anselmsson *et al.*, 2017), as it reflects the level of recognition or recall from a set of alternatives by the consumer. This effect emerged also when the retail corporate brand equity is studied (Martinelli and De Canio, 2018).

H1: Retail brand awareness (RBA) has a significant and positive effect on Retail Brand Equity (RBE)

According to Aaker (1991, p. 109), brand image is defined as "anything linked in memory to a brand, usually in some meaningful way". In the retailing literature, consumers' perception of a retailer's image has been traditionally conceptualized and investigated in terms of store image (Morschett *et al.*, 2005). Hartman and Spiro (2005) and Gil-Saura *et al.* (2013) found that a positive store image has a similar effect on store equity. The same relationship would be expected when the retail company brand is concerned. The following hypothesis is postulated:

H2: Retail brand Image (RBI) has a significant and positive effect on RBE.

Aaker (1991) proposes that brand equity creates value not only for the company but also for its customers. Perceived value was conceptualized as consumers' assessment of the utility and expectations offered by retail stores (Zeithaml, 1988). Studies on consumer behavior have investigated the effects of perceived value, "but they have seldom analyzed the relationship between perceived value and retail brand equity" (Weindel, 2016, p. 288). Previous research investigated the impact of perceived value on BE (Lassar *et al.*, 1995), and verified this relationship when store equity is studied too (e.g., Jinfeng and Zhilong 2009; Yoo *et al.* 2000; Gil-Saura *et al.*, 2013), but also when the retail corporate brand equity is considered (Martinelli and De Canio, 2018). Consequently, we postulate to assess this link when retail brand equity is considered. The third hypothesis underpinning our conceptual model is as follows:

H3: Retail Perceived Value (RPV) has a significant and positive effect on RBE.

In the present study, the country image cue is considered as composed by two dimensions: the cognitive country image (CCI) and the affective country image (ACI) (Laroche *et al.*, 2005; Roth and Diamantopoulos, 2009).

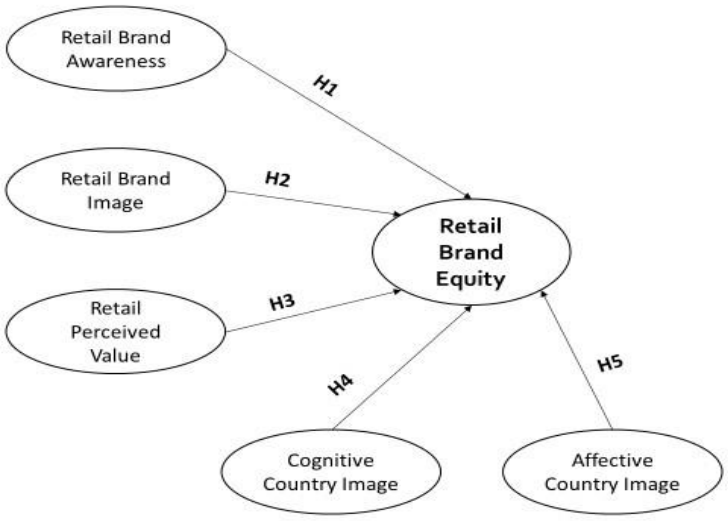
Cognitive country image is considered in broad terms, as the stereotypes and beliefs that individuals hold on the political, economic and socio-cultural characteristics associated with respect to a given country (Martin and Eroglu, 1993; Roth and Diamantopoulos, 2009). Traditionally, in fact, scholars investigate the origin effect on consumer evaluations as depending upon the perceived level of general development of the country from which a product, service, or brand originates (Martin and Eroglu, 1993; Verlegh and Steenkamp, 1999; Roth and Diamantopoulos, 2009). This effect is sharable, as consumers might expect higher quality products and services as coming from a country they perceive to be more economically, socially and technologically evolved. Magnusson *et*

al. (2011) explored the perceived country image of a product in relation to brand attitude and demonstrated a significant relationship regardless of brand origin perceptions' objective accuracy. As CCI has been proved to constitute a relevant factor in consumers' evaluation and attitude formation toward brands in the manufacturing sector (Andéhn *et al.*, 2016), we would like to test the same when a service offer is concerned.

Affective country image is defined as "consumers' affective responses (e.g. liking) to the country's people" (Laroche *et al.*, 2005, p. 99). In fact, the country of origin of a product, service, brand may evoke positive or negative feelings. Whether the consumer likes the product will then depend, at least in part, on his/her sentiments toward the associated national origin (Johansson, 1989; Knight and Calantone, 2000) The direct impact of the affective side of country image on behavioural intentions was detected by Klein *et al.* (1998) and Villanueva and Papadopoulos (2003). However, to our knowledge, no studies investigated the impact of ACI on brand equity, as our fifth hypothesis posit, instead.

H4: Cognitive Country Image (CCI) has a significant and positive effect on RBE.
H5: Affective Country Image (ACI) has a significant and positive effect on RBE.

Fig. 1: The theoretical model



Source: our elaboration

4. Methodology

4.1 Data collection

A survey was conducted among Italian consumers intercepted in the city centre of three different towns located in North Italy. Interviewees were approached by three trained interviewers. The survey last two weeks and was accomplished during Spring 2019.

The first question posed by the interviewers was aimed at selecting the household responsible for grocery shopping. In case the approached individual neglected this role, the interviewer was instructed to thank him/her and pass to another potential interviewer.

The rest of the questionnaire was devoted to explore country image perceptions and consumer-based brand equity in relation to the main discounter operating in Italy. This is a German discounter present since a long time in the country, selected also as it is a top retail-spender in advertising. Socio-demographics information on the respondents were collected too.

All the people in line with the first research design requirement were then asked with an open-ended question aimed at checking the perceived country of origin of the discounter observed, intended as the country in which the interviewee believes that the discounter's headquarters are

located, giving as sole information some of the almost thirty countries in which the discounter operates. This in order to collect a knowledgeable sample and in line with the requirements suggested by Thakor and Kholi (1996). 85.8% of the respondents indicated Germany as the country of origin of the retail brand investigated, while only 1.5% indicated Italy; 5% indicated Norway, while 3% of the respondents believe on a French origin of the discounter. Other countries (Great Britain, Spain, Austria, Holland and the United States) were marginally cited. Therefore, an accuracy rate of country of origin detection is evident in our sample (Magnusson *et al.*, 2011; Samiee *et al.*, 2005).

4.2 Sample characteristics

400 completed and valid questionnaires were collected, but only 343 of them were processed, in order to focus only on the 85.8% respondents who recognised the correct country of origin of the discounter investigated.

The sample is mainly composed by women (64%). Younger shoppers (18-24 years old) represent 14.3% of the sample, while 24.5% of respondents are included in the cluster 25-35 years old, and 28.3% the cluster of 36-50 years old. Adults (over 51-65 years) compose 23.3% of the sample and 9.6% of the sample are older than 65 years.

In terms of educational level, respondents are distributed as follows: 46.1% of the sample has a high school diploma while 13.7% a Bachelor's Degree and 12.8% a Master Degree. Moreover, 3.2% of respondents got a Ph.D. or others post-degrees while 21.3% of them possess a Middle School Diploma and 2.9% a Primary School Diploma.

4.3 Measurements

The measures used to fulfil the survey were derived from the extant international marketing literature on country of origin and from the retailing literature on RBE (Tab. 1).

Following the recommended translation procedure, a double translation English-Italian and Italian-English was used to reduce translations errors. Interviewees were asked to evaluate construct measures on a 7 points Likert-scale (1= Strongly disagree; 7= Strongly agree).

Tab. 1: Constructs, items and original scales

Constructs	*Code*	*Item*	*Original Scale*
Retail Brand Equity (RBE)	RBE1	If another retailer is not different from X in any way, it seems smarter to purchase in X's stores.	Yoo *et al.* (2000)
	RBE2	If there is another retailer as good as X, I prefer to buy in X	
	RBE3	Even if another retailer has same features as X, I would prefer to buy in X.	
	RBE4	It makes sense to buy in X's stores instead of any other retailers' stores, even if they are the same	
Retail Brand Awareness (RBA)	RBA1	I know what X looks like	Yoo *et al.* (2000)
	RBA2	I can quickly recall the symbol or logo of X	
	RBA3	I am aware of X's brand	
	RBA4	I can recognize X among other competing brands	
Retail Brand Image (RBI)	RBI1	X is committed to sustainable development	Adapted by Kremer and Viot (2012)
	RBI2	X is concerned with the environment	
	RBI3	X fights for the customers' interests	
	RBI4	X is close to customers	
Retail Perceived Value (RPV)	RPV1	X's employees are willing to help	Adapted by Sweeney *et al.* (1997)
	RPV2	X is good value for money	
	RPV3	X has a quick customer service to deal with returns and complaints	
Cognitive Country Image (CCI)	CCI1	Germany has high labour costs	Adapted by Martin and Eroglu (1993); Laroche *et al.*, 2005
	CCI2	Germany has a high level of industrialisation	
	CCI3	Germany is a highly developed economy	
	CCI4	Germany has an excellent level of education	
Affective Country Image (ACI)	ACI1	German people are likeable	Laroche *et al.*, 2005
	ACI2	German people are trustworthy	
	ACI3	German people are hard working	

Source: our elaboration

4.4 Empirical model and measure validity

Following the recommendations of Anderson and Gerbing (1988) a two-step approach is used to analyse the data: the measurement model is estimated to verify the relationship between dependent latent variables and their indicators (items); the structural model is subsequently estimated to measure paths between constructs (latent variables).

The convergence validity of the scales is assessed. In fact, all factors loading are closer to the cut-off of 0.7 and significant (t-statistics > 9) (Hu and Bentler, 1999). Further, all the items reveal a high item-total correlation, indicating their capability to measure the investigated construct. Cronbach's alphas (Table 2) are greater than .70 (de Vaus, 2002), confirming the good reliability of the measures. The Average Variance Extracted (AVE) and the Composite Reliability (CR) values assess the convergent validity of constructs. In fact, both indicators are greater than the thresholds cited in the relevant literature for all the constructs (AVE > 0.5 and CR>0.7; Fornell and Larcker, 1981) (Table 2).

Tab. 2: Statistic Descriptive of Items and Discriminant validity

Constructs	*Code*	*Factor Loadings*	*T-statistics*	*Cronbach's α*	*AVE*	*CR*
Retail Brand Equity (RBE)	RBE1	0.844	n.a.	0.956	0.802	0.957
	RBE2	0.932	29.410			
	RBE3	0.958	31.124			
	RBE4	0.944	28.368			
Retail Brand Awareness (RBA)	RBA1	0.771	n.a.	0.861	0.521	0.866
	RBA2	0.769	12.053			
	RBA3	0.913	19.000			
	RBA4	0.682	9.952			
Retail Brand Image (RBI)	RBI1	0.758	n.a.	0.898	0.687	0.897
	RBI2	0.783	21.316			
	RBI3	0.904	17.343			
	RBI4	0.862	15.021			
Retail Perceived Value (RPV)	RPV1	0.971	n.a.	0.951	0.870	0.953
	RPV2	0.970	53.066			
	RPV3	0.852	29.264			
Affective Country Image (ACI)	ACI1	0.873	n.a.	0.866	0.708	0.877
	ACI2	0.952	24.124			
	ACI3	0.675	12.436			
Cognitive Country Image (CCI)	CCI1	0.698	n.a.	0.828	0.557	0.834
	CCI2	0.719	11.616			
	CCI3	0.819	10.319			
	CCI4	0.745	11.439			

Source: our elaboration

Applying the Fornell and Larcker criterion (1981) the discriminant validity of the measurement model is assessed. The square root of the average variance extracted for each construct is higher than the correlation between the construct and the others (Fornell and Larcker, 1981) (Table 3).

Tab. 3: Fornell-Larcker Criterion and Correlation Matrix

	RBE	***RBA***	***RBI***	***RPV***	***CCI***	***ACI***
Retail Brand Equity	**0.895**					
Retail Brand Awareness	0.524	**0.722**				
Retail Brand Image	0.595	0.534	**0.829**			
Retail Perceived Value	0.402	0.443	0.607	**0.933**		
Cognitive Country Image	0.070	0.257	0.264	0.170	**0.747**	
Affective Country Image	0.220	0.048	0.282	0.204	0.267	**0.841**

Note: Diagonal elements in bold are the square root of Average Variance Extracted (AVE).

Source: our elaboration

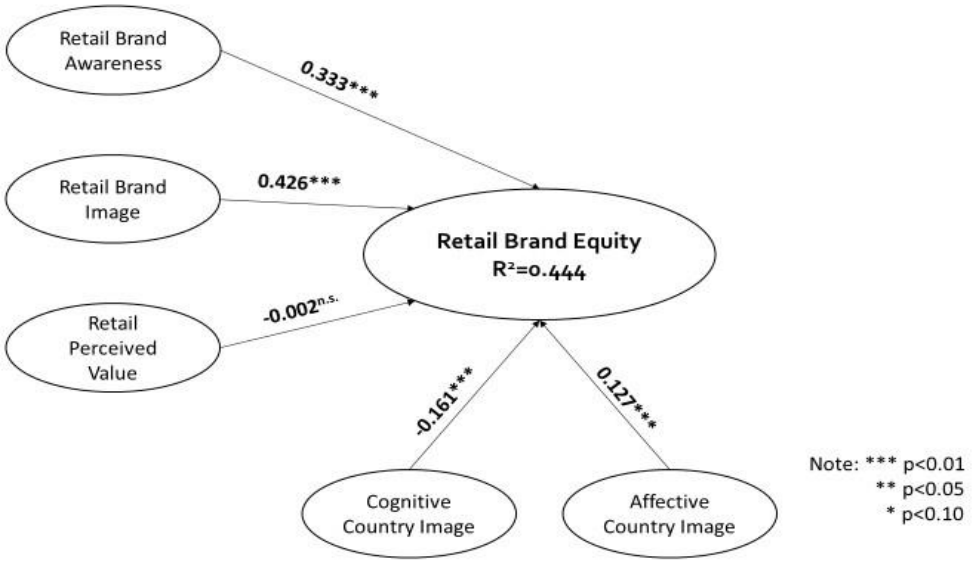
The structural model presents a good overall fit. The significant Satorra and Bentler chi-square $\chi^2_{(SB)(194)}$= 490.796, p < 0.00, and the significant Close-Fit RMSEA (RMSEA=0.0669, p-value= 0.0001) showing the possibility that the model does not mirror the pattern of covariance contained within the raw data, are compensating by a good value for the chi-square ratio $\chi^2_{(SB)}$/df (2.530). Two other indicators are used to assess the goodness of the model fit. The Bentler and Bonnet index (Normed Fit Index, NFI = 0.955) is considered acceptable as it is closer to the 0.90 value suggested by Byrne (2013). Moreover, the standardised root mean square residual (SRMR= 0.0496) lower than the cut-off of 0.05 posed by Byrne (2013) confirms the acceptable model fit, indicating a low value for the root mean square discrepancy between the observed correlations and the model-implied correlations.

5. Findings

The structural model shows an interesting predictive power in explaining retail brand equity ($R^2_{(RBE)}$=0.444).

Results of the paths between constructs, presented in Figure 2, show that retail brand awareness and retail brand image positively influence retail brand equity confirming the first two hypotheses (RBA→RBE: β=0.333, t-value=5.976; RBI→RBE: β=0.426, t-value=5.236). In particular, retail brand image shows the strongest effect. The country image dimensions (i.e. cognitive and affective) show both a significant effect on retail brand equity. Nevertheless, while affective country image positively influences retail brand equity - in line with our fifth hypothesis (ACI→RBE: β=0.127, t-value=2.515), that it is consequently verified - the cognitive dimension of country image reports an opposite effect, negatively influencing retail brand equity, partially disconfirming our fourth hypothesis (CCI→RBE: β=-0.161, t-value=3.045). Finally, no significant effect is found between retail perceived value and retail brand equity; accordingly, the third hypothesis is rejected.

Fig. 2: The measurement model



Source: our elaboration

6. Discussion

Findings evidenced that all the postulated relationships underpinning our structural model were verified, apart from the effect of retail perceived value that did not result as significant, differently from previous studies (Martinelli and De Canio, 2018). Retail brand image and retail brand awareness emerged as exerting the strongest effects in generating value to the retail brand,

confirming the solid role of these factors in driving RBE, even when the retail corporate brand - and not the store one - is involved. In this way, our study extends the main RBE results (Hartman and Spiro, 2005; Gil-Saura *et al.*, 2013; Yoo *et al.*, 2000) to an upper level, enlarging the scientific knowledge on the subject, in accordance with the most recent ongoing debate in this area (Swoboda *et al.*, 2016). In addition, this work is the first to assess the role of country image in impacting RBE, opening up to new opportunities in extending the international marketing knowledge on the role of country image in a consumer-based perspective when services are involved. From this viewpoint, our findings focused on retailing, extending our empirical understanding till now mainly confined to other service sectors such as banking, airlines, insurance (Pecotich *et al.*, 1996; Berentzen *et al.*, 2008) and restaurants (Martinelli and De Canio, 2019). Moreover, as expected, country image directly affects products brand equity confirming extant literature results (Buil *et al.*, 2008; Pappu *et al.*, 2006, 2007; Shocker *et al.*, 1994; Thakor and Katsanis, 1997; Yasin *et al.*, 2007). The country image dimensions (i.e. cognitive and affective) show a significant effect on retail brand equity both, but in unexpected ways. While the cognitive image of the country of origin of a retailer exerts a negative effect, affective country image impacts in a positive way. The former result has the effect of reducing the value that the consumer associates with the retail brand. Into this perspective, our findings are in line with some studies proving that origin effect can also negatively influence an individual's attitude toward products or brands (Chu *et al.*, 2010; Dakin and Carter, 2010). On the contrary, the affective side of a brand's origin positively impacts RBE. To this concern, we have in any case to remember that Laroche *et al.* (2005) evidenced that when the country image is mainly based on affect, its influence on product evaluation will be greater than its influence on product beliefs (attitude). This could be an explanation of the smaller effect exerted by ACI compared to the traditional RBE antecedents.

The results emerged in this study are also useful from a managerial viewpoint. Managers of grocery retailing brands and professionals who deal with the sector must understand that RBE is clearly perceived by consumers and is a construct associated with the retail corporate level, which serves as an important intangible asset (Jinfeng and Zhilong, 2009). In fact, RBE is a key factor able to develop customer loyalty to the retailer (Martinelli and De Canio, 2018) and to enhance market share, financial performance and shareholder value (Keller, 1993; Londoño *et al.*, 2017; Swoboda *et al.*, 2013, 2016). However, a few are the retailers who have developed specific retail brand management departments in their head-quarters, supported by adequate resources and competences. The attention at the branding level is strongly placed on private labels, when instead our results suggest that this logic should be integrated into wider branding policies articulated on several levels, where the attention should be placed, above all, at the corporate level. Apart from this general requirement, the investigated German discounter is pursuing a positioning strategy aimed at supporting as much as possible its association with Italy; this is demonstrated by the creation of dedicated private labels, whose naming immediately leads to Italy; from the creation of a dedicated logo reporting Italian signs (e.g. the colors of the Italian flag; the football passion of Italians, etc.); by the commitment to have most of its products sourced from Italian suppliers. Despite this strategy, only 1.5% of respondents associated the discounter brand with Italy, and the results emerged from the structural model show that the association with Germany in a cognitive way tends to reduce the value of the brand for Italian people. As this strategy is used in many other countries in which the discounter operates, maybe a rethinking would be worthwhile as it looks like not advantageous for the brand to disguise its country of origin, as local people are aware of it. The company's management should instead invest in boosting its brand image and persist in increasing its brand awareness. From this point of view, the discounter should continue to investing in TV advertising but also on social media in order to increase consumer confidence and its overall image. Stressing the trustworthy and hard-working side of German people in the communication messages rather than the country functional features would help in boosting retail brand equity.

To conclude, the results emerged from our study might be useful to international retailers in general and to discounters in particular: they would better understand the factors to manage to leverage their brand equity between consumers.

7. Conclusions

This study contributes to the international marketing and retailing literature giving evidence that country of origin influences brand equity not only when a manufacturing brand is concerned, but also whenever a retail brand is investigated. Moreover, our findings are particularly interesting for two main reasons: first, the dimensions of country image - affective and cognitive - do not exert the same effect on retail brand equity; second, the multi-cue approach here adopted is able to further our understanding on the antecedents of RBE when retailers are fulfilling an international development. The latter is a unique perspective in current literature.

Despite the contributions made by this work, a number of limitations are present, opening up for further studies on the topic.

First of all, the research focused on a single retail brand operating in the discount segment. A replication of the empirical analysis on grocery retail multiples (i.e. Carrefour) could improve our understanding and reinforce or differentiate our findings.

Second, the study was performed on Italian customers. As the role of national culture was found to influence retail patronage and image (Kan *et al.*, 2015), conducting a comparative work in other national contexts can lead scholars to catch cross-country cultural differences, helping international retailers to better deal with them.

Finally, the study did not include any control or moderating variables, even if we consider the shopping responsibility and the level of brand knowledge in selecting the sample investigated. In next studies it might be useful to control for the socio-demographics data regarding the respondents and consider factors such as the level of ethnocentrism and/or fit as moderators in order to get a more comprehensive understanding of consumer-based brand equity when international retailing takes place.

References

AAKER, D. A. (1991), "Managing Brand Equity". The Free Press, New York.

AHMED S.A., ASTOUS A.D. (1996), "Country-of-origin and brand effects: a multidimensional and multi-attribute study" *Journal of International Consumer Marketing*, vol. 9, n. 2, pp. 93-115.

AHMED Z.U., JOHNSON J.P., LING C.P., FANG T.W., HUI A.K. (2002). Country-of-origin and brand effects on consumers' evaluations of cruise lines", *International Marketing Review*, vol. 19, n. 3, pp. 279-302.

AILAWADI K., KELLER K.L. (2004), "Understanding retail branding: conceptual insights and research priorities", *Journal of Retailing*, vol. 80, n. 4, pp. 331-342.

ANDÉHN M., NORDIN F., NILSSON M. E. (2016), "Facets of country image and brand equity: Revisiting the role of product categories in country of origin effect research", *Journal of Consumer Behaviour*, vol. 15, n. 3, pp. 225-38.

ANDERSON JC., GERBING DW. (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach", *Psychological Bulletin*, vol. 103, n. 3, pp. 411-23.

ANSELMSSON J., BURT S., TUNCA B. (2017), "An integrated retailer image and brand equity framework: Re-examining, extending, and restructuring retailer brand equity", *Journal of Retailing and Consumer Services*, vol. 38, pp. 194-203.

BALBONI B., GRAPPI S., MARTINELLI E., VIGNOLA M. (2011), "L'impatto del Made in Italy sul comportamento d'acquisto dei consumatori cinesi", *Micro & Macro Marketing*, n. 3, pp. 445-62.

BERENTZEN J.B., BACKHAUS C., MICHAELIS M., BLUT M., AHLERT D. (2008), "Does "made in…" also apply to services? An empirical assessment of the country-of-origin effect in service settings", *Journal of Relationship Marketing*, vol., 7, n. 4, pp. 391-405.

BILKEY W.J., NES E. (1982), "Country-of-origin effects on product evaluations", *Journal of International Business Studies*, vol. 13, n. 1, pp. 89-99.

BLOEMER J., BRIJS K., KASPER H. (2009), "The CoO-ELM model-a theoretical framework for the cognitive processes underlying country of origin-effects", *European Journal of Marketing*, vol. 43, n. 1/2, pp. 62-89.

BUIL I., DE CHERNATONY L., MARTINEZ E. (2008), "A cross-national validation of the consumer-based brand equity scale", *Journal of Product and Brand Management*, vol. 17, n. 6, pp. 384-392.

BUIL I., MARTÍNEZ E., DE CHERNATONY L. (2013), "The influence of brand equity on consumer responses", *Journal of Consumer Marketing*, vol. 30, n. 1, pp. 62-74.

BURT S., DAVIES K. (2010), "From the retail brand to the retail-er as a brand: themes and issues in retail branding research", *International Journal of Retail & Distribution Management*, vol. 38, n. 11/12, pp. 865-78.

BURT S., JOHANSSON U., DAWSON J. (2016), "International retailing as embedded business models", *Journal of Economic Geography*, vol. 16, n. 3, pp. 715-47.

BYRNE B.M. (2013), *Structural equation modeling with EQS: Basic concepts, applications, and programming*. Routledge, London.

CHAO P. (1993, "Partitioning country of origin effects: consumer evaluations of a hybrid product", *Journal of International Business Studies*, vol. 24, n. 2, pp. 291-306.

CHU P.Y., CHANG C.C., CHEN C.Y., WANG T.Y. (2010), "Countering negative country-of-origin effects: the role of evaluation mode", *European Journal of Marketing*, vol. 44, n. 7/8, pp. 1055-76.

CHRISTODOULIDES G., CADOGAN J.W., VELOUTSOU C. (2015), "Consumer-based brand equity measurement: lessons learned from an international study", *International Marketing Review*, vol. 32, n. 3/4, pp. 307-328.

KAN G., CLIQUET G., PUELLES GALLO M. (2014), "The effect of country image on hypermarket patronage intention: A cross-cultural study in China and Spain", *International Journal of Retail & Distribution Management*, vol. 42, n. 2, pp. 106-130.

DAKIN J.A., CARTER S. (2010). "Negative image: developing countries and country of origin—an example from Zimbabwe", *International Journal of Economics and Business Research*, vol. 2, n. 3, pp. 166-86.

DAS G., DATTA B., GUIN K.K. (2012), "Impact of retailer personality on consumer-based retailer equity: An empirical study of retail brands2, *Asia Pacific Journal of Marketing and Logistics*, vol. 24, n. 4, pp. 619-39.

DE MOOIJ M., HOFSTEDE G. (2002), "Convergence and divergence in consumer behavior: implications for international retailing", *Journal of Retailing*, vol. 78, n. 1, pp. 61-9.

DE VAUS D.A. (2002), *Analyzing Social Science Data: 50 Key Problems in Data Analysis*, Sage Publications, London.

FORNELL C., LARCKER D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, vol. 18, n. 1, pp. 39-50.

GIL-SAURA I., RUIZ-MOLINA M.E., MICHEL G., CORRALIZA-ZAPATA A. (2013), "Retail brand equity: a model based on its dimensions and effects", *The International Review of Retail, Distribution and Consumer Research*, vol. 23, n. 2, pp. 111-36.

HAN C.M. (1989), "Country image: halo or summary construct?", *Journal of Marketing Research*, vol. 26, pp. 222-9.

HARTMAN K.B., SPIRO R.L. (2005), "Recapturing store image in customer-based store equity: a construct conceptualization", *Journal of Business Research*, vol. 58, n. 8, pp. 1112-20.

HESLOP L.A., PAPADOPOULOS N. (1993), "But Who Knows Where or When? reflections on the images of countries and their products". In Papadopoulos N., Heslop L.A. (Eds.), *Product-country images: impact and role in international marketing.* International Business Press, New York, pp. 39-75.

HSIEH M.H., PAN S.L., SETIONO R. (2004), "Product-, corporate-, and country-image dimensions and purchase behavior: a multicountry analysis", *Journal of the Academy of Marketing Science*, vol. 32, n. 3, pp.251-70.

HU L.T., BENTLER P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", Structural Equation Modeling: A Multidisciplinary Journal, vol. 6, n. 1, pp. 1-55.

JARA M., CLIQUET G. (2012), "Retail brand equity: Conceptualization and measurement", *Journal of Retailing and Consumer Services*, vol. 19, n. 1, pp. 140-9.

JAVALGI R.G., CUTLER B.D., WINANS W.A. (2001), "At your service! Does country of origin research apply to services?", *Journal of Services Marketing*, vol. 15, n. 7, pp. 565-582.

JINFENG W., ZHILONG T. (2009), "The impact of selected store image dimensions on retailer equity: evidence from 10 Chinese hypermarkets", *Journal of Retailing and Consumer Services*, vol. 16, n. 6, pp. 486-94.

JOHANSSON J.K. (1989), "Determinants and effects of the use of 'made in' labels", *International Marketing Review*, vol. 6, n. 1, pp. 47-58.

JOHANSSON J.K., DOUGLAS S.P., NONAKA, I. (1985), "Assessing the impact of country-of-origin on product evaluations: a new methodological perspective", *Journal of Marketing Research*, vol. 22, pp. 388-96.

JOSIASSEN A., HARZING A.W. (2008), "Comment: descending from the ivory tower: reflections on the relevance and future of country-of- origin research", *European Management Review*, vol. 5, n. 4, pp. 264-70.

KAN G., CLIQUET G., PUELLES GALLO M. (2014), "The effect of country image on hypermarket patronage intention: A cross-cultural study in China and Spain", *International Journal of Retail & Distribution Management*, vol. 42, n. 2, pp. 106-130.

KELLER, K. L. (1993), "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity", *Journal of Marketing*, vol. 57, n. 1, pp. 1-22.

KLEIN J.G., ETTENSON R., MORRIS M.D. (1998), "The animosity model of foreign product purchase: an empirical test in the People's Republic of China", *Journal of Marketing*, vol. 62, n. 1, pp. 89-101.

KNIGHT G.A., CALANTONE R.J. (2000), "A flexible model of consumer country-of-origin perceptions: a cross-cultural investigation", *International Marketing Review*, vol. 17, n. 2, pp. 127-45.

KOTLER P., GERTNER D. (2002), "Country as brand, product, and beyond: A place marketing and brand management perspective", *Journal of Brand Management*, vol. 9, n. 4, pp. 249-61.

KREMER F., VIOT C. (2012), "How Store Brands Build Retailer Brand Image", *International Journal of Retail and Distribution Management*, vol. 40, n. 7, pp. 528-43.

LAROCHE M., PAPADOPOULOS N., HESLOP L.A., MOURALI M. (2005), "The influence of country image structure on consumer evaluations of foreign products", *International Marketing Review*, vol. 22, n. 1, pp. 96-115.

LASSAR W., MITAL B., SHARMA A. (1995), "Measuring customer-based brand equity", *Journal of Consumer Marketing*, vol. 12, n. 4, pp. 11-19.

LONDOÑO J.C., ELMS J., DAVIES K. (2016), "Conceptualising and measuring consumer-based brand-retailer-channel equity", *Journal of Retailing and Consumer Services*, vol. 29, pp. 70-81.

LONDOÑO J.C., ELMS J., DAVIES K. (2017), "A commentary on "conceptualising and measuring consumer-based brand-retailer-channel equity": A review and response", *Journal of Retailing and Consumer Services*, vol. 37, pp. 31-32.

MAGNUSSON P., WESTJOHN S., ZDRAVKOVIC S. (2011), "What? I thought Samsung was Japanese": accurate or not, perceived country of origin matters", *International Marketing Review*, Vol. 28, n. 5, pp. 454-72.

MARINO V., MAINOLFI G. (2013), "Country brand management", EGEA, Milano.

MARINO V., MAINOLFI G. (2010), "Valutazione e analisi del processo di country branding. La percezione del capitale reputazionale dell'Italia nel mercato cinese", *Mercati e Competitività*, n. 4. pp. 65-83.

MARTIN I.M., EROGLU S. (1993), "Measuring a multi-dimensional construct: Country image", *Journal of Business Research*, vol. 28, n. 3, pp. 191-210.

MARTINELLI E., DE CANIO F. (2018), "Retail Brand Equity: un'analisi customer-based", *Micro & Macro Marketing*, n. 3, pp. 397-416.

MARTINELLI E., DE CANIO F. (2019), "Eating in an Italian restaurant. The role of Country Image in driving Spanish customers attitude and intention to patronize an ethnic restaurant", *Mercati e Competitività*, n. 2, pp. 83-104.

MORSCHETT D., SWOBODA B., FOSCHT T. (2005), "Perception of store attributes and overall attitude towards grocery retailers: The role of shopping motives", *The International Review of Retail, Distribution and Consumer Research*, vol. 15, n. 4, pp. 423-47.

NAGASHIMA A. (1970), "A comparison of Japanese and US attitudes toward foreign products", *Journal of Marketing*, vol. 34, n. 1, pp. 68-74.

NEBENZAHL I.D., JAFFE E.D., USUNIER J.C. (2003), "Personifying country of origin research", *Management International Review*, vol. 43, n. 4, pp. 383-406.

PAPADOPOULOS, N. (1993), "What product and country images are and are not", in Papadopoulos, N. and Heslop, L. (Eds), Product Country Images: Impact and Role in International Marketing, International Business Press, New York, NY, pp. 3-38.

PAPADOPOULOS N., HESLOP L.A. (2002), "Country equity and country branding: problems and prospects", *Journal of Brand Management*, vol. 9, n. 4-5, pp. 294-314.

PAPADOPOULOS N., HESLOP L.A., BAMOSSY, G. (1990), "A comparative image analysis of domestic versus imported products", *International Journal of Research in Marketing*, vol. 16, n. 7, pp. 283-94.

PAPPU R., QUESTER P. (2006), "A consumer-based method for retailer equity measurement: Results of an empirical study", *Journal of Retailing and Consumer Services*, vol. 13, n. 5, pp. 317-29.

PAPPU R., QUESTER P. (2010), "Country equity: Conceptualization and empirical evidence", *International Business Review*, vol. 19, n. 3, pp. 276-291.

PAPPU R., QUESTER P.G., COOKSEY R.W. (2007), "Country image and consumer-based brand equity: relationships and implications for international marketing", *Journal of International Business Studies*, vol. 38, n. 5, pp- 726-45.

PARAMESWARAN R., YAPRAK A. (1987) "A cross-national comparison of consumer research measures", *Journal of International Business Studies*, vol. 18, n. 1, pp. 35-49.

PECOTICH A., PRESSLEY M., ROTH D. (1996), "The impact of country of origin in the retail service context", *Journal of Retailing and Consumer Services*, vol. 3, n. 4, pp. 213-224.

PHARR J.M. (2005), "Synthesizing country-of-origin research from the last decade: is the concept still salient in an era of global brands? *Journal of Marketing Theory and Practice*, vol. 13, n. 4, pp. 34-45.

RASHMI, DANGI H. (2016), "Act like a retailer, Think like a Brand: An overview of retailer brand equity and agenda for future research in Indian context", *Asia-Pacific Journal of Management Research and Innovation*, vol. 12, n.1, pp. 67-84.

ROTH K.P., DIAMANTOPOULOS A. (2009), "Advancing the country image construct", *Journal of Business Research*, vol. 62, n. 7, pp. 726-40.

ROTH M.S., ROMEO J.B. (1992), "Matching product category and country image perceptions: A framework for managing country-of-origin effects", *Journal of International Business Studies*, vol. 23, n. 3, pp. 477-97.

SAMIEE S. (2010), "Advancing the country image construct—a commentary essay", *Journal of Business Research*, vol. 63, n. 4, pp. 442-5.

SAMIEE S., SHIMP T.A., SHARMA S. (2005), "Brand origin recognition accuracy: its antecedents and consumers' cognitive limitations", *Journal of International Business Studies*, vol. 36, n. 4, pp. 379-97.

SHOCKER, A.D., SRIVASTAVA, R.K. AND RUEKERT, R.W. (1994), "Challenges and opportunities facing brand management: an introduction to the special issue", *Journal of Marketing Research*, vol. 31, n. 2, pp. 149-58.

SWEENEY J.C., SOUTAR G.N., JOHNSON, L.W. (1997), "Retail service quality and perceived value: A comparison of two models", *Journal of Retailing and Consumer Services*, vol. 4, n. 1, pp. 39-48.

SWOBODA B., BERG B., SCHRAMM-KLEIN H., FOSCHT T. (2013). "The importance of retail brand equity and store accessibility for store loyalty in local competition", *Journal of Retailing and Consumer Services*, vol. 20, n. 3, pp. 251-62.

SWOBODA B., HAELSIG F., SCHRAMM-KLEIN H., MORSCHETT D. (2009), "Moderating role of involvement in building a retail brand", *International Journal of Retail & Distribution Management*, vol. 37, n. 11, pp. 952-74.

SWOBODA B., WEINDEL J., HÄLSIG F. (2016), "Predictors and effects of retail brand equity-A cross-sectoral analysis", *Journal of Retailing and Consumer Services*, vol. 31, pp. 265-76.

THAKOR, M.V. AND KATSANIS, L.P. (1997), "A model of brand and country effects on quality dimensions: issues and implications", *Journal of International Consumer Marketing*, vol. 9, n. 3, pp. 79-100.

THAKOR M.V., KOHLI C.S. (1996), "Brand origin: conceptualization and review", *Journal of Consumer Marketing*. Vol. 13, n. 3, pp. 27-42.

THAKOR V.M., LAVACK A.M. (2003), "Effect of perceived brand origin associations on consumer perceptions of quality", *Journal of Product and Brand Management*, vol. 12, n. 6, pp. 394-407.

USUNIER J.C. (2006), "Relevance in business research: the case of country-of-origin research in marketing", *European Management Review*, vol. 3, n. 1, pp. 60-73.

USUNIER J.C. (2011), "The shift from manufacturing to brand origin: suggestions for improving COO relevance", *International Marketing Review*, vol. 28, n. 5, pp. 486-96.

YASIN M.N., NOOR N.M., MOHAMAD O. (2007), "Does image of country of origin matter to brand equity?", *Journal of Product & Brand Management*, vol. 16, n. 1, pp. 38-48.

YOO B., DONTHU N. (2001), "Developing and Validating a Multidimensional Consumer-Based Brand Equity Scale". *Journal of Business Research*, vol. 52, n. 1, pp. 1-14.

YOO B., DONTHU N., LEE S. (2000), "An examination of selected marketing mix elements and brand equity", *Journal of the Academy of Marketing Science*, vol. 28, n. 2, pp. 195-211.

VERLEGH P.W.J., STEENKAMP J.B.E.M. (1999), "A review and meta-analysis of country of origin research", *Journal of Economic Psychology*, vol. 20, n. 5, pp. 521-46.

VILLANUEVA L., PAPADOPOULOS N. (2003), "Toward a model of consumer receptivity of foreign and domestic products", *Journal of International Consumer Marketing*, vol. 15, n. 3, pp. 101-26.

WEINDEL J.K. (2016), *Retail Brand Equity and Loyalty: Analysis in the Context of Sector-Specific Antecedents, Perceived Value, and Multichannel Retailing*. Springer.

ZEITHAML V.A. (1988), "Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence", *Journal of Marketing*, vol. 52, n. 3, pp. 2-22.

Communicating sustainability through social media in the Italian universities context[♦]

MARTA MUSSO[*] ROBERTA PINNA[•] PIER PAOLO CARRUS[♠]

Abstract

Objectives. *The research purpose is to analyze how social media can be adopted to communicate sustainability by universities. More precisely it is to investigate whether the online platforms are used to support and in what way the main communication functions with reference to sustainability.*

Methodology. *The method adopted is qualitative, a content analysis regarding the sustainability messages posted by universities from the sample of six Italian universities selected for research from the list of Italian University Network for Sustainable Development.*

Findings. *The study confirms the three main functions of universities social media with regard to the sustainability communication. They consist mainly in information, action and community creation. In particular, the results show that universities mostly use the social platform to for the action and communication function. Whilst, more rarely, universities use the social platform to feed and activate stakeholders, through dialogue, in community building, trying to create strong links between individuals and groups specific sustainability issues of common interest.*

Research limits. *The limits of the research, refer to characteristic of the sample of the selected universities essentially, and to the implicit subjectivity of method adopted.*

Practical implications. *It can be highlighted the need for universities to develop a more specific relational orientation, consistent with the characteristics of social media, capable of promoting inclusive processes of the various stakeholders aimed to create active involvement in the sustainability strategies and practices of the university.*

Originality of the study. *The study provides important insights into the sustainability communication carried out by universities. The study offers an original interpretation of social communication for sustainability in the University sustainability sector.*

Key words: *sustainable development; social media; universities; communication functions.*

♦ The paper was created as part of the CESA-Center of Excellence for Environmental Sustainability research project funded by the Autonomous Region of Sardinia

[*] Assegnista - University of Cagliari - Italy
e-mail: musso@unica.it

[•] Associate Professor of Organization Management - University of Cagliari - Italy
e-mail: pinnar@unica.it

[♠] Associate Professor of Management - University of Cagliari - Italy
e-mail: ppcarrus@unica.it

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6
DOI 10.7433/SRECP.FP.2020.01

1. Introduction

Four years after the adoption of the 2030 Agenda by the 193 member countries of the United Nations, including Italy, there is a growing awareness worldwide of the need for an integrated approach to address complex economic, social, environmental and institutional challenges in order to shift to a sustainable development model. The sustainability goals integrate the three aspects of economic, societal, and environmental to ensure development for future generations (Elkington 1994). According to the Global Action Program on Education for Sustainable Development, adopted by UNESCO in 2014, it can be stated that radical changes are indispensable, especially in the way of thinking and acting when shaping relationships in a social context and together with the Earth's ecosystem. In order to ensure sustainable development that will meet the needs of present and future generations, it is necessary to equip all individuals with the appropriate knowledge and skills to shape a system of sustainability-related values. In literature (Lozano *et al.* 2015) there is large agree that the great challenges posed by Sustainable Development Goals (SDGs) require a profound cultural change about our lifestyles and ways of thinking and acting and the SDGs provide a unique opportunity to higher education institution to demonstrate their willingness and capability of playing an active role in the development of their respective countries and in contributing towards global sustainable development. There is a consensus among researchers (Sady *et al.*, 2019; Eizaguirre *et al.* 2019, Godeman *et al.* 2014) that universities play an important role in meeting the challenges of sustainable development through the formation of future generations and in the dissemination of knowledge within society, also with reference to the ability to promote sustainable development, that is, "a development that meets the needs of the present without compromising the possibility of future generations to satisfy their own (Brundtland Report, 1987). For this reason, international leaders have declared education as a motor for change and it is considered the most effective tool for the implementation of the Agenda. According to UNESCO (2014), the goal of education is to make people more knowledgeable, better informed, ethical responsible, critical and capable of continuing to learn. Education also serves by promoting greater awareness, inventing new techniques and tools. Students and local communities can be strongly influenced by the way the academic institutions operate and implement environmental and social sustainability policies, within their own communities. To deal with this important responsibility, on February 2016 in Italy was created the Italian University Network for Sustainable Development (RUS), the first experience of coordination and sharing between all Italian university committed to the topic of environmental sustainability and social responsibility. The main goal of RUS is to promote the culture of sustainability and good practice in the field, both within and outside the Universities, in order to increase, through sharing skills and experiences, the positive environmental, ethical, social and economic impact of the actions which are currently implemented by its member. Collecting best practices, promoting sustainability policies, favoring collaborative activities with other public bodies, development of a trans-disciplinary approach in university plan, to contribute to the growth of a culture of sustainable development and guide students towards positive lifestyle choices, creation of awareness-raising and promotional campaigns to foster stakeholder engagement are some of the objectives of the RUS network. In the last years, Italian university are starting to develop sustainability practices and to communicate them both internally and to relevant public. In light of this key role highlighted for Universities online communication represent a crucial issue to manage in order to spread sustainable culture and development. While the debate on sustainable development is rich and has reached a matured state, the aspect of communication has only recently attracted increased attention in this field. Communication about sustainability refers to processes in which information, interpretations, and opinions regarding sustainability issues are exchanged and debated. The growing interest in sustainability issues and in their performative character has led organizations to adopt appropriate channels both to communicate their commitment and to engage with their stakeholders, especially in an online context.

The emergence of social media has created an opportunity for organization communicators to interact with the public in such a way that traditional media and static websites cannot. People who

use social media perceive that they have more power in creating change than those who do not use social media to reach publics (Porter *et al.*, 2007). The bundling of social media platforms has become an important way for organizations to manage their reputations and maintain relationships with the public (Lovejoy & Saxton, 2012; Wright & Hinson, 2011). Many organizations, including institutions of higher education, actively use social media as part of their communication efforts (Barnes & Lescault, 2011; Cho *et al.* 2014). Organizational leaders perceive social media platforms as an effective way for organization promotion and community building (Carim & Warwick, 2013). As a result, some researchers try to understand how organization leaders and communicators use social media (Cho *et al.*, 2014). As social media channels are relatively new compared with traditional media such as television and radio, theoretical frameworks to identify how communicators employ social media as an organizational communication tool are still needed because social media features such as tagging, sharing, and instant personal messaging allow organization communicators to use social media in unique and diverse ways.

Starting from these considerations, it is noticeable that scholars have examined how organizations have communicated information about sustainability in their websites (Siano *et al.*, 2016; Cornelissen, 2011; Nejati et. al., 2011) but there are still few studies what examined how HEI are communicating about sustainability practices through social media. The purpose of this study is to fill this gap in sustainability communication research by analysing how social media can be adopted to communicate sustainability in the University sector. In particular it is to investigate how the most used universities social media platforms can develop and spread sustainability culture, sustainability related action and the active involvement of their stakeholders internal and external of the organisation. More precisely, it is to explore whether the social platforms are capable of supporting and in what way the main functions of the social web with reference to sustainability. The study is structure as follow: a literature review at first is presented, including online communication for sustainability, digital communication and social media, then the research methodology is described together with the data collection and the coding procedure. So, the results and discussion have been analyzed and at the end conclusions and practical implications are reported.

2. Theoretical background

2.1 Online Communication for sustainability

The sustainability approach, a set of principles, tools and practices oriented towards sustainable development, is progressively establishing as a new paradigm in the activities and processes management of all organizations (Golinelli and Volpe, 2012). During the last decades, the application of the sustainability paradigm to the HEI context received a growing interest in the managerial literature (Wright, 2002; Alshuwaikhat *et al.*, 2008; Ferrer - Balas *et al.* 2009) and universities are considered to be change agents in many issues including sustainability. There are many and different international and national initiatives that ask universities worldwide to assume responsibility for sustainability development by integrating sustainability in their core functions: research, education, operation & governance, external leadership. During the last decade, an increasing number of HEIs worldwide have been teaching and researching sustainable development (SD), as well as integrating SD into their daily operations (Von Hauff *et al.*, 2014; Wals, 2014). In this perspective, changed the role of the HEIs, from their "traditional" roles as educational infrastructure and research institutions, to "new" roles as drivers for innovation and disseminating and mainstreaming sustainability thinking within society (Lozano *et al.*, 2015). In this perspective, the universities play a strategic role in the development of economic systems through disseminating knowledge, creating innovation, promoting sustainable development, environmental friendliness, and fostering cultural growth. The interest of the HEIs about sustainability development has increased rapidly in recent years and has encouraged institutions to embracing the opportunity to

incorporate sustainability in their mission, into core functions and initiatives and report on these initiatives to key public. The interest and the growing attention towards sustainability by HEIs have led them to adopt appropriate digital communication strategies in order to communicate information about how the Institution acts to improve its economic, environmental and social effectiveness and efficiency. Moreover, the increasing attention to stakeholder engagement practices, providing new opportunities to promote public participation and to stimulate behavioral shift, suggests that HEIs are adopting new tools for online communication management (Reilly *et al.* 2014).

A recent trend in institutional communication now includes sustainability as a key business strategy, which has implications for sustainability communication programs in practice (Gomez *et al.*, 2011, Siano 2012). Communication *about* sustainability refers to processes in which information and opinions regarding sustainability issues are exchanged and debated. Sustainability communication may be defined as "the set of strategies and actions put in place by HEIs in order to disseminate correct knowledges of issues related to economic, social and environmental sustainability, to promote dialogue with the relevant public in order to facilitate the process to build agreement and to activate lifestyle changes". With the rapid development of technologies, online communication channels are becoming increasingly popular tools for communicating sustainability information, to create awareness about sustainability issue and to influence follower's behaviors (Huang *et al.*, 2019). HEIs, for example, are making efforts through the development of recycling and energy awareness campaigns, supporting students sustainability projects, and more actively involving key stakeholders in sustainability efforts. The characteristic of reciprocity is relevant because the sustainability communication requires a necessary participation so that information can be shared and can help to build consensus (Siano *et al.* 2016; Schults *et al.*, 2010; Newig *et al.*, 2013). Among the online tools that are most commonly used by organizations, a crucial role is played by not only by corporate website, but also by social media platform. Some author (Cornelissen, 2011) point out that online communication becomes a "key relational driver" that connects the organization with its stakeholders, helps develop trusted relationships with them, and enhances corporate reputation.

2.2 Digital communication and social media

The emergence of social media has created an opportunity for HEIs to interact with the public in such a way that traditional media and static website cannot. The advent of social media has opened up even greater possibilities for HEIs communication in order to promote and encourage the culture of sustainability and good practice among stakeholder. Social media platform (e.g. Facebook, Twitter, Instagram, etc.) refers to technology-facilitated dialogue conducted through platforms including blogs, wikis, content sharing, social networking, and social bookmarking and they provide new opportunities to address barrier such as a lack of engagement and awareness (Carpenter *et al.*, 2016). It differs from traditional media in that it allows for a two way interactive experience between organizations and stakeholders, rather than media outlets broadcasting information to the masses with no direct reaction or response (Kaplan & Haenlein, 2010). The term social media denotes highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content. In fact, social media platforms allow HEIs to engage in multi-stakeholder dialogue, and allow important opportunity for sustainability communication. This means that social media are strategic tools not only for disseminate information but also in order to create dialogue and engage public. Heldman et. al. (2013) defined social media engagement as "a multi-way interaction between and among an organization and digital communities that could take many forms, using social media channels to facilitate that interaction".

In the last few years, scholars have paid a growing attention to understand how the use of social media by HEIs can support the need to encourage the adoption of sustainability behaviours among students, faculty members and staff and to be more engaged with their public (Carpenter *et al.*, 2016). In particular, the expanding use of social media enables to sustainability leaders new ways by disseminating information about their campus sustainability efforts, policies and progress and to

encourage the adoption of sustainability behaviours among students, staff and faculty members. Sustainability messaging is shared in a way that creates opportunities for information to be acted on by the audience, thereby opening a dialogue with the organization that allows both parties to work collaboratively to address issues affecting the sustainability behaviours of the audience. From a sustainability perspective, these conversations can lead to varying levels of engagement. Feedback mechanisms, such as buttons or quizzes, facilitate more participation from users of social media and encourage a discussion among users with relatively few access or content creation barriers.

In the last few years, social media represent a critical innovation for HEIs not only because they allow institutions to quickly disseminate information to large audiences, but also because they engage communities in sustainability initiatives and build communities. Studies have shown that students through social media can, not only, to share their experiences through discussion forums, chat rooms and instant messaging, or online consultation with a qualified staff but to express themselves, share their stories, learn from others. Engagement is a key element in mobilizing and building communities. In fact, social media platform enhance the possibilities for dialogue, making it more intense and frequent, they encourage the sharing of information and knowledge, contribute to increase the trust deriving from greater informality and ease of relationships, not only between students but also between these and the HEI staff, creating in fact a cognitive and emotional context that allows students to feel part of a community. Empirical researches on in public and non-profit organizations indicates (Carpenter *et al.*, 2016; Campbell *et al.*, 2014; Lovejoy, *et al.* 2012) that organizations seem to employ social media platform for three purpose: *information*, *community* and *action*. Lovejoy and Saxton (2012) found that the three functions represent a "hierarchy of engagement", starting with information, then community and action at the top. Information are the initial form of engagement. Through social media platforms sustainability leaders' to disseminate information about the organization's activities, projects, events, reports, sustainability policies and progress with the aim to increase awareness about environmental issues or university activities among their audiences, including students, faculty members, and staff (Williams *et al.*, 2014; Velazquez, *et al.* 2005) and represents the first step in changing behaviors (Djordjevic & Cotton, 2011). According to the literature, one of the main function of social media is the dialogic relationship building. In other words, the kind of activities that Lovejoy *et al.* (2012) defined as "community" is unique to social media platform because is this function that allows organizations to the creation of an online community with the stakeholders. In other words, it is through interactivity characteristic of social media that organizations' leaders can to build relationship and stimulate the dialogue with their public, which are crucial to the success of university sustainability efforts (Barlett & Chase, 2004). If used effectively and efficiently, social media platform can promote discussion and dialogue (Castronovo and Huang, 2012), engage stakeholders (Newell and Dale, 2015) and improve the collaboration in online environment (Murphy and Salomone, 2013). Communicators can post messages in order to exchange ideas and opinions about sustainability initiatives with the aim of interact with publics. Some authors (Huang and Barlas, 2009) show that shared interests toward the same topics in starting conversation often initiate word of mouth discussion. Conversations are more likely to occur between people who share common interests. The third function is "action" - marketing, promotion and mobilization - that is important for the organization in order to get its followers to do something for the cause it support. Therefore, sustainability leaders can use social media as a resource that can be mobilized to inspire behavioural change and to help the HEIs fulfil their mission (Valenzuela *et al.*, 2014). In this way, the institution intended to encourage followers to engage in a specific action to help the organization to meet its objectives of sustainability development. For example, institution of higher education leaders can directly ask to students to reduce the use of plastic bottles through the use of indoor and outdoor fountains installed in the campus.

3. Methodology

In this study, it has been investigated how academic institution use social media can be adopted to communicate sustainability. A qualitative methodology has been conducted to explore the research question of this study, the analysis of sustainability communication function on an educational social network context has been carried out. Indeed, a qualitative methodology can be considered as a proper solution to assess contents within an online platform throughout the educational network, given the qualitative nature of the information exchanged and the typology of messages provided by Universities. Facebook has been chosen as the social platform to be analysed, considering it as the most relevant and spread tool, and, in addition, it allows to contemporary use sustainability related contents as text and several multimedia contents on its page, such as video, links, photos, gif etc., which stimulate the patient reactions and their contributions. Within the institutional Facebooks pages, it is also easy to observe the social communication strategies implemented by communication leaders of organisations and the interactions between the firm and its users, even customer-to-customer interactions, in an evolutionary sequence of posts and comments continuously published by the actors. As a sampling frame it has been considered a selection of the most active Italian Universities online Facebook pages on sustainability. A qualitative content analysis has been developed and, following Miles and Huberman (1994), a list of codes defined from the literature was created prior to define the fieldwork to guide the analysis. Defining coding as the organisation of raw data into conceptual categories, each code is effectively a category or 'bin' into which a piece of data is placed. Thus the data collected from the different Facebook pages selected from July 2019 and January 2020 have been coded and the analysis has been developed.

3.2 Data collection and the coding procedure

The first step of the data collection process was focused to determine which universities could be the most active in communicating sustainability through social network to compose the dataset. The first criteria of selection was to consider those Universities participating at the Italian University Network for Sustainable Development. The Network includes 73 Universities with different communication strategies on sustainability and different level of sustainability communication commitment. To determine which were the most active Facebook page belonging to the Italian University Network for Sustainable Development a brief analysis of every page have developed with the aim to assess which contents were referred to sustainability and sustainability development on the sample period between October and December 2019. To carry out this first step of the analysis a browser application of NVivo software, NCapture, has been used to collect post contents shared into official Facebook pages of the 73 Universities for the sample period. With Nvivo software it has been possible, by setting different queries, to determine which were the sustainability related content posted by each University Facebook page. It has been found that only few Universities have dedicated the page to sustainability exclusively, and 6 pages were sensibly more active then the other 73. Thus 6 Italian Universities institutional Facebook pages were considered for the proper database to study the role of the social page for the sustainability communication. The period studied is between July 2019 to January 2020, and through Nvivo a total of 900 messages approximately posted by University were gathered and analysed. From the total amount of post it has been to determine which were related to sustainability and sustainability development, therefore through Nvivo the different queries were repeated, including word search with "sustainability", "sustainable" both in English and in Italian, finding in total 336 sustainability related post from the 6 University selected. The next step of the analysis concerned the specific coding of the sustainability related post from the perspective of the University communication about sustainability. In particular through the coding procedure, we have investigated which are the functions of the sustainability communication on the social media page. All the posted messages by the University has been coded too in relation to the different communication functions which can be

implemented by managers to enhance sustainability culture and development throughout the community. These are very significant data to be coded and studied because they represent the communication strategy on sustainability implemented by the Universities simultaneously received by users. The coding scheme has been developed previously from the literature on management studies referring to communication on social web and sustainability communication (Lovejoy *et al.* 2012, Carpenter et al, 2016; Neiger *et al.*, 2013; Heldman *et al.*, 2013) and a thematic analysis (Gibbs 2007). In the next paragraph the coding procedure will be explained considering the former literature that served as the basis for the communication functions model into social media platform. All the post of Universities selected on the institutional Facebook page served as the coding units of analysis for this study. To avoid observation bias driven by a researcher's expectations, Prior the actual coding, two trained coders, independently coded a sample of 50 Post and, in order to evaluate consistence between the content analysis performed by the two co-authors, and consequently evaluate the robustness of the analysis. More specifically, the coding procedure has been developed through a two-step path. In the first step the coding procedure aims to identify the different categories of messages describing the different functions of communication for sustainability implemented on the social media institutional Facebook page. For this purpose, a model from the communication literature on social media has been used to identify which are the communication function on social media. Therefore, the activities of the model have to be adapted in order to fit a sustainability context. Three main categories have been identified for this classification (Tab.1).

Tab. 1: Social media communication functions

Communication function	**Description**
INFORMATION	The information function of social media for sustainability involves a unilateral posting strategy, in which universities simply share information with the only purpose to inform publics about sustainability issues and initiative carried out by universities (Lovejoy & Saxton, 2012). It can be expected on the platform that HEIs could inform students, faculty members, and staff about their universities sustainability policies, practices and progress.
ACTION	This function is related to inspire behavioral changes for sustainability related causes (Valenzuela, Arriagada, & Scherman, 2014). This function involves using social media to get stakeholders to do something for the organization and for sustainable development which makes it the most outcome-oriented function of the organizational social media strategies (Lovejoy & Saxton, 2012). It can be expected that HEIs can directly or indirectly ask followers to attend an event, make a donation, recruit other attendees, buy a product, or adopt a specific sustainable behave.
COMMUNITY	It involves applying social media to build and nurture the dialog of members around points related to the organization, and to sustainability which include dialogue to facilitate community building around causes. It can be expected that HEIs facilitate exchange of ideas and opinions with the goal of interacting honestly and ethically with stakeholders (Lovejoy & Saxton, 2012; Waters & Jamal, 2011).

Source: our elaboration

Starting from the previous classification, the next passage was try to define better each main category into different categories of function for sustainability on the Facebook page. Therefore, the next phase has been focused to best define the three different communication functions referring both to the literature and a thematic analysis. From the literature it emerged that several authors tried to classify different categories and, integrating different model it emerged what is described on Table 2.

Tab. 2: Sustainability communications functions categories.

Communication function	Categories	Description
Informative	**Sharing news about general sustainability development**	Sharing information about results and general information coming from external environment, not from the University. It is transferred in a unilateral way. (Neiger *et al.*, 2013)
	Sharing information on ongoing project of the University.	Information about the organization's activities, initiatives and highlights from events, or any other news, facts, reports or information relevant to an organization's stakeholders. It is transferred in a unilateral way (Neiger *et al.*, 2013, Lovejoy *et al.* 2012)
Action	**Promoting Events**	It corcern Integrating the virtual and real world, and gives committed social media users the opportunity to gain access to events and opportunities about sustainability.
	Call for volunteers	To list volunteers for opportunities (Lovejoy *et al.* 2012)
	Join other site or vote for organisations	Involves asking followers to join another social media site or vote for the organization on another site. Moreover, it involve users to advocate for the university in sustainable development (Lovejoy *et al.* 2012) .
	Changing habits	Refers to the communication action that can be implement to modify users' routines and practices, in terms of sustainability, to manage long-term changes. More responsible Consuption etc (Heldman *et al.*, 2013, McColl Kennedy *et al.* 2017)
Community	**Information collection**	To solicit a conversational response from stakeholders. Such tweets are important because they clearly show that the organization is looking to create dialogue. These are not just interesting statements that might spark a conversation, but messages that explicitly seek a response of some sort. (Heldman *et al.*, 2013, McColl Kennedy *et al.* 2017)
	Make chance of interaction between users	Create opportunities for users to engage with the organization, and for your users to engage with each other, and to encourage user generated content. (Neiger *et al.*, 2013, Heldman *et al.*, 2013, McColl Kennedy *et al.* 2017)

Source: our elaboration

Thus, ones the coding scheme emerged from the literature has been set the next phase has been applying it to the data collected. Therefore, the procedure was to determine whether each post could be placed.

4. Results and discussion

We investigated how communicators of Universities use social media in order to stimulate sustainability development. Almost all the institutional social page of the universities observed use Facebook in a considerable way to promote sustainability, one of them had gave more attention than other dedicating a social institutional Facebook page to sustainability. For what concern the results, it can be argue that institutions of higher education use social media for primarily action and information purposes, whilst for a minor use them to engage and create the community in dialogical interaction. Furthermore, the majority of post are dedicated to promote action, rather than simply transfer information in a unilateral way. It has been also noticed that only in few occasion, even significant for their content, HEIs stimulate dialog and try to collect information directly or indirectly from users. The following table describes the frequencies of post dedicate for each category.

Tab. 3: Post frequencies

Communication function		**Freq.**	**Percent. %**
Information	Sharing news about general sustainability development	52	15,48
	Sharing information on ongoing project of the University	60	17,86
	Total	**112**	**33,34**
Action	Promoting Events	81	24,11
	Call for volunteers	7	2,08
	Join other site or vote for organisations	18	5,35
	Changing habits	64	19,05
	Total	**170**	**50,59**
Community	Information collection	22	6,55
	Make chance of interaction	32	9,52
	Total	**54**	**16,07**
General total		**336**	**100**

Source: our elaboration

As it can be seen from the table Universities are more likely to use social media to push content for promoting events both regarding the university activities for sustainability, and general themes regarding other organisation committed in sustainability. Very significant post were referred both to promote events for sustainability belonging to the universities or to other organisation. Also, others very significant posts were aimed not only to give information, but to stimulate behaves which could favour sustainable development for, environmental, economic and social dimensions such as "*A new guide to correctly do the separate waste collection! We have decided to join the European Week for Waste Reduction with the Sustainable Unixxxxx project and we have prepared a new document that you can download and use* ". This result is very consistent with the nature and mission of universities and in particular to the Italian Universities network for sustainable development. To promote sustainability culture and to foster sustainable development a communication focused on behavioural change and action is crucial. Another important insights coming from results is that universities are very keen in highlighting their achievements in sustainability. This is demonstrate by the importance in terms of relevance of the post dedicated to informs public regarding information about sustainability carried out by the HEI.

It is worth mentioning that no other main functions emerged from the coding procedure.

It has been observed that Universities are very keen to present event in order to make people participate, "*A meeting on new technologies, energy and sustainable development aimed at the world of Research, businesses and the local area. Take part in the* "*National Technology Cluster for Energy*"*, organized on November 27 at Palazzo Bo!*". This type of function is largely encouraged on the social page, the HEIs publish very often and coordinate opportunities for students, faculty members, alumni, and staff to increase participation in campus sustainability events.

The recruitment of people to participate as volunteers for events or causes appears to be not a very developed category used by universities in this context. This can be due to the nature of the web page and the typology of events and information posted on the page. But even if the number of post was not huge, the significance of the contents were relevant referring to the typology of request, indeed, many of these volunteers were required to participate as volunteer to an university initiative. So it could be considered an indirect way to promote organizational sustainable actions. They indeed perceive social media as an effective tool in coordinating attendance at events for a mostly mobile population. Also, it has been noticed that universities encourage very often adoption of sustainable behaviours by increasing awareness of positive sustainability practices on their campus and on daily routines actions. For example, sharing experience about responsive consumption "*The #myPoliTObottle have been snapped up! Of the first models there is only one left! 💸But finally the missing models have arrived and, from tomorrow, those who have not yet*

collected it will be able to go to the Student Office and choose their own bottle In addition, from Monday 3 February the distribution times of the #myPoliTObottle will change:- Monday and Friday from 9 to 12.30- Wednesday from 12.30 to 15.30 Remember to fill in the questionnaire and to bring the Smart Card with you!" They also provide their audiences educational insight on how one can easily help the environment.

Tab. 4 Messages posted on the Facebook pages by Universities

Communication function		Quotation
Information	**Sharing news about general sustainability development**	*Every year the approximately 5.6 trillion cigarettes produced in the world are made with cellulose acetate filters, a material that can take over ten years to decompose.Hence the project of the xxxx startup xxxxx which, through the hydrothermal carbonization technique, obtains coal from the cigarette butts destined for the #painting sector, managing to transform such a dangerous # waste into a # resource.* *The #WorldEcolabelDay is celebrated today in over 50 countries, a day dedicated to all those products and services that have proven to be preferable from an environmental point of view, and whose performances have been tested in order to guarantee the best results for health of consumers and for the planet.*
	Sharing information on ongoing project of the University	*In the episode of "Cammina Italia" dedicated to scientific research, xxxxxxxx,(….), spoke on sustainability, technological innovation and energy diversification (….) in the reportage shot along the course of the xxxxx, with a focus on Ecomuseum xxxxxx* *The "green economy" is advancing and there is an increasing need for specialized figures in helping companies in the transition towards sustainable energy policies, both economically and financially. A highly requested figure for which, however, to date, there is no dedicated training course. Now a new European Erasmus + project led by the University of xxxxxxxxxx will fill this gap, giving life to an international degree course with a joint degree designed to support the green turning point of the productive world.* *With Sustainable Unixxxxx we have put on paper all the objectives achieved during 2018 with respect to gender equality, equal opportunities, inclusion, well-being and impact on the environment. These are the first results since the approval of the Charter of commitments that we started following a year ago, and until 2022. You can read it and download it here*
Action	**Promoting Events**	*On Tuesday 10 December, at 5.30 pm in the SMT.10 classroom of the XXXXX, the third edition of the cycle of "Sustainability pills" meetings organized by the Sustainability Commission - University of XXXXX.* *In the first meeting, entitled "Human Rights Day: towards fair, supportive and sustainable trade", the teachers of the Department of XXXXX XXXXX will speak.* *To participate, read the article on UniXXXX:*
	Call for volunteers	*Help the Geography Museum - University of XXXX with a donation! We launched the "Save the globes" campaign for the restoration of two precious museum artifacts, but we need your help!Find out how to become a donor: XXXXXX*
	Join other site or vote for organisations	"*There is enough food on Earth to feed the entire world population but one third of the amount produced every year is wasted. In most cases, however, these "wastes" can be avoided and become raw material for the preparation of new dishes and tasty recipes! With the #StopTheWaste campaign, the World Food Program invites everyone to reflect on the theme by launching a curious challenge: Search your refrigerator or pantry for food that is close to its expiration date and can still be consumed. Take a selfie while you prepare or eat it. Share the photo on social media using the hashtag #StopTheWaste and challenge three friends to do the same by tagging them in the post. Finally, why not, share the recipes made with advanced food on your social profiles or organize a dinner at your home by inviting your friends to do the same!*"
	Changing habits	*Do you have to dispose of small electrical or electronic appliances, but do you continue to store them at home at the moment? Are you submerged in batteries, plastic caps or corks that you don't know where to throw properly? Today, all day, and tomorrow until 17, you can deliver them to the XXXXX students in front of classroom 2 of the XXXXXXX headquarters. Together with the University and we of the Green Team, they will take care of disposing of everything correctly .*
Community	**Information collection**	*Tell us your vision about accessibility and sustainable mobility in xxxxxxxxx. Participate in the video competition U-mob LIFE: you could win 500 euro!* *What is your idea for a sustainable campus? Participate in the workshop organized by Ecòxxxxxx in collaboration with the Green Team, Wednesday 30 October from 17.30, to search together for innovative ideas and solutions for our University! Do not miss!*
	Make chance of interaction	*Do you remember the open assembly of the xxxxx Regional Council dedicated to the theme "Environment and climate, which solutions for the future", in which the xxxxxx universities have focused attention on the urgency of actions to combat climate change?* *Here you will find the presentation displayed during the intervention……..*"

Source: our elaboration

Concerning information and action function it has been found that relevant messages posted by universities were aimed to inform and stimulate the participation in educational sustainable initiative carried out by the universities such as "*Let us build a more sustainable teaching together! With xxxxxxxxxxx, Paralympic water skiing champion, we discover a new educational cooperation, focusing on the culture of heterogeneity and diversity. Come to meet him on Thursday 21 in the Aula Magna at Palazzo Bo: participation is free! > http://bit.ly/didatticasostenibilita*". This results gave important insights to the commitment of University in sustainable development also in their main activities including the construction of new sustainable educational path. "*Come to discover the General Course, our transversal course dedicated to inclusion! xxxxxxxx xxxxxxxx and xxxxxxx xxxxxxx talk about what they learned from this experience, from the point of view of the teacher and the student*"

Another important results to be emphasised is the role of the community creation function represented by the information collection and make chance of interaction between users. This two subcategories were not so strongly developed, and the facilitation of the dialog by university is related to post referred mainly to collect information about sustainable university initiative " *Tell us your vision about accessibility and sustainable mobility in xxxxxx. Participate in the video competition U-mob LIFE: you could win 500 euro!*".

The content analysis carried out also shows that there is no an optimal method to use social media channels for the universities communication in terms of sustainability.

The three categories of communication mainly oriented to information, action, community, all interacting with each other, they seem to be integrated in the context of a complex communication strategy of sustainability. In particular, the components of information and action progressively would feed the community component as the most advanced form of communication in terms of sustainability.

Furthermore, in particular, concerning results emerging from the content analysis it can be possible to observe the links between communication categories (information action and community), and it has been possible to notice that the community category could benefit in perspective of content of messages relating to the "information" and "action" components. Indeed it can be argue that single posts coded as community creation perspective includes and are fostered from information or action basis to be developed as community creation.

For instance they post: *Tell us your vision about accessibility and sustainable mobility in xxxxxxxxx. Participate in the video competition U-mob LIFE: you could win 500 euro!*

What is your idea for a sustainable campus? Participate in the workshop organized by Ecòxxxxxx in collaboration with the Green Team, Wednesday 30 October from 17.30, to search together for innovative ideas and solutions for our University! Do not miss!. This post contain at the same time the information transferred by the university and the invitation to participate at the contest that is an action based coding with the aim to involve participant in a community for the same contest among the university for a sustainability initiative. Also they post:" *Are you a curious person and do you like cooking? Do not miss the workshops of L'uovo di xxxxx LAB, a laboratory open to all citizens where you can transform surplus food into culinary excellence!*

During the workshops, open to all, you will work "with your hands in dough" transforming surplus food, recovered in the area, through a #designoriented process full of creativity and experimentation with a view to #economic circulation and enhancement of #resources.

The laboratory is created by the xxxxxxxxxxx of the xxxxxxxxxxxxxxxxx. In this post they are not only gathering participant to an event (action) already promoted through the social page, but they are also transferring information and contribuiting to creating a community.

Given these considerations it can be argued that the community creation post are the most advanced in terms of communication strategy and they exploit information and action content most of the time. Therefore, if it would be assessed a systematic view of the three categories it would be appreciated in a progressive way starting from the information category through the action and at the end the community creation.

In other words, communication oriented towards the creation of the community fueled by information and action allows the various stakeholders (students, families, teachers, etc.) not only to be informed but also to actively participate in the definition of strategies and their implementation in sustainability issues.

5. Conclusions and pratical implications

The research purpose has been to analyze how social media can be adopted to communicate sustainability. With the aim to accomplish this scope, the method of the content analysis has been implemented regarding the sustainability messages posted by universities from the sample of six Italian universities selected for research. The application of this method allowed to classify the messages detected in different grouped categories, according to the framework developed by Lovejoy and Saxton (2012) and validated by subsequent studies (Carpenter *et al.* 2016; Campbell, *et al.*, 2014). The study confirms the three main functions of universities social media with regard to the sustainability communication. These findings are consistent indeed with earlier research (Campbell et. al, 2014; Carpenter et. al. 2016; Saxton and Waters et. al., 2014). The functions found consist mainly in information, action and community creation, all referring to the commitment of the universities in sustainable development communication. In particular, the results show that universities mainly use the social platform to promote sustainability initiatives, increasing users participation in university sustainability initiatives. Universities use also social media to request or suggest to all internal and external stakeholders the adoption of actions capable of contributing to sustainable development (purpose of action) and to disseminate the information necessary to increase the awareness of the various stakeholders on the sustainability issues worthy for university and the territory (information purpose).Whilst, more rarely, universities use the social platform to feed and activate stakeholders, through dialogue and conversation, in community building, trying to create strong links between individuals and groups specific sustainability issues of common interest. Some of the most representative topic observed on the social page have been the sustainability of teaching, research, support to companies for the development of sustainable solutions, energy saving, climate change. Considering the current period characterized by a transition towards sustainability perspective, it seems from results that, although universities are starting to use social media also to communicate their commitment to sustainable development very noticeably, there is still no adequate use of all the communicative potential of social platforms and, in particular, of their specific interactivity characteristics with reference to the community creation. Social media platforms offer the greatest potential for building links and interactions between universities and internal and external stakeholders. It has also been possible to observe the chance to improve the use of the high interactive capacities of social platforms not yet fully exploited by universities in relation to the communication of their progressive commitment to the dissemination of culture and good sustainability practices both to the inside and outside the universities.

Concerning the managerial implications, it can be highlighted the need for universities to develop a more specific relational orientation, consistent with the characteristics of social media, capable of promoting inclusive processes of the various stakeholders aimed to create active involvement in the sustainability strategies and practices of the university. In other words it emerges the need of the development of an orientation for communication responsible in university capable of evolving the communication of sustainability in the direction of building structured forms of collaboration (of online and offline communities) that allow, through listening, the dialogue and conversation to include and to make participating the various internal and external university stakeholders in the formulation processes of strategies, initiatives and other practices in terms of contributing to sustainable development.

Results also suggest the need for a greater allocation of resources, certainly not favored by the progressive reduction of university funding, on the creation of specific skills for professional responsive to manage communication on social media in particular. The aim is to to best exploit the

opportunities for relational exchange that the interactivity features of social platforms allow. With regard to the analysis developed, the limits of the research, refer to characteristic of the sample of the selected universities essentially, and to the implicit subjectivity of method adopted. The limited number of universities may have conditioned the results, thus a different, more representative sample of "sustainable" universities could be needed to be able to generalize results. Referring to the coding method for classification of the contents of the sustainability communication, albeit its implicit subjectivity, it is worth mentioning that it could be reduced by the "rigidity" of the classification process and its replicability.

The analysis have focused on the contents posted by universities concerning the organizational communication on sustainability conveyed by social media platforms. Therefore, future research could integrate the analysis of the university's communication activity with analysis aimed to assess the "perception" of the various internal and external stakeholders of the university. This potential study could include reactions and messages posted not only by universities but also by users. The other research perspective could concern the evaluation of the communication effectiveness on Facebook or other social media oriented, through interactional analysis, to assess the social page ability to encourage the engagement of users in sustainability related issues.

References

ALSHUWAIKHAT H.M., ABUBAKAR I. (2008), "An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices". *Journal of cleaner production*, vol. 16, n. 16, pp. 1777-1785.

BARLETT P.F., CHASE G.W. (2004), *Sustainability on campus: Stories and strategies for change*, Cambridge, MA: MIT Press.

BARNES N.G., LESCAULT A.M. (2011), *Social media adoption soars as higher-ed experiments and reevaluates its use of new communications tools. Center for Marketing Research*, University of Massachusetts Dartmouth, North Dartmouth, MA.

BRUNDTLAND G.H. *(*1987), Our Common Future, Report of the World Commission on Environment and Development. Oxford: Oxford University Press.

CAMPBELL D.A., LAMBRIGHT K.T., WELLS C.J. (2014), "Looking for friends, fans, and followers? Social media use in public and nonprofit human services", *Public Administration Review*, vol. 74, n. 5, pp. 655-663.

CARIM L., WARWICK C. (2013), "Use of social media for corporate communications by research-funding organisations in the UK", *Public relations review*, vol. 39, n. 5, *pp.* 521-525.

CARPENTER S., TAKAHASHI B., CUNNINGHAM C., LERTPRATCHYA A.P. (2016), "The roles of social media in promoting sustainability in higher education", *International Journal of Communication*, vol. 10, pp. 1-19.

CASTRONOVO C., HUANG L. (2012), "Social media in an alternative marketing communication model". *Journal of marketing development and competitiveness*, vol. 6, n. 1, pp. 117-134.

CHO M., SCHWEICKART T., HAASE A. (2014), "Public engagement with nonprofit organizations on Facebook", *Public Relations Review*, vol. 40, n.3, pp. 565-567.

CORNELISSEN J. (2011), *Corporate Communication. A Guide to Theory and Practice*, 3rd ed.; Sage: London, UK.

DJORDJEVIC A., COTTON D.R.E. (2011), "Communicating the sustainability message in higher education institutions", *International Journal of Sustainability in Higher Education*, vol. 12, n. 4, pp. 381-394.

EIZAGUIRRE A., GARCÍA-FEIJOO M., LAKA J.P. (2019), "Defining sustainability core competencies in business and management studies based on multinational stakeholders' perceptions", *Sustainability*, vol. 11, n. 8.

ELKINGTON J. (1994), "Towards the sustainable corporation: Win.win-win business strategies for sustainable development", *California Management Review*, vol. 36, n. 2, pp. 90-100.

FERRER-BALAS D., BUCKLAND H., DE MINGO M. (2009), "Explorations on the University's role in society for sustainable development through a systems transition approach. Case-study of the Technical University of Catalonia (UPC)", Journal of Cleaner Production, vol. 17, n. 12, pp. 1075-1085.

GIBBS G.R., (2007), *4 Thematic coding and categorizing. Analyzing Qualitative Data*, London: SAGE Publications, Ltd.

GOLINELLI G.M., VOLPE L. (2012), *Consonanza, valore, sostenibilità: verso l'impresa sostenibile*, Cedam.

GÓMEZ L.M., CHALMETA R. (2011), "Corporate responsibility in US corporate websites: A pilot study", *Public relations review*, vol. 37, n.1, pp. 93-95.

HELDMAN A.B., SCHINDELARJ., WEAVER J.B. (2013), "Social media engagement and public health communication: implications for public health organizations being truly "social"", *Public health reviews*, vol. 35, n.1.

HUANG L., BARLAS S. (2009), "When will people tell you something you do not know?", *Advances in Consumer Research*, vol. 36, pp. 761-762

HUANG L., CLARKE A., HELDSINGER N., TIAN W. (2019), "The communication role of social media in social marketing: a study of the community sustainability knowledge dissemination on LinkedIn and Twitter", *Journal of Marketing Analytics*, vol. 7, n.2, pp. 64-75.

KAPLAN A.M., HAENLEIN M. (2010), "Users of the world, unite! The challenges and opportunities of Social Media", *Business horizons*, vol. 53, n. 1, pp. 59-68.

LOVEJOY K., SAXTON G.D. (2012), "Information, community, and action: How nonprofit organizations use social media", *Journal of computer-mediated communication*, vol. 17, n.3, *pp.* 337-353.

LOZANO R., CEULEMANS K., ALONSO-ALMEIDA M., HUISINGH D., LOZANO F.J., WAAS T., HUGÉ J. (2015), "A review of commitment and implementation of sustainable development in higher education: results from a worldwide survey". *Journal of cleaner production*, vol. 108, pp. 1-18.

McCOLL-KENNEDY J.R, VARGO S.L, DAGGER T.S, SWEENEY J.C., VAN KASTEREN Y.,(2012), "Health Care Customer Value Cocreation Practice Styles", *Journal of Service research*, vol. 15, n. 4, pp. 370-389.

MILES A.M., HUBERMANN M (1994), *Qualitative data analysis: an expanded sourcebook*. Thousand oaks CA Sage.

MURPHY G., SALOMONE S. (2013), "Using social media to facilitate knowledge transfer in complex engineering environments: a primer for educators", *European Journal of Engineering Education*, vol. 38, n. 1, *pp.* 70-84.

NEIGER B.L., THACKERAY R., BURTON S.H., THACKERAY C.R., REESE J.H. (2013), "Use of twitter among local health departments: an analysis of information sharing, engagement, and action", *Journal of medical Internet research*, vol. 15, n. 8.

NEJATI M., SHAFAEI A., SALAMZADEH Y., DARAEI M. (2011), "Corporate social responsibility and universities: A study of top 10 world universities' websites", *African Journal of Business Management*, vol. 5, n. 2, pp. 440-447.

NEWELL R., DALE A. (2015), "Meeting the climate change challenge (MC^3): the role of the Internet in climate change research dissemi-nation and knowledge mobilization", *Environmental Communication*, vol. 9, n. 2, pp. 208-227.

NEWIG J., SCHULZ D., FISCHER D., HETZE K., LAWS N., LÜDECKE G., RIECKMANN M. (2013), "Communication regarding sustainability: Conceptual perspectives and exploration of societal subsystems", *Sustainability*, vol. 5, n. 7, pp. 2976-2990.

PORTER L.V., TRAMMELL K.D.S., CHUNG D., KIM E. (2007), "Blog power: Examining the effects of practitioner blog use on power in public relations", *Public relations review*, vol. *33*, n. 1, pp. 92-95.

REILLY A.H., HYNAN K.A. (2014), "Corporate communication, sustainability, and social media: It's not easy (really) being green", *Business horizons*, vol. 57, n. 6, pp. 747-758.

SADY M., ŻAK A., RZEPKA K. (2019), "The Role of Universities in Sustainability-Oriented Competencies Development: Insights from an Empirical Study on Polish Universities", *Administrative Sciences*, vol. 9, n. 3.

SAXTON G.D., WATERS R.D. (2014), "What do stakeholders like on Facebook? Examining public reactions to nonprofit organizations' informational, promotional, and community-building messages", *Journal of public relations research*, vol. 26, n. 3, pp. 280-299.

SIANO A. (2012), "La comunicazione per la sostenibilità nel management delle imprese", *Sinergie Italian Journal of Management*, n. 89, pp. 3-23.

SIANO A., CONTE F., AMABILE S., VOLLERO A., PICIOCCHI P. (2016), "Communicating sustainability: An operational model for evaluating corporate websites", *Sustainability*, vol. 8, n. 9.

UNESCO (2014), Roadmap for Implementing the Global Action Programme on Education for Sustainable Development, UNESCO.

VALENZUELA S., ARRIAGADA A., SCHERMAN A. (2014), "Facebook, Twitter, and youth engagement: A quasi experimental study of social media use and protest behavior using propensity score matching", *International Journal of Communication*, vol. 8, pp. 2046-2070.

VELAZQUEZ L., MUNGUIA N., SANCHEZ M. (2005), "Deterring sustainability in higher education institutions: An appraisal of the factors which influence sustainability in higher education institutions", *International Journal of Sustainability in Higher Education*, vol. 6, n. 4, pp. 383-391.

VON HAUFF M., NGUYEN T. (2014), "Universities as Potential Actors for Sustainable Development", *Sustainability*, vol. 6, pp. 3043-3063.

WALS A. (2014), "Sustainability in higher education in the context of the UN DESD: A review of learning and institutionalization processes. *Journal of Cleaner Production*, vol. 62, pp. 8-15.

WATERS R.D., JAMAL J.Y. (2011), "Tweet, tweet, tweet: A content analysis of nonprofit organizations' Twitter updates", *Public relations review*, vol. 37, n. 3, pp. 321-324.

WILLIAMS K.C., PAGE R.A., PETROSKY A.R. (2014), "Green sustainability and new social media", *Journal of Strategic Innovation and Sustainability*, vol. 9, pp. 11-33.

WRIGHT D.K., HINSON M.D. (2011), "A three-year longitudinal analysis of social and emerging media use in public relations practice", *Public Relations Journal*, vol. 5, n. 3, pp. 1-32.

WRIGHT T.S. (2002), "Definitions and frameworks for environmental sustainability in higher education", *Higher education policy*, vol. 15, n. 2, pp. 105-120.

Value co-creation in University-Industry collaboration. An exploratory analysis in digital research projects

FRANCESCO POLESE[*] MARIA VINCENZA CIASULLO[•] RAFFAELLA MONTERA[♠]

Abstract

Objectives. *The article aims to investigate how academic and business actors co-create value when collaborating in digital research projects.*

Methodology. *A qualitative research is conducted adopting a social constructionism approach. Thirty participants selected between Italian university researchers and industry practitioners take part in three focus groups.*

Findings. *The interplay among resources, interactions and outcomes is analyzed across individual, organizational, and institutional layers to provide a comprehensive understanding of value co-creation process between university and industry. Some barriers to co-creation of value also emerge.*

Research limits. *The paper has some limitations related to generalizability of research results. Anyway, these limits provide avenues for future research.*

Practical implications. *The study contributes practically to the debate on value co-creation between university and industry in the context of digitization highlighting some actions aimed to develop successful research collaboration and facilitate the transfer of knowledge between scientific and economic actors.*

Originality of the study. *The entire value co-creation process is examined, as well as both sides of university-industry collaboration are considered simultaneously. A conceptual framework consisting of building blocks and contextual layers is proposed drawing on the Service-Dominant logic perspective.*

Key words: *University-industry collaboration; value co-creation; S-D logic; R&D projects; digital platforms; focus group*

[*] Full Professor of *Management* - University of Salerno - Italy
e-mail: fpolese@unisa.it

[•] Associate Professor of *Management* - University of Salerno - Italy
e-mail: mciasullo@unisa.it

[♠] Adjunct Professor - University of Salerno - Italy
e-mail: raffaellamontera@alice.it

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6

DOI 10.7433/SRECP.FP.2020.01

1. Introduction

In knowledge-based economy, University-Industry (U-I) collaboration have received significant attention from policymakers, practitioners and scholars (Chryssou, 2020). They have putted emphasis on the importance of the knowledge transfer and commercialization of academic research, actively debating around the evolution of university's traditional missions (teaching and research) (Etzkowitz, 2016). In this vein, companies and universities exchanging knowledge under the circumstances of global competition, economic instability, and rapid advancements in technology are recognized to play an increasingly vital role in both enhancements of their competitive advantage and innovation and socio-economic development of the national economies (Saad and Zawdie, 2011; Hemmert *et al.*, 2014).

Despite the growing interest in this topic, the state of knowledge remains quite fragmented and uncertain (Galán-Muros and Plewa, 2016). To begin, previous studies do not contribute to an explicit and specific conceptualization of U-I collaboration, in terms of what it is and what involves, hindering its properly definition and management (Perkmann *et al*., 2013). Moreover, literature has mainly investigated university-business relations based on valorization activities, emphasizing patents and licenses. Conversely, potential forms of cooperation involving critical domain to higher education institutions like research are poorly explored (Kitagawa and Lightowler, 2013). In addition, prior works are often limited to the outcomes of U-I collaboration without considering the factors that affect them from a holistic perspective (Ha and Kwon, 2016). The adoption of a limited analysis perspective is also confirmed by both scarce exploration of interaction channels used to collaborate and unbalanced focus on the academic side of U-I collaboration (Franco *et al.*, 2015).

Drawing on these gaps, the paper aims to shed light on the variety of contextual elements, dynamics, mechanisms, practices and resultant outcomes that frame knowledge exchanges between university and industry in the context of digital research projects. To this end, we provide a conceptual understanding and an empirical evidence of U-I collaboration by building on the Service Dominant (S-D) logic's notion of value as created through active and multi-actor interactions and integration of resources to define and deliver mutually valued outcomes (Prahalad and Ramaswamy, 2004; Perks *et al.*, 2012; Ramaswamy and Ozcan, 2014). According to this interpretative lens, the following research question is arisen:

RQ: *How university and industry co-create value when collaborating in digital research projects?*

To address the paper purpose, the interplay among resources, interactions, outcomes, shaping the contextual elements affecting value co-creation process are investigated. By focus group interviews with Italian industry practitioners and university researchers in the context of digital research projects a deep empirical analysis is performed. In doing so, we contribute to an in-depth understanding of U-I collaboration in two ways. First, our study complements previous research by broadening the research focus to the entire value co-creation process and both sides of U-I collaboration accomplishing efforts of comprehensive analysis of phenomenon. Second, the insights gained from such investigation are relevant from a concrete point of view in terms of practical actions for developing successful research collaboration and facilitating the transfer of knowledge between economic and scientific actors.

The remainder of the paper is structured as follows. The theoretical background on the U-I collaboration and value co-creation process is established in the second section, in which a conceptual framework is proposed drawing on the relevant literature. A description of the research method follows. Findings related to how university and industry co-create value when collaborating in digital research projects are then discussed. Finally, theoretical and managerial implications, as well as directions for future research, are outlined.

2. Theoretical background

2.1 U-I collaboration

U-I interactions are commonly considered as "*a method of social cooperation, or a voluntary effort made by industrial entities and educational and research institutions to solve problems or issues of common interest cooperatively*" (Ha and Kwon, 2016, p. 2). The paper approaches U-I collaboration in the broad sense of any kind of formal and informal cooperative agreements initiated voluntarily for achieving common goals with a strong emphasis on joint creation of value towards mutual benefit.

U-I interactions include different cooperation activities dependent from the key mission of university with which they are associated. Regarding research activities herein studied, universities provide specific expertise or research results to businesses in return for money or practical experience for academics. Specifically, the temporary movement of teaching staff and researchers from universities to businesses, as well as those of employees, managers and researchers from businesses to universities represent relevant U-I research activities. They also comprise joint R&D activities, contract research, R&D consulting, cooperation in innovation, joint publications with firm scientists/researchers, joint supervision of theses (Bachelor, Master, PhD) or research projects conducted in cooperation with businesses (Cohen *et al.*, 2002; Galán-Muros and Plewa, 2016).

We focus on the specific case of R&D projects in the digital arena being a promising area for U-I collaboration given at least two reasons. First, the interdisciplinary nature of digital research allows to develop partnerships that transcend established subjects and can referred to a multiple fields of inquiry (Bharadwaj *et al.*, 2013). Second, the digital research goes beyond the traditional roles of university as provider of knowledge and industry as provider of funding and materials since both entities are enabled to transfer knowledge that supports innovation (Bozeman *et al*., 2013).

2.2 Value co-creation dynamics between U-I

To explore value co-creation in digital R&D project, the S-D logic is embraced. According to this interpretative lens, value co-creation is a complex process of resource integration activities that takes place in many to many interactions within and among multiple actors rather than dyadic relationships (Vargo and Lusch, 2016). In particular, resource integration occurs when actors' resources are joined for mutual benefit according to their expectations, needs and capacities, especially skills and knowledge (Gummesson and Mele, 2010).

The following sub-subsections describe the building blocks and contextual layers of value co-creation process between U-I (Fig. 1).

2.2.1 Building blocks of value co-creation process

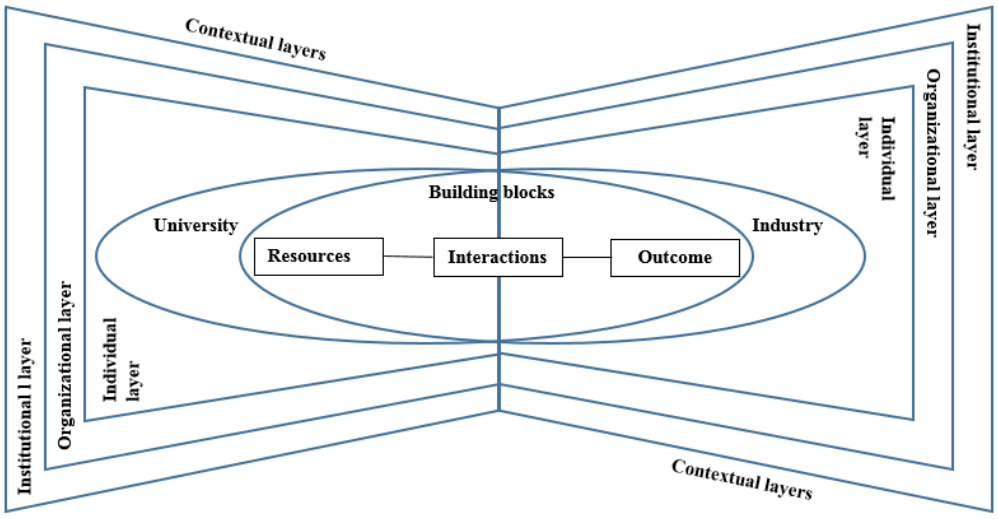
University and business are equipped with similar or different resources classified in tangible and static (operand resources) or processional and dynamic (operant resources) (Edvardsson *et al.*, 2011; Vargo and Lusch, 2011). In R&D collaboration, in particular, key resources are those operant such as human capital consisting of knowledge, competences, capabilities, skills, experience, and relationships shared by actors, despite materials and funding as operand resource also contribute to the project execution (Bozeman *et al.*, 2013; Perkmann *et al.*, 2013).

In U-I interactions, actors exchange resources and integrate them in the context of their reality (Prahalad and Ramaswamy, 2004; Vargo and Lusch, 2008) by means of platforms. In this regard, U-I interaction depends on collaboration formats established. There is a wide range of formats (e.g. simple, ad-hoc exchanges of advice, formal interactions) that are different in size (i.e. number of people involved) and scope but the aim to produce knowledge is their common trait (Perkmann *et al*., 2013; Bozeman *et al*., 2013). U-I interactions can be facilitated by physical and virtual platforms conceptualized as a series of touch points that let actors to connect with each other to

share information, transfer knowledge, enhance engagement, monitor incremental progresses of the project, and measure collaboration success. In other words, platforms help to develop multi-actor relationships contributing to overcame barriers in U-I collaboration related to differences between actors in terms of motivations, internal bureaucracy, languages, time horizons and daily activities (Siegel *et al.*, 2003; Bruneel *et al.*, 2010; Muscio and Pozzali, 2012). In practice, it happens that university fails to communicate effectively research results to industry, as well as business representatives fail to recognize the importance of research outputs. Thus, platforms act as bridge between academic and industrial actors in order to make interactions happening. Anyway, actors' cognitive alignment on project aims is a fundamental requisite for valuable U-I collaboration, despite the intermediation role of platforms.

University and business engage in resources' exchange and integration to achieve specific outcome from value co-creation in digital R&D projects. From one hand, the demonstration of academic research's impact and identification of alternative funding sources to undertake researches represent the most urgent benefits sought by university (Du *et al.*, 2014). From the other hand, industry is pushed by benefit to have access to leading-edge research being essential for improving its competitive advantage (Lambert and Enz, 2012).

Fig. 1: Value co-creation between U-I in digital research projects



Source: our elaboration

2.2.2 Contextual layers of value co-creation process

Context as set of actors and mutual links between them (Chandel and Vargo, 2011) surrounds and affects the building blocks of value co-creation process within U-I collaborations.

Focusing on research projects, context comprises individual collaborators at individual layer, collaborators' organizational home at organizational layer, policy and market at institutional layer (Bozeman *et al.*, 2013). With regard to individual layer, collaborators play simultaneous roles ranging from resource integrators and boundary spanners among project, organizational home, and wider industry or academic settings (Corsaro *et al.*, 2012). Collaborators' involvement in R&D projects and their collaborative behavior depend not only on previous interactions with the actors and experiences with projects but also on expectations created by organizational home's norms and values (Edvardsson *et al.*, 2011).

Regarding to organizational layer, university acts as knowledge broker between companies relying on established mechanisms to transmit a wide knowledge base (Agrawal and Henderson, 2002; Henard and McFadyen, 2006). Conversely, knowledge base of industry is limited to markets served and thus companies are reluctant to share it with other players (Un *et al.*, 2010; Du et *al.*,

2014). These different academic and managerial logics can trigger conflicting pressure between actors, so a successful collaboration risks to be compromised (Edmondson *et al.*, 2012).

With regard to institutional layer, scientific and business actors' efforts invested in a research project are influenced by national policies and attitudes to innovate in terms of funding allocation, level and rate of innovation (Janssen *et al.*, 2004; Perkmann *et al.*, 2013). Societal values also affect focus of project and actors' selection (Ngugi *et al.*, 2010).

3. Method

To understand how university and industry co-create value when collaborating in digital research projects, a qualitative research was conducted adopting a social constructionism approach. This was deemed appropriate for two reasons. First, it emphasizes that knowledge is constructed through interactions between actors within a social situation (Bauersfeld, 1995; Denzin and Lincoln, 2012). Second, this approach provides in-depth insights missing from other studies on this topic (Un *et al.*, 2010; Du et *al.*, 2014).

3.1 Data collection

Data were collected through focus groups aimed at collecting critical information on each single individual through the interaction of the group members (Frisina, 2010). In this sense, focus groups foster interactional dynamics suitable for a social constructionism-based reading (Potter, 1996).

Focus groups involved the first 30 participants from those readily available drawn from a heterogeneous set of Italian professionals identified through LinkedIn profiles. In particular, diverse participants belonging to both university and industry contexts were selected. From the university side, we contacted technology transfer functions and academics at various levels of career from established and new, public and private, traditional and telematics universities. From the industry side, entrepreneurs and managers from public/private organizations were identified. All participants were expert having R&D experience of at least 5 years in digital research. In order to permit the active participation of all the group members, participants were subdivided into full groups, that is, from 8 to 12 individuals (Marbach, 2010). Thus, 3 groups including 10 individuals were formed comprising equal number of industry and university participants that did not belong at the same institutions to avoid inhibited interactions.

Focus groups were made up over a three-month period, after preliminary testing with questions and stimuli and a previous examination of the suitability of one topic as compared to another (pilot focus group) (Kitzinger and Barbour, 1999). Group discussions of 90 to 120 minutes were performed via Skype in the presence of a moderator and an observer. A total of 12 group discussions were conducted, involving each group in 4 discussion sessions. Of these, the first 3 sessions were organized by discussion topics that were debated separately. They covered pre-established questions and sequence data but could be modified in the light of the ongoing dynamics of the groups (semi-structured focus group) (Zammuner, 2003). To begin, participants were asked to discuss on operant and operand resources needed for successful R&D project. Next, interactions that best support R&D collaboration were also explored, specifying types and platforms. Then, discussions treated the outcomes sought from collaboration. In conclusion, contextual influences (e.g., organizational rules or ways of working) on the efforts invested in R&D project were questioned. The final discussion session consisted of a debriefing in which participants were encouraged to reflect on the conversations occurred.

The answers were audio and video recorded, and notes were simultaneously taken by hand. To minimize the development of abnormal stress responses, the debriefing sessions were not recorded.

Regarding the institutional layers, a multitude of elements was considered such as non-governmental organizations (NGOs), government institutions, investment funds, technology transfer offices (TTOs), collective research centres, regional development agencies, incubators,

digital accelerators and science/technology/research parks, innovative start-ups, spin-offs, technological districts, online communities and social media platform, patents, learning technologies laboratory and virtual lab. Institutional layers were observed asking to participants to discuss if and how these elements influence the R&D collaborations. In particular, feedbacks from the university side allow to investigate the orientation to the academic entrepreneurship.

3.2 Data analysis

Data analysis was performed using a thematic analysis (Braun and Clarke, 2006; Bryman, 2012). To begin, the interviews were transcribed line by line and anonymized. In doing so, privacy of participants and strategic interests of their organizations were protected. Research team was involved in specific tasks: a couple separately coded the transcripts; a third researcher sampled the combined coding to check consistency and saturation of pattern matching and to ensure internal validity (Fereday and Muir-Cochrane, 2008).

At operational level, Krippendorff's (2004) systematic approach was used to carry out the coding process. Thus, data were inductively interrogated to identify emerging themes classified into the building blocks ('resources', 'interactions', and 'outcome' as labels) and contextual layers of value co-creation process ('individual layer', 'organizational layer' and 'institutional layer' as labels) according to the participant type ('academic' or 'practitioner' as labels).

4. Results

4.1 The building block of resources across the contextual layers

All participants report the need for research funding as operand resources to foster U-I collaborations. Different funding sources are mentioned: industry side typically seeks internal financial support, while university side tends to use third sources represented by industry partners or institutional layer such as research councils and commercial partners. For instance:

"Identifying the financial sources of each project is a must. In Italy, few public funds sustain research activities. Thus, the role of private sponsor is vital for R&D collaborations." [Participant 22, Academic];

"*There is an established awareness that we can rely mainly on our financial strength to innovate."* [Participant 13, Practitioner];

"*We do not exclude the interesting possibility for turning to business angels or other companies when we are not able to finance an innovative project with on our own financial strength.*" [Participant 3, Practitioner].

Hence, participants increasingly recognize the unique opportunity provided by joint projects to access operant resources such as different and complementary skills. From one hand, business can increase expertise in new fields accessing to a cutting-edge scientific knowledge used to create new advanced offerings and/or improve the existing ones. Moreover, through the access to university facilities, industry can improve recruitment efforts involving scientists, skilled students and graduates in its staff. From the other hand, university can in-depth know the industry and its problems, business expertise, and business sector R&D facilities to well orient the scientific research to transfer of knowledge to economic actors. In this regard, university adopting digital technologies (i.e., spin-offs, virtual labs, university website, social platforms, apps, etc.) have digital resources that play a critical role in developing entrepreneurial actions that attract new business relationships. For example:

"Our university has a careful consideration of digital technologies and many innovation and technology investments have been made and will made to open new channels and connections to firms and markets. We count on digital platforms that create an increased network effect, being open and viral." [Participant 20, Academic].

Thus, a range of necessary digital resources is identified to create new modes or improve existing ones to communicate each other's work. In the absence of digital technological infrastructures, the communication flow between U-I is not enough fluid because scientific research is published in journals hardly accessible to managers who mainly use free resources on the Internet. Moreover, academia may ignore valuable industry-based research due to the lack of quality signals equivalent to the academic peer-review system.

Participants also stress the need of advanced technical and technological capabilities. Specifically, collaborations in digital research projects require expertise associated with digitalization and consisting of ability to sense, capture and interpret data. Unsurprisingly, some universities have enriched their offering with digital entrepreneurial courses at different levels of education (bachelor courses, professional courses, master courses, Ph.D. programmers, summer and winter schools). For example:

"Our university has created a doctoral school in Data Science to create experts in the management of big data, and use advanced data analysis and machine learning methods in many industrial fields" [Participant 2, Academic];

"Nowadays, the lack of critical skills do not make an unfeasible project. Selecting the most adequate partners on the basis of their capabilities' relevance allows finding knowledge required to embark any project." [Participant 21, Practitioner];

"Communication skills are critical for development and success of U-I collaborations. Unfortunately, there is researchers' lack of training in communicating research findings outside of academic circles." [Participant 28, Academic].

"To really capitalize on R&D projects, we need people able to transform the data available on where the industry is going into valuable insights and actionable directives for university and industry." [Participant 9, Academic].

Resources' exchange and integration within U-I collaborations are affected by individual mindsets that support innovation and knowledge transfer, as well as by an organizational context where experimentation and risk taking are encouraged. For instance:

"My main characteristic is willing to learn from the others. Being able to listen, I ask for advice absorbing what helps my business to make money." [Participant 18, Practitioner];

"*Having space and time to think, people will express their creativity and new ideas will be developed. Organizations should not forget or underestimate this aspect to pursue innovative projects.*" [Participant 4, Academic].

4.2 The building block of interactions across the contextual layers

A successful value co-creation process depends on building stage of U-I collaboration characterized by moving from generic idea to definite project goals in response to specific needs of both actors and society. Participants report indeed the importance to achieve a balanced matching between innovative thinking and pragmatism. For instance:

"When university and industry interact, the innovative potential is very high. Anyway, the flow of ideas need to be controlled. It means that the entrepreneurial ideas and opportunity for translating them into useful and achievable research projects must achieve a compromise. If this occurs, a well-specified work project can also focus on unconventional ideas that often open the way to more radical innovations." [Participant 15, Academic];

"A strong and new idea is the starting point for establishing relationships with academic world. However, if this idea cannot be developed into a concrete research project with clear roles in the teams, then universities and businesses will not go anywhere." [Participant 3, Practitioner];

"Research project is the very specific contribution to solve a big problem without losing creativity." [Participant 10, Practitioner].

Another momentum critical to valuable U-I interactions is represented by development of trust among actors involved in project. Participants report their will to establish trusty relationships that allow effective collaborations. In this regard, digital technology is recognized as enabler of

continuous exchange information, real-time communication, and opportunity for jointly working on project remotely without geographical limitations. These opportunities provided by digitalization create the conditions to generate new knowledge that in turn fosters innovations. Contextually, the seamless information access and exchange between U-I nurtures transparency communication that creates trust between academic and business collaborators. For example:

"Digitalization has caused positive effects that would been impossible in the pre-digitalized state of the research projects. Digital platforms have become essential for fostering interactions based on mutual trust going beyond face to face meeting." [Participant 20, Academic];

"Technology has become an indispensable ally that supports the actors to work together and create close ties leveraging on connectivity." [Participant 8, Practitioner].

Addressing their efforts in building of trusted relationships, participants demonstrate a long-term vision: trust cannot be imposed externally neither achieved rapidly being the result of synergistic interactions based on goals' alignment that is nurtured over time. Shared purposes through harmonization of differing expectations facilitates U-I collaborations (Bekkers and Bodas Freitas, 2008; Bruneel *et al.*, 2010) as the potential for misalignment and conflicts between parties diminishes (Lee, 2011). This requires a genuine interest in interacting, an understanding of the interests of all actors involved in the project, easing the development and maintenance of mutually beneficial partnerships. For instance:

"Previous failed experiences have taught us that simple connections with industrial players do not automatically lead to joint projects. Shared purposes and strong commitment to cultivate relationships with reliable people are required to embark future collaborations." [Participant 27, Academic].

However, ways and motives for developing and maintaining relationships are affected by subjective preference on the actors with whom collaborate, legal barriers to co-creation in terms of intellectual property (IP)'s protection and bureaucracy of institutional bodies, as well as cultural barrier linked to different time horizons of working. For example:

"Being a lecturer at a small provincial university, I prefer collaborate with multinationals having high reputation in the field of research projects." [Participant 2, Academic];

"Bureaucratic red tape and frequent delays created by IP offices discourage us to start and continue projects with universities." [Participant 25, Practitioner];

"While academics are less accustomed to working in a time critical environment, businesses have to quickly run after changing customer needs to remain competitive. In other words, it is very difficult to collaborate across different sectors and disciplines." [Participant 30, Practitioner].

4.3 The building block of outcome across the contextual layers

Many beneficial outcomes arise from value co-creation in digital R&D projects. In particular, specific tangible and intangible benefits emerge for each actor involved in research collaborations. From the university side, benefits include the income generated from the collaboration and from any resulting or follow-on projects, including income from commercial exploitation of any IP, as well as the number of publications arising from the research. Interacting with industry, university also obtain intangible benefits such as new teaching materials and the identification of research avenues and priorities suggested by business actors. Thus, university can demonstrate the impact of scientific research on not exclusively academic audience, easily attracting major research funding. From the industry side, tangible benefits include an appropriate Return on Investment (RoI) through the value created from the innovation generated or other success measures like additional profit. Intangible benefits are related to the opportunity for accessing specialist academic expertise at little or no cost. For example:

"U-I projects are an effective way to validate theoretical concepts in real industrial settings. In doing so, we can teach with case studies and address our concerns of demonstrating the managerial and social implications of academic works and financing our research efforts." [Participant 24, Academic];

"Partnerships with university allows us to access a wider knowledge base without huge investments. If this knowledge is well leveraged, it leads to market innovations, enhanced competitiveness and better performance for my business." [Participant 26, Practitioner].

Mutual benefits of all participants arise from the subjective approach to problems based on complementary perspectives of actors. Researchers are indeed benefited from industry's practical view, while business players are benefited from university's theoretical view because *"mixing theory and practice is the more complete way to discover new problems and new solutions or to better solve old business problems with new solutions."* [Participant 17, Academic].

Anyway, organizational and institutional layers may exert negative influences on outcome of value co-creation in digital R&D projects. It occurs when project's goals are not aligned with organizational architecture or in the cases in which external sponsor limit the project scope to a specific outcome sought. For instance:

"We cannot share a project goal that does not lead to an immediate economic return of the project or compromise the existing revenue stream." [Participant 16, Practitioner].

"The type of work to perform depends on sponsor that invests into the project. We have to adapt to the sponsor's focus even if the problem is broader than what sponsor wants." [Participant 11, Academic].

"*An information symmetry is required at all levels of the organization. Otherwise, people do not assimilate the potential of digital in their specific functions and tasks."* [Participant 21, Practitioner].

5. Discussion

5.1 Theoretical and managerial implications

The paper purpose was to examine value co-creation within U-I collaborations in R&D projects in digital arena. Adopting S-D logic as interpretative lens, resources, interactions, and outcomes were analyzed across three contextual layers – in a process view – to provide a comprehensive understanding of value co-creation process between U-I.

Academia and business players co-create value in digital research projects by co-designing value propositions as results of synergistic interactions and dynamic processes of resource integration. Rereading the conceptual framework in the light of the findings, value co-creation is conceptualized as a process that affects the contextual layers in a circular and synergistic way.

In particular, individual layer is referred to the subjective dimension embracing the abilities of both university and industry and their propensity to technology adoption. Thus, intangible resources, mainly consisting of digital skills, are crucial and academia has to rethink its strategic orientation to trigger value co-creation processes with firms. Organizational layer is referred to the transformational mechanisms that allow co-creation of digital value in R&D projects. In fact, only when U-I act as active integrators, assimilators and transformers of knowledge, new practices and interactive modes emerge, generating new knowledge and thereby innovation. These new practices and interactive modes involve the social dimension, to which the institutional layer is referred. They produce new meanings, norms, rules and pay the way to a new entrepreneurial culture that shapes academy as entrepreneur in a digital ecosystem.

Research findings underline the importance of a U-I proximity that is reflected at various contextual layers given their strong interdependence. At individual layers, academia and business should be connected by a cognitive proximity in terms of values' alignment essential for achieving shared purposes. The cognitive proximity at individual layer led to a relational proximity at organizational layer, so that the mutual exchange and integration of resources in the U-I's reality exploit the potential of digital platforms. Cognitive and relational proximities represent the basis of the institutional proximity at institutional layer, where values' alignment and digital relationships

between academia and industry create and renovate an ongoing social and economic development in a specific context.

Drawing on results, some drivers are identified to foster the circular and synergistic process of value co-creation across the contextual layers. First, social capital represents a crucial operant resource that act on the value co-creation process in U-I collaborations' domain. In line with previous studies (Hitt *et al.*, 2003; Thune, 2007), in fact, familiarity, trust and norms of reciprocity, mutual understanding, and long-term commitment to co-creation have a significant and positive bearing on the establishment and management of U-I relationships. Thus, being difficult to co-create value between previously unconnected actors, the desirable practical action is to invest in building up social capital avoiding that is a deficient resource. Hence, social capital gives rise to the co-creation of value since it fosters generation and exploitation of knowledge, builds new resources and capabilities, and enhances interactional dynamics between academia and companies. Additionally, our results shed light on the role of social capital to lower barriers to value co-creation over time. Long-term linkages and the mutual trust between actors facilitate the reduction of problems related to the differences in universities' and businesses' orientation, intellectual property conflicts and contract management (Canter *et al.*, 2017; Garcia *et al.*, 2018). In this vein, institutions act as fundamental coordinating mechanisms that inspire direct and indirect interactions through institutional arrangements, created and recreated through actor's agency. They enable or constrain value co-creation, guiding resource integration and service exchange among actors.

Second, given that value co-creation is not lied in the technological architecture *per se* but in its use, a platform approach (Thomas *et al.*, 2014), that combines digital technology tools and socio-technical systems, is required. This approach champions the digital interactional dynamics during all project's stages because it offers communication and users' feedback, collaboration and computing capabilities (Nambisan, 2017) that enable organizational integration and reciprocity among academic and industrial collaborators. Within such approach, digital platforms play the role of enabler of value co-creation process between U-I. In line with Soendergaard *et al.* (2015), we find that digital platforms act as intermediary services that help universities and companies to develop and maintain multilateral interactions supporting joint researches. In doing so, digital platforms become innomediary (Mele and Russo-Spena, 2015; Ciasullo, 2018) that, bridging academia and business actors, promote and diffuse innovation as result of value co-creation process between U-I. In addition, digital platforms contribute to reduce the value co-creation barriers linked to the generally small amount of funding for R&D projects because U-I collaborations in a virtual space offers resource savings on both sides. Moreover, connection barriers (Galán-Muros and Plewa, 2016) also become lower since platforms can support U-I in many directions. To begin, they can assist in a more effective identification strategy of actors to involve in co-creation, for instance mapping them with complementary resources and common interests. Then, platforms can help to disseminate awareness of collaboration opportunities across the globe, diminishing the importance of geographical proximity between the actors (Laursen *et al.*, 2011; D'Este *et al.*, 2013). In sum, digital platforms can be viewed as transformative resources which enhancing actor engagement providing access and engagement opportunities for generating new knowledge able to foster innovation (Wieland *et al*., 2012; Storbacka *et al.*, 2016). Hence, platform approach – expressed by the adoption of integrated set of digital platforms and proactive involvement of users – reveals itself an ideal approach not only to conclude successfully a research project but also to build long-term collaborative research programme and finally to contribute to the emergence of university digital ecosystem. In this vein, a system-based perspective (Barile and Polese, 2010; Meynhardt *et al.*, 2016) can contribute to foster a service-based logic according to self-contained and self-adjusting collections of social and economic actors sharing institutional arrangements. Moreover, a system-based perspective can provide organizational structures and principles that facilitate the exchange and integration of resources and, in so doing, the co-creation of value-in-use with and among actors.

5.2 Limitations and future research directions

This research contributes both theoretically and practically to the debate on value co-creation between U-I in the context of digital research projects.

From a theoretical perspective, the paper enriches the scientific debate on the digital academic entrepreneurship. This is an emerging research area because today's universities are expected not only to provide knowledge-intensive outputs but also to contribute to economic growth and regional development through start-ups and spin-offs by levering on the rapid acceleration of digital technologies (Rippa and Secundo, 2019).

Additionally, the paper extends the previous relevant literature broadening the research focus to the entire value co-creation process and both sides of U-I collaboration accomplishing efforts of holistic analysis of phenomenon. More in depth, it allowed to better understand both the holistic view and the analysis of individual elements as well as their relationships exploring the main drivers that foster or inhibit value co-creation. In doing so, a SD logic-related midrange theory is developed (Vargo and Lusch, 2017) through a theoretical framework that breaks down the complex process of value co-creation into building blocks and contextual layers, shedding more light on the multi-actor interactions.

From a practical point of view, some engagement activities are suggested to develop successful research collaboration and facilitate the transfer of knowledge among and between economic and scientific actors.

Although these valuable contributions, our paper has some limitations that provide avenues for future research.

On the empirical side, U-I interactions are observed within digital R&D projects, excluding other types of cooperation activities. Future studies could unpack the various collaborative projects that U-I engage in, exploring if the interactions, resources, and outcomes across the contextual layers varies by different kinds of projects. The focus group technique also presents some risks that should be considered in the design of future research. First, the crucial role of the moderator in directing the discussion group is a potential source of bias. Second, group interviews push the participants to focus only on the positive aspects of value co-creation, making socially undesirable the discussion on personal benefits gained and criticism referred to collaboration.

Regarding to findings, a higher number of focus group interviewees and a wider geographic location of the study could improve the generalizability of research results. Moreover, this study has highlighted tangible and intangible outcomes of value co-creation but more effective performance metrics need to be developed, as well as measures that adequately capture the broader implications of undertaking research collaborations between U-I (e.g. people development, change in employability of students, etc.).

From a policy perspective, possible actions for the development of successful R&D projects between U-I are identified. Despite their importance since they are suggested by empirical evidence, one-size-fits-all actions do not exist. Thus, there is need for tailoring the actions to the different project that depend on characteristics of researchers in different scientific fields and business players in different industry. Neglecting these differences, standardized actions may reveal neither appropriate nor effective within a specific U-I collaboration.

References

AGRAWAL A., HENDERSON R. (2002), "Putting patents in context: Exploring knowledge transfer from MIT", *Management Science*, vol. 48, n. 1, pp. 44-60.

BARILE S., POLESE F. (2010), "Smart service systems and viable service systems: Applyng system theory to service science", *Service Science*, vol. 2, n. 1-2, pp. 21-40.

BAUERSFELD H. (1995), "Language games' in the mathematics classroom: Their function and their Effects", in P. COBB, H. BAUERSFELD (Eds.), *The emergence of mathematical meaning: Interaction in classroom cultures*, Hillsdale, US-NJ: Lawrence Erlbaum: pp. 211-292.

BEKKERS R., BODAS FREITAS I.M. (2008), "Analysing knowledge transfer channels between universities and industry: to what degree do sectors also matter?", *Research Policy*, vol. 37, n. 10, pp. 1837-1853.
BHARADWAJ A., EL SAWY O.A., PAVLOU P.A., VENKATRAMAN N. (2013), "Digital business strategy: Toward a next generation of insights", *MIS Quarterly*, vol. 37, n. 2, pp. 471-482.
BOZEMAN B., FAY D., SLADE C. (2013), "Research collaboration in universities and academic entrepreneurship: The-state-of-the-art", *The Journal of Technology Transfer*, vol. 38, n. 1, pp. 1-67.
BRAUN V., CLARKE V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, vol. 3, n. 2, pp. 77-101.
BRUNEEL J., D'ESTE P., SALTER A. (2010), "Investigating the factors that diminish the barriers to university–industry collaboration", *Research Policy*, vol. 39, n. 7, pp. 858-868.
BRYMAN A. (2012), *Social research methods*, 4th Ed., Oxford: Oxford University Press.
CANTNER U., HINZMANN S., WOLF T. (2017), "The coevolution of innovative ties, proximity, and competencies: Toward a dynamic approach to innovation cooperation", in J. Glückler, E. Lazega, I. Hammer (Eds.), *Knowledge and networks. Knowledge and space*, pp. 337-372.
CHANDLER J.D., VARGO S.L. (2011), "Contextualization and value-in-context: How context frames exchange", *Marketing Theory*, vol. 11, n. 1, pp. 35-49.
CIASULLO M. (2018), "Service innovation in (Eco)System View. Towards a circular path of co-innovation", Giappichelli Editore, Torino.
CHRYSSOU C.E. (2020), "University-industry interactions in the Sultanate of Oman: Challenges and opportunities", *Industry and Higher Education*, pp. 1-16
COHEN W.M., NELSON R.R., WALSH J.P. (2002), "Links and impacts: The influence of public research on industrial R&D", *Management Science*, vol. 48, n. 1, pp. 1-23.
CORSARO D., RAMOS C., HENNEBERG S.C., NAUDÉ P. (2012), "The impact of network configurations on value constellations in business markets. The case of an innovation network", *Industrial Marketing Management*, vol. 41, n. 1, pp. 54-67.
D'ESTE P., GUY F., IAMMARINO S. (2013), "Shaping the formation of university–industry research collaborations: What type of proximity does really matter?", *Journal of Economic Geography*, vol. 13, n. 4, pp. 537-558.
DENZIN N.K., LINCOLN Y.S. (Eds.) (2012), *Strategies of qualitative inquiry*, 4th ed., London: Sage.
DU J., LETEN B., VANHAVERBEKE W. (2014), "Managing and measuring value co-creation in business-to-business relationships", *Research Policy*, vol. 43, n. 5, pp. 828-840.
EDMONDSON G., VALIGRA L., KENWARD M., HUDSON R.L., BELFIELD H. (2012), *Making industry-university partnerships work. Lessons from successful collaborations*, Science/Business/Innovation Board AISBL.
EDVARDSSON B., TRONVOLL B., GRUBER T. (2011), "Expanding understanding of service exchange and value co-creation: A social construction approach", *Journal of the Academy of Marketing Science*, vol. 39, n. 2, pp. 327-339.
ETZKOWITZ H. (2016), "The Entrepreneurial University: Vision and Metrics", *Industry and Higher Education*, vol. 30, n. 2, pp. 83-97.
FEREDAY J., MUIR-COCHRANE E. (2008), "Demonstrating rigour using thematic analysis: A hybrid approach of inductive and deductive coding and theme development", *Journal of Qualitative Methods*, vol. 5, n. 11, pp. 80-92.
FRANCO M., HAASE H. (2015), "University-industry cooperation: Researchers' motivations and interaction channels", *Journal of Engineering and Technology Management*, vol. 36, pp. 41-51.
FRISINA A. (2010), *Focus group: Una guida pratica*, Bologna: Il Mulino.
GALÁN-MUROS V., PLEWA C. (2016), "What drives and inhibits university-business cooperation in Europe? A comprehensive assessement", *R&D Management*, vol. 46, n. 2, pp. 369-382.
GARCIA R., ARAÚJO V., MASCARINI S., SANTOS E.G., COSTA A.R. (2018), "How the benefits, results and barriers of collaboration affect university engagement with industry", *Science and Public Policy*, vol. 46, n. 3, pp. 347-357.
GUMMESSON E., MELE C. (2010), "Marketing as value co-creation through network interaction and resource integration", *Journal of Business Market Management*, vol. 4, no. 4, pp. 181-198.
HA Y., KWON S. (2016), "A study on factors influencing the outcomes of university-industry collaborative activities focusing on the faculty's need for and engagement in university-industry collaborative activities", *Indian Journal of Science and Technology*, vol. 9, n. 46, pp. 1-8.
HEMMERT M., BSTIELER L., OKAMURO H. (2014), "Bridging the cultural divide: Trust formation in university-industry research collaborations in the US, Japan, and South Korea", *Technovation*, vol. 34, n. 10, pp. 605-616.
HENARD D.H., MCFADYEN M.A. (2006), "R&D knowledge is power", *Research-Technology Management*, vol. 49, n. 3, pp. 41-47.
HITT M.A., IRELAND R.D., SANTORO M. (2003), "Developing and managing strategic alliances, building social capital and creating value", in Ghobadian A., O'Regan N., Gallear D., Viney, H. (Eds.), *Strategy and Performance: Achieving Competitive Advantage in the Global Marketplace*, Palgrave Macmillan, Houndmills.
JANSSEN O., VLIERT E.V.D., WEST M. (2004). "The bright and dark sides of individual and group innovation: A special issue introduction", *Journal of Organizational Behavior*, vol. 25, n. 2, pp. 129-145.
KITAGAWA F., LIGHTOWLER C. (2013), "Knowledge exchange: A comparison of policies, strategies, and funding

incentives in English and Scottish higher education", *Research Evaluation*, vol. 22, n. 1, pp. 1-14.
KITZINGER J., BARBOUR R. (Eds.) (1999), *Developing focus group research: politics, theory and practice*, Sage, London.
LAMBERT D.M., ENZ M.G. (2012), "Managing and measuring value co-creation in business-to-business relationships", *Journal of Marketing Management*, vol. 28, n. 13/14, pp. 1588-1625.
LAURSEN K., REICHSTEIN T., SALTER A. (2011), "Exploring the effect of geographical proximity and university quality on university-industry collaboration in the United Kingdom", *Regional Studies*, vol. 45, n. 4, pp. 507-523.
MARBACH G. (2010), *Ricerche per il marketing*, 2th Ed., Torino: Utet.
MEYNHARDT T., CHANDLER J.D., STRATHOFF P. (2016), "Systemic principles of value co-creation: Synergetics of value and service ecosystems", *Journal of Business Research*, vol. 69, n. 8, pp. 2981-2989.
MELE C., RUSSO-SPENA T. (2015), "Innomediary agency and practices in shaping market innovation", *Industrial Marketing Management*, vol. 44, pp. 42-53.
MUSCIO A., POZZALI A. (2012), "The effects of cognitive distance in university-industry collaborations: Some evidence from Italian universities", *The Journal of Technology Transfer*, vol. 38, n. 4, pp. 486-508.
NAMBISAN, S. (2017), "Digital entrepreneurship: toward a digital technology perspective of entrepreneurship", *Entrepreneurship Theory and Practice*, vol. 41, n. 6, pp. 1029‑1055.
NGUGI I., JOHNSEN R.E., ERDELYI P. (2010), "Relational capabilities for value co-creation and innovation in SMEs", *Journal of Small Business and Enterprise Development*, vol. 17, n. 2, pp. 260-278.
PERKMANN M., TARTARI V., MCKELVEY M., AUTIO E., BROSTRÖM A., D'ESTE P., SOBRERO M. (2013), "Academic engagement and commercialisation: A review of the literature on university–industry relations", *Research Policy*, vol. 42, n. 2, pp. 423-442.
PERKS H., GRUBER T., EDVARDSSON B. (2012), "Co-creation in radical service innovation: A systematic analysis of microlevel processes", *Journal of Product Innovation Management*, vol. 29, n. 6, pp. 935-951.
POTTER J. (1996), *Representing reality: Discourse, rhetoric and social construction*. Sage: London.
PRAHALAD C., RAMASWAMY V. (2004), *The future of competition: Co-creating unique value with customers*, Boston, MA: HBS Press.
RAMASWAMY V., OZCAN K. (2014), *The co-creation paradigm*, Stanford University Press.
RIPPA P., SECUNDO G. (2019), "Digital academic entrepreneurship: The potential of digital technologies on academic entrepreneurship", *Technological Forecasting and Social Change*, vol. 146, pp. 900-911.
SAAD M., ZAWDIE G. (2011), "Introduction to special issue: The emerging role of universities in socio-economic development through knowledge networking", *Science and Public Policy*, vol. 38, n. 1, pp. 3-6.
SIEGEL D.S., WALDMAN D.A., ATWATER L.E., LINK A.N. (2003), "Commercial knowledge transfers from universities to firms: Improving the effectiveness of university–industry collaboration", *Journal of High Technology Management Research*, vol. 14, n. 1, pp. 111-133.
SOENDERGAARD H.A., BERGENHOLTZ C., ROSENDAHL J.C. (2015), "University-Industry collaboration: Drivers and barriers for going online", In Proceedings of DRUID Summer Conference, Rome, June 15-17, 2015.
STORBACKA K., BRODIE R.J., BÖHMANN T., MAGLIO P.P., NENONEN S. (2016), "Actor engagement as a microfoundation for value co-creation", *Journal of Business Research*, Vol. 69, n. 8, pp. 3008-3017.
THOMAS L.D., AUTIO E., GANN D.M. (2014), "Architectural leverage: Putting platforms in context", *Academy of Management Perspectives*, vol. 28, n. 2, pp. 198-219.
THUNE T. (2007), "University-industry collaboration: The network embeddedness approach", *Social and Public Policy*, vol. 34, n. 3, pp. 158-68.
UN C.A., CUERVO-CAZURRA A., ASAKAWA K. (2010), "R&D collaborations and product innovation", *Journal of Product Innovation Management*, vol. 27, n. 5, pp. 673-689.
VARGO S.L., LUSCH R.F. (2011), "It's all B2B…and beyond: Toward a systems perspective of the market", *Industrial Marketing Management*, vol. 40, n. 2, pp. 181-187.
VARGO S.L., LUSCH R.F. (2008), "Service-dominant logic: Continuing the evolution", *Journal of the Academy of Marketing Science*, vol. 36, n. 1, pp. 1-10.
VARGO S.L., LUSCH R.F. (2016), "Institutions and axioms: An extension and update of service-dominant logic", *Journal of the Academy of Marketing Science*, vol. 44, n. 1, pp. 5-23.
VARGO S.L., LUSCH R.F. (2017), "Service-dominant logic 2025", *International Journal of Research in Marketing*, vol. 34, n. 1, pp. 46-67.
ZAMMUNER V.L. (2003), *I focus group*, Bologna: Il Mulino.
WIELAND H., POLESE F., VARGO S.L., LUSCH R.F. (2012), "Toward a service (eco) systems perspective on value creation", *International Journal of Service Science, Management, Engineering, and Technology (IJSSMET)*, vol. 3, n. 3, pp. 12-25.

La co-creazione del valore e della conoscenza nei sistemi di servizio smart: le relazioni università-industria-governo-utenti come acceleratore di (co)-innovazione

FRANCESCO POLESE[*] PAOLA CASTELLANI[•] ORLANDO TROISI[♠] MARA GRIMALDI[**]

Abstract

Obiettivi. *Lo studio indaga le principali dimensioni abilitanti della co-innovazione, investigando i meccanismi che favoriscono la co-creazione di conoscenza e la co-creazione del valore, intesi come antecedenti per il co-sviluppo di insight innovativi. Gli obiettivi dello studio sono: 1) rilevare le diverse dimensioni abilitanti che attivano la co-creazione di conoscenza e, dunque, di valore, nei sistemi di servizi intelligenti; 2) esplorare come le differenti pratiche di co-creazione possano condurre dinamicamente alla nascita di diversi tipi di innovazione.*

Metodologia. *La ricerca empirica adotta un approccio qualitativo basato su uno studio di caso che, mediante la tecnica dell'analisi del contenuto, mira a studiare l'emersione dell'innovazione nel CTNA italiano (Cluster nazionale aerospazio) ed il ruolo rivestito dalle relazioni tra università-industria-governo-utenti nel co-sviluppo degli elementi innovativi.*

Risultati. *I risultati rivelano le caratteristiche sistematiche dell'innovazione e del miglioramento continuo nei sistemi di servizi intelligenti grazie alla classificazione delle differenti dimensioni abilitanti della co-creazione del valore e della conoscenza e dei differenti tipi di innovazione generati dalla collaborazione strategica tra imprese aerospaziali, Università, centri di ricerca, Pubblica Amministrazione e utenti/cittadini.*

Limiti della ricerca. *La principale limitazione del lavoro è associata alle limitate possibilità di generalizzazione derivanti dall'applicazione dell'analisi del contenuto, che potrebbe essere integrata con la conduzione di interviste semi-strutturate o osservazioni.*

Implicazioni. *Lo studio può essere considerato come un primo passo nell'investigazione dell'emersione dell'innovazione nei sistemi di servizi intelligenti, categorizzando i diversi meccanismi e pratiche che promuovono l'innovazione. Pertanto, i manager possono comprendere il "peso" di un determinato strumento tecnologico nei processi di co-creazione, differenziando i benefici che i vari partecipanti possono ottenere.*

Originalità dello studio. *Grazie alla proposta di una visione di sintesi, il lavoro rileva le dimensioni abilitanti per la co-innovazione (il "cosa") e il modo in cui queste possono essere combinate per creare nuove tecnologie, risorse, valori e (il "come"). In questo modo viene proposta una nuova concettualizzazione dell'innovazione.*

Parole chiave: *sistemi di servizio smart*; *co-creazione di valore; co-creazione di conoscenza; innovazione; innovazione di servizio; Cluster*

Objectives. *The work explores innovation emergence in smart service systems to conceptualize how knowledge co-creation (KCC) and value co-creation (VCC) can foster the co-development of innovative insights. The objectives of the study are: 1) to detect the different enabling dimensions that activate the co-creation of knowledge and, then, of value in smart service systems; 2) to explore how the co-creation practices can lead dynamically to the emergence of different innovation patterns.*

Methodology. *The empirical research adopts a qualitative approach based on a case study, performed through content analysis to investigate the development of innovation in the Italian CTNA (Italian acronym of National Cluster for Aerospace Technology) and the role played by the relationships university-industry-government-end-users-in the co-development of novelties.*

Findings. *The results reveal the systematic features of continuous innovation in smart service systems thanks to the elaboration of a framework that classifies the different types of innovation emerged in the Cluster thanks to the strategic collaboration between aerospace companies, Universities, research centres, Public Administration, users/citizens.*

Research limits. *The application of case study methodology does not permit any generalization of results and prevents the extension of the findings obtained to other contexts. Further research can integrate the results obtained in this work with observation and semi-structured interview.*

Implications. *The study can be considered as a further step in extending the body of knowledge on innovation emergence in smart service systems by categorizing the different mechanisms and practices fostering innovation. Hence, practitioners can enhance their understanding of the contribution of a given tool or platform to co-creation by differentiating the benefits that various participants can obtain*

Originality of the study. *Thanks to the proposition of a synthesis view, the work detects the enabling structural and systems dimensions for innovation (the "what") and the way in which these can be combined to create new technologies, resources, values and social rules (the "how" dimension). In this way, a new conceptualization of systems innovation is proposed.*

Key words: *smart service systems; value co-creation (VCC); knowledge co-creation (KCC); innovation; service innovation; Cluster*

[*] Ordinario di Economia e gestione delle imprese - Università degli Studi di Salerno - Italy
e-mail: fpolese@unisa.it

[•] Ricercatore di Economia e gestione delle imprese - Università degli Studi di Salerno - Italy
e-mail: otroisi@unisa.it

[♠] Ricercatore di Economia e gestione delle imprese - Università degli Studi di Verona - Italy
e-mail: paola.castellani@univr.it

[**] Dottorato di ricerca in Marketing e Comunicazione - Università degli Studi di Salerno - Italy
e-mail: margrimaldi@unisa.it

1. Introduzione

Nell'era dell'Industria 4.0, le tecnologie smart ridefiniscono costantemente i mercati, arricchendo e moltiplicando le possibilità per le imprese di interagire, comunicare più velocemente e in modo trasparente con i propri stakeholder e di raccogliere al contempo enormi quantità di dati (Lee *et al.*, 2014). Le attività di raccolta sistematica di dati, che consentono di acquisire e creare continuamente nuovo valore e conoscenza (Kieliszewski e Anderson, 2019), implicano la necessità di rimodellare le organizzazioni secondo una visione sistemica in cui la condivisione e l'integrazione delle risorse siano mediate attraverso la tecnologia al fine di promuovere il co-sviluppo (*co-development*) di nuove idee.

In seguito all'avvento della digitalizzazione, le aziende sono state ri-concettualizzate nella letteratura sui servizi come sistemi di servizi intelligenti (*smart service systems*, Lim *et al.*, 2016; Lim e Maglio, 2019), allo scopo di mettere a punto una nozione che tenga conto della maggiore connettività che accelera e migliora la condivisione delle informazioni e offre l'opportunità di analizzare i dati migliorando le opportunità di innovazione (Medina-Borja, 2015; Spohrer e Demirkan, 2015).

Sulla scorta della relazione tra co-creazione del valore (*value co-creation*, VCC) ed innovazione (Storbacka *et al.*, 2016; Lusch e Nambisan, 2015), il presente lavoro intende rileggere le imprese contemporanee come sistemi di servizio smart, fondati su interconnessi processi cooperativi di co-creazione di valore e co-innovazione (Romero e Molina, 2011), attraverso i quali le capacità reciproche degli attori sono incrementate (Cassia *et al.*, 2015) ed i rischi, le risorse e responsabilità sono condivise in vista della co-produzione di comuni proposte di valore (*value proposition*, Romero e Molina 2009).

Pertanto, la co-innovazione è un fenomeno complesso in cui le idee o gli spunti innovativi provenienti da varie fonti interne ed esterne alle aziende vengono tradotti in pratiche per creare nuovo valore, conoscenza ed esperienza, di cui possano beneficiare tutti gli attori in gioco, compresi gli utenti, le altre imprese private, le organizzazioni pubbliche e non-profit (Von Hippel *et al.*, 2011) e i centri di ricerca. La co-creazione di innovazione si basa sulla generazione in modelli di impresa aperti di co-sviluppo di idee innovative da parte di clienti, istituzioni, sistema universitario e della ricerca e associazioni coinvolti in tutte le attività di innovazione, dalla generazione di idee alla prototipazione (Nambisan, 2002), che intercettano le cangianti esigenze del mercato ipercompetitivo dell'era 4.0.

Nonostante l'impatto riconosciuto della tecnologia sulla diffusione dell'innovazione, i precedenti contributi sull'innovazione di servizio spostano gradualmente l'attenzione dallo studio della "mera" innovazione tecnologica, quindi di prodotto-servizio-processo (OCSE, 2005), all' adozione di un orientamento sistemico (Vargo *et al.*, 2015) che identifica la necessità di integrare la dimensione tecnologica con il lato umano e sociale dell'innovazione.

Dunque, la tecnologia in sé - ed il suo uso acritico- non consente l'ottenimento automatico dell'innovazione: solo attraverso l'applicazione consapevole delle abilità e della conoscenza umane, questa può essere realizzata con successo.

L'urgenza di esplorare la dimensione umana, culturale e sociale alla base del cambiamento tecnologico può essere affrontata attraverso le chiavi di lettura offerte dalla scienza dei servizi (*Service Science*, detta anche *Service science, Management, Engineering, and Design*, *SSMED*, Spohrer *et al.*, 2007; Maglio e Spohrer, 2008). Difatti, il concetto di sistema di servizio intelligente (Barile e Polese, 2010) sembra essere adatto per esaminare in profondità come l'innovazione può essere perseguita sistematicamente grazie alle nuove tecnologie e al potenziamento del flusso di informazioni che, attraverso meccanismi basati sull'apprendimento (Lim e Maglio, 2019), possono dare vita a nuove conoscenze e a più ampie trasformazioni sociali.

In tali contesti organizzativi, gli utenti che cercano attivamente di stimolare l'innovazione sono definiti "lead users" e il loro apporto principale è conoscitivo, tant'è che si parla di *knowledge co-creation* (KCC, Prahalad e Ramaswamy, 2003; Hsieh e Chen 2005; Von Hippel 2005). La co-creazione delle conoscenze (*knowledge co-creation*) prevede l'analisi, il trasferimento, la

combinazione e la creazione di conoscenza (Su *et al.,* 2016) ottenuta dall'apporto di risorse conoscitive uniche da parte di una serie di attori ai processi di co-creazione del valore. Grazie all'integrazione di differenti capacità, ciascuno stakeholder può fornire la giusta varietà per stimolare la generazione di nuove conoscenze, sviluppare nuove idee per il cambiamento organizzativo, il miglioramento dei servizi o la realizzazione di nuovi prodotti (Arikan, 2009), abilitando, così la co-creazione del valore (Acharya *et al.,* 2018). Dunque, l'acquisizione, applicazione e assimilazione di conoscenze favoriscono attivamente l'emersione del valore e di nuove soluzioni co-create (Hakanen, 2014).

Ne consegue che diversi tipi di stakeholder, in svariati contesti di scambio, possono rilasciare molteplici risorse in termini di capacità e conoscenze, dando vita a differenti sfumature valoriali e, dunque, pratiche innovative (Yang e Chen, 2008). In tal senso, la co-creazione di conoscenze viene intesa quale fattore abilitante per la creazione congiunta del valore (Jaakkola and Alexander, 2014): diversi gradi di partecipazione degli utenti e scambi di conoscenze di varia intensità possono generare diversi ruoli di co-creazione (Acharya *et al.,* 2018).

Data la riconosciuta interconnessione tra co-creazione della conoscenza (KCC), co-creazione del valore (VCC) ed emersione dell'innovazione congiunta (*co-innovation*, Kohlbacher, 2008) negli attuali sistemi di servizio, l'obiettivo del lavoro è rivelare, in primo luogo, le dimensioni abilitanti chiave per la co-creazione di conoscenza e di valore, e di esplorare, in secondo luogo, come queste possano essere combinate dinamicamente attraverso relazioni tra più attori, processi di integrazione della conoscenza e scambi di pratiche per dare vita a nuove tecnologie, processi, strategie, valore (co-innovazione). Pertanto, il presente lavoro mira a rispondere alle seguenti domande di ricerca:

DR1 - quali sono le principali dimensioni dei sistemi di servizio smart che attivano la co-creazione di conoscenza (KCC) e di valore (VCC) nei sistemi di servizi intelligenti?

DR2 - come possono tali dimensioni abilitanti incoraggiare l'emersione della co-innovazione?

Lo studio consente così di adottare una prospettiva di sintesi che esplori non soltanto il "cosa", ovvero i fattori abilitanti della co-creazione, ma che indaghi altresì il "come", cioè il modo in cui le risorse (tangibili e intangibili), osservate dapprima staticamente e strutturalmente, sono dinamicamente attivate, poi, per co-creare valore e innovazione.

L'articolo si basa su una ricerca empirica condotta sul CTNA, il Cluster tecnologico nazionale dell'aerospazio, allo scopo di rileggere tale aggregazione reticolare come una complessa rete di *smart service systems*, dunque di sub-sistemi che spaziano dal settore privato delle imprese aerospaziali fino ad arrivare al settore pubblico-istituzionale e alla comunità degli utenti. Dunque, i cluster sembrano essere il tipo di formazione reticolare più adatto per un'analisi dei meccanismi che abilitano l'innovazione, poiché fondati sulla creazione di reti collaborative, basate sul rapporto tra aziende private, organizzazioni pubbliche e sistema della ricerca, che mirano ad innalzare il vantaggio competitivo di un intero segmento di mercato, di un'intera industria o territorio attraverso l'emersione di nuove pratiche di creazione di valore.

L'analisi si avvale della metodologia dello studio di caso (Yin, 1994) ed adotta un approccio qualitativo basato sull'analisi del contenuto (Rositi, 1988; Losito, 1996). I risultati consentono di classificare i diversi fattori abilitanti (strutturali e sistemici) della co-creazione di valore, conoscenza ed innovazione (DR1) e di elaborare un diagramma che identifica i diversi outcome innovativi generati (DR2). Si introducono quindi degli spunti di ricerca che incoraggino gli studi successivi sul tema ad analizzare ulteriormente: 1) gli antecedenti della co-innovazione e le strategie chiave per gestire correttamente la loro combinazione (Akaka *et al.,* 2019); 2) il diverso "peso" assunto dalla condivisione delle conoscenze e dall'adozione delle tecnologie nello sviluppo di modalità di innovazione.

Il lavoro è strutturato come segue. Nella prima sezione sono discussi i principali risultati di una overview teorica sui fattori abilitanti per la co-creazione di valore, di conoscenze e l'innovazione nei sistemi di servizi smart. Viene poi descritta la procedura metodologica utilizzata per eseguire la

ricerca empirica attraverso un approccio qualitativo. In seguito, si discutono i risultati con la conseguente introduzione di un diagramma che classifica le diverse modalità di innovazione nei sistemi di servizi intelligenti. Infine, vengono discusse le conclusioni, le implicazioni e i limiti del lavoro.

2. Background teorico

Per affrontare il ruolo chiave delle tecnologie nei processi di ridefinizione dei mercati contemporanei, le più recenti teorie sui servizi ridefiniscono le organizzazioni come sistemi di servizi complessi che, grazie alle interazioni tra attori, potenziate da tecnologie intelligenti e TIC (tecnologie dell'informazione e della comunicazione), possono co-creare valore (Davis *et al.*, 2011).

In particolare, proponendo il concetto di *smart service system* (Barile e Polese, 2010; Lim *et al.*, 2016), la Service Science esplora l'impatto dei flussi informativi, così potenziati tramite la digitalizzazione, sulla co-creazione di valore per identificare i fattori che favoriscono l'innovazione sistematica.

Per questo motivo, risulta necessario definire preliminarmente il concetto di "sistema di servizo intelligente" (paragrafo 2.1) per poi esplorare i diversi approcci all'innovazione (paragrafo 2.2) adottati all'interno delle precedenti ricerche sul tema.

2.1 Dai service systems agli smart service systems: i principali driver per la co-creazione del valore e della conoscenza

La Service Science (Spohrer *et al.*, 2007) definisce le organizzazioni come sistemi di servizio, ovvero "configurazioni di co-creazione di valore derivanti da un insieme di persone, tecnologie, proposizioni di valore, che interagiscono con altri sistemi di servizio internamente ed esternamente attraverso informazioni condivise" (Spohrer *et al.*, 2008, p. 5).

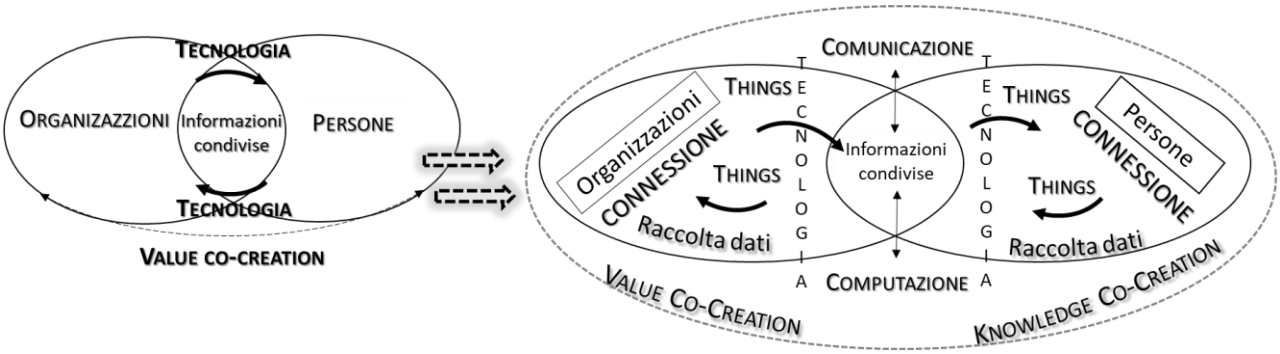
Con l'avvento della digitalizzazione, i sistemi di servizio vengono ribattezzati come sistemi di servizi smart (Barile e Polese, 2010; Lim *et al.*, 2016) in cui gli strumenti offerti dalle nuove tecnologie forniscono nuovi modi per accrescere la co-creazione del valore e, quindi, l'innovazione (Edvardsson *et al.*, 2014).

Le dimensioni principali dei sistemi di servizio (organizzazioni, persone, tecnologia, informazioni condivise) possono essere ridefinite attraverso l'applicazione di tecnologie intelligenti che migliorano l'automazione e la connettività, potenziando le interazioni e gli scambi di informazioni tra attori (Lim *et al.*, 2016). Gli smart service systems creano valore grazie alla sinergia derivante da alcune dimensioni rilevanti, le cosiddette "4C" (Lim e Maglio, 2019): 1) connessione (*connection*); 2) raccolta di dati (*data collection*); 3) comunicazione (*communication*); 4) calcolo (*computation*).

Come mostra la Figura 1, la reinterpretazione "smart" dei sistemi di servizio può essere concettualizzata tramite le seguenti proposizioni:

1. le interazioni organizzazioni-persone (connessione) sono rafforzate e intensificate grazie alla proliferazione dei punti di contatto con gli utenti e dei canali tecnologici (*things*-cose);
2. le informazioni scambiate sono condivise in modo immediato e trasparente (comunicazione);
3. le nuove tecnologie consentono la raccolta continua di dati (raccolta di dati);
4. i dati vengono analizzati mediante l'applicazione di tecniche di analisi (computazione) per agevolare, tramite un set integrato di analytics, la trasformazione dell'informazione in conoscenza (*knowledge co-creation*) e, dunque, in potenziale nuovo valore (*value co-creation*).

Fig. 1: Dai sistemi di servizio ai sistemi di servizio smart



Fonte: ns. elaborazioni

La combinazione dinamica e irripetibile delle dimensioni illustrate in Figura può dare vita alla co-creazione di valore e alla creazione sistematica di innovazione (Carrubbo *et al.,* 2015; Barile *et al.,* 2017) diffondendo nel sistema una costante "tensione" innovativa alla riconfigurazione e una spinta alla co-evoluzione e a processi circolari di miglioramento continuo (Baccarani *et al.,* 2015).

Pertanto, osservare il modo in cui gli attori interagiscono ed integrano risorse e conoscenze, mediante il tramite della tecnologia, consente di identificare i fattori abilitanti della nascita dell'innovazione (Acharya *et al.,* 2018). Come evidenziato da precedenti studi sul tema, risulta necessario così rilevare come i sistemi di servizi complessi siano potenziati attraverso il ruolo trasformativo delle nuove tecnologie e delle TIC (Breidbach e Maglio, 2016; Akaka *et al.,* 2019) per identificare i principali driver che, combinati dinamicamente, possano rilasciare innovazione (Frost and Lyons, 2017; Barile *et al.,* 2017).

2.2 L'emersione di diversi tipi di innovazione: una visione sistemica

Allo scopo di far luce sui potenziali outcome innovativi generati nei sistemi di servizio smart (DR2), appare indispensabile definire l'innovazione e le differenti declinazioni che questa può assumere all'interno e all'esterno delle organizzazioni.

L'innovazione è concepita tradizionalmente come il risultato di un nuovo o significativo miglioramento di prodotti, servizi o delle pratiche organizzative (OCSE, 2005). Pertanto, i risultati innovativi possono coinvolgere diverse aree e dipartimenti aziendali, dalla ricerca e sviluppo (R&S) alle operazioni e alla produzione, alla gestione delle risorse umane e al marketing. Gli studi classici distinguono una sfera interna ed una sfera esterna dell'innovazione, proponendo la differenza tra innovazione tecnologico-produttiva, focalizzata sui cambiamenti nel funzionamento dei processi, e l'innovazione dei mercati-clienti, derivante da nuove pratiche di gestione del rapporto con gli utenti (Abernathy e Clark, 1985; Sundbo, 1997).

Nel tempo, la prospettiva di analisi adottata per indagare l'innovazione - e, conseguentemente, la sua definizione- è stata ampliata fino a ricomprendere la dimensione umana e quella culturale che, insieme alla tecnologia, possono aumentare le possibilità di un'innovazione che ridefinisca a trecentosessanta gradi le attività e la cultura organizzativa.

Allo stesso tempo, gli studi sull'innovazione nella ricerca sui servizi spostano gradualmente la loro attenzione dall'analisi della "mera" innovazione tecnologica- quindi dell'introduzione di nuovi prodotti/servizi, processi, metodi organizzativi (Snyder *et al.,* 2016)- all'adozione di un orientamento di sistema (Vargo *et al.,* 2015).

Nonostante l'impatto riconosciuto della tecnologia sullo sviluppo dell'innovazione, è necessario indagare ulteriormente il ruolo della variabile umana e sociale all'interno dei processi tecnologici. L'impiego acritico e non strategicamente concepito degli strumenti tecnologici a disposizione delle imprese odierne non consente l'ottenimento automatico dell'innovazione: è piuttosto il modo in cui le persone impiegano attivamente tali strumenti attraverso lo scambio di

conoscenze (Maglio *et al.*, 2006) a favorire la nascita di strutture, prodotti o processi innovativi.

Pertanto, la ricerca sui servizi promuove uno slittamento di focus dall'innovazione tecnologica, che richiede sforzi tecnici e il coinvolgimento prevalente della sfera organizzativa interna delle imprese, all'innovazione orientata al cliente che coinvolge gli utenti nel co-sviluppo dell'innovazione e, successivamente, sottolinea la necessità dell'applicazione delle competenze e delle capacità umane in vista di un uso intelligente delle tecnologie.

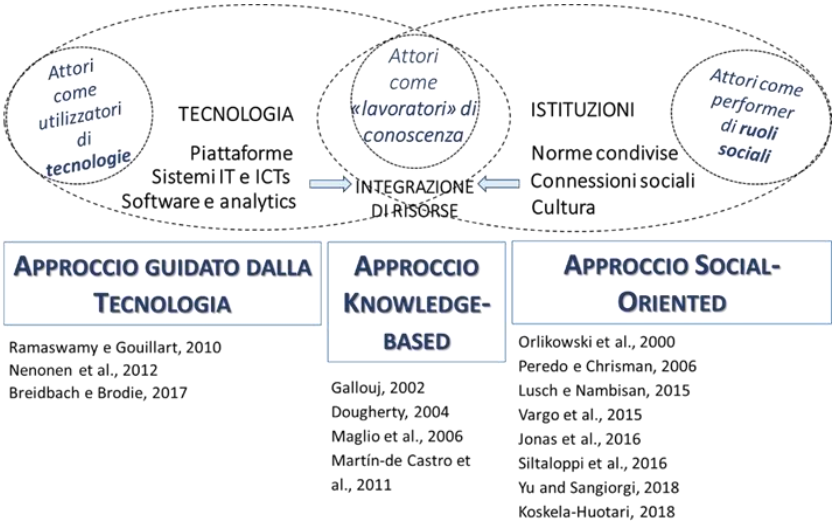
Come sintetizzato in Figura 2, nell'ambito del service marketing è possibile rintracciare la coesistenza di quattro diversi approcci (non opposti ma complementari) allo studio dell'innovazione: 1) approccio guidato dalla tecnologia (*technology-driven*); 2) approccio basato sulla conoscenza (*knowledge-based*); 3) approccio orientato al sociale (*social-oriented*).

Nel primo approccio, le tecnologie sono considerate le principali leve per consentire la co-creazione e, quindi, l'innovazione (Löbler e Lusch, 2014). Gli strumenti tecnologici sono definiti da un punto di vista strutturale attraverso alcuni criteri come trasparenza, accessibilità, adattabilità ai cambiamenti interni (Ramaswamy e Gouillart, 2010) e sono intesi come motori necessari per l'innovazione (Neuhofer *et al.*, 2012; Breidbach e Brodie, 2017). Gli attori sono concepiti come meri "utilizzatori" della tecnologia e di una serie integrata di piattaforme, sistemi informatici, software di analisi dati che possono favorire e potenziare gli scambi di valore.

L'approccio basato sulla conoscenza concepisce la condivisione delle conoscenze degli attori come il motore essenziale per utilizzare la tecnologia in modo efficiente e per migliorare i servizi o crearne di nuovi. Pertanto, la necessità di percepire gli attori come *knowledge workers* (Maglio *et al.*, 2006, p.83) è concettualizzata per rileggere l'innovazione come un "collettivo che collega attori consapevoli" (Mele and Russo-Spena, 2019, p.125). La tecnologia è ancora un elemento centrale ma non è vista come un fattore abilitante unico, piuttosto come uno strumento (fisico) che abilita l'applicazione della conoscenza e come una variabile dipendente dal contesto che dovrebbe essere negoziata attraverso interazioni umane e integrazione delle risorse (Martín-de Castro *et al.*, 2011). (Mele e Russo-Spena, 2019; Piciocchi *et al.*, 2019).

Infine, secondo la prospettiva *social-oriented*, la sfera sociale dà forma alla co-creazione e crea innovazione. Questa visione sottolinea il ruolo delle variabili basate sul contesto e delle connessioni e dei ruoli sociali degli utenti nel determinare un uso efficace della tecnologia (Peredo e Chrisman, 2006; Lusch e Nambisan, 2015; Vargo *et al.*, 2015). La condivisione di regole, norme sociali, relazioni di potere e istituzioni possono modellare la co-creazione di valore e incoraggiare l'uso della tecnologia, dando vita a nuovi elementi sociali, pratiche (Orlikowski *et al.*, 2000) ma anche ad una cultura coesa fondata su nuovi significati e simboli (Siltaloppi *et al.*, 2016), predisponendo verso l'emersione di outcome sociali innovative (Baccarani e Cassia, 2017).

Fig. 2: L'emersione di diversi approcci e focus allo studio dell'innovazione nella letteratura sui servizi



Fonte: ns. elaborazioni

In linea con l'evoluzione della letteratura su discussa, è possibile notare come i meccanismi abilitanti dell'innovazione, così come gli outcome generati dai processi innovativi stessi, possano spaziare dall'introduzione di nuove tecnologie allo sviluppo di nuove conoscenze e norme sociali.

Per questo motivo, i contributi più recenti della ricerca sui sistemi di servizio (Piciocchi *et al.*, 2019) concettualizzano la necessità di adottare una visione trascendente (Lusch e Nambisan, 2015; Barrett *et al.,* 2015) che proponga una concezione ampia di innovazione volta ad integrare le diverse dimensioni identificate in Figura 2. L'innovazione di servizio viene concepita, così, come la combinazione di un insieme eterogeneo di risorse, da parte di molteplici attori in dati contesti (Lusch e Nambisan, 2015).

La prospettiva ecosistemica dell'innovazione è altresì sposata all'interno degli studi sul tema dell'imprenditorialità che, allo scopo di enfatizzare il ruolo giocato dalle relazioni multi-livello tra attori privati, pubblici, accademici e comunitari propongono il modello della tripla elica (*triple helix model*, Etzkowitz, 2003; Etzkowitz e Zhou, 2017), prima, e della quadrupla elica, poi (*quadruple helix model*, Carayannis e Campbell, 2009; Carayannis e Rakhmatullin, 2014) in cui alle relazioni "università-industria-governo" si aggiunge il ruolo degli utenti finali. Tali modelli concettualizzano la ridefinizione dei business model contemporanei in vista dell'emersione di un'innovazione che derivi dall'apporto conoscitivo congiunto derivante da una rete di relazioni tra stakeholder groups che scambiano diversi tipi di risorse.

Dunque, la scienza dei servizi e la letteratura sull'entrepreneurship sottolineano l'urgenza di formulare un meta-modello che in un'ottica di sintesi tenga conto dei meccanismi innovativi soggiacenti alle relazioni tra aziende private, Università, aziende pubbliche (governo) e utenti finali che attraversano i network-sistemi organizzativi contemporanei.

Tuttavia, nonostante la proposta di un approccio sistemico ed ecosistemico all'innovazione, vi è ancora la necessità di ulteriori ricerche che analizzino come le dimensioni abilitanti dell'innovazione, tecnologia in primis, possano ridefinire i "tradizionali" business models, le strategie, le pratiche organizzative (Wiersema, 2013) e di co-creazione del valore delle imprese.

Ne consegue che l'esplorazione dell'emersione dell'innovazione nei sistemi di servizi smart non può essere fondata solo sull'identificazione dei principali fattori abilitanti del nuovo valore e della nuova conoscenza co-creata (domanda di ricerca fondata sul "cosa", DR1), ma anche sul "come" questi elementi possano essere integrati (e gestiti) dinamicamente attraverso processi costanti di adattamento e riconfigurazione (domanda di ricerca fondata sul "come", DR2).

3. Metodologia

Alla luce degli obiettivi multidimensionali perseguiti e della natura induttiva delle domande di ricerca (fondate sulla ricerca del "cosa" e del "come" piuttosto che sulla ricerca di cause), il lavoro adotta un approccio qualitativo esplorativo basato su uno studio di caso realizzato mediante l'analisi del contenuto del terzo tipo (Losito, 1996), che consente di estrarre dai testi (l'unità di analisi) un minor numero di categorie e di rintracciare alcuni punti focali (Krippendorff, 2004) relativi alle differenti variabili indagate attraverso l'applicazione di criteri semantici stabiliti dal ricercatore.

L'approccio qualitativo risulta indispensabile nelle fasi preliminari di una ricerca in cui il fenomeno oggetto di studio è poco noto (Corbetta, 1999) o in cui le definizioni dei concetti o le relazioni tra questi ultimi siano inedite o non operativizzabili attraverso le variabili numeriche comunemente utilizzate. Tale approccio si basa sulla valorizzazione delle sfumature di significato di costrutti complessi (come la co-creazione di valore o la co-innovazione), per i quali non siano ancora sviluppati item o scale di misurazione negli studi precedenti.

La metodologia dello studio di caso (Yin, 1994) permette di esplorare in profondità l'unità di analisi fornendo la possibilità di indagare le dinamiche alla base di una singolo contesto di indagine attraverso una prospettiva olistica (Eisenhardt, 1989, Feagin *et al.,* 1991; Tellis, 1997) ed è considerata quindi adeguata per indagare concetti-variabili che si pongono a diversi livelli di analisi in diversi sub-sistemi organizzativi (di fornitura, produzione, consumo, ecc.) connessi l'uno con

l'altro mediante differenti modalità relazionali. La complessità nella definizione e nell'interpretazione dei diversi tipi di innovazione negli smart service systems richiede un approccio idiografico che permetta, dunque, di investigare nel dettaglio i meccanismi che regolano un dato contesto di studio e a tenere conto delle sfumature relazionali multilivello che occorrono nelle odierne imprese. L'innovazione, inoltre, è inquadrata come un fenomeno complesso ed emergente, derivante dalla co-creazione di nuove entità ed elementi inattesi. I concetti esaminati sono così necessariamente correlati alla rilevazione di valori e dimensioni "nascoste" sottostanti che i ricercatori non possono controllare facilmente (Yin, 2011) e in cui le sfumature di significato che consentono di ascrivere le diverse variabili a differenti categorie di analisi sono sfocati (Yin, 2011).

Il caso indagato è il Cluster tecnologico nazionale per l'aerospazio (CTNA), riletto come un complesso sistema di servizi smart che comprende una serie di sub-sistemi (si veda la Figura 4) di diversa natura e con differenti finalità (pubbliche, private, non-profit, comunitarie). Il CTNA è selezionato dai ricercatori come studio di caso alla luce della configurazione reticolare di tale forma aggregativa di imprese e dell'intrinseca vocazione innovativa del settore aerospaziale, che rientra tra i mercati che investono maggiormente in ricerca e sviluppo e innovazione (ACARE, 2017). Difatti, i cluster sono insiemi di aziende incorporate che avviano una collaborazione strategica tra gli attori per perseguire lo sviluppo tecnologico (Karlsson *et al.,* 2005) e aumentare le opportunità di innovazione e la competitività dell'intero segmento. Pertanto, i cluster si prestano adeguatamente ad un'analisi dell'impatto dello sviluppo tecnologico sull'innovazione e sull'espansione di un sistema di servizi oltre determinati limiti geografici. In particolare, l'industria aerospaziale italiana è al quarto posto per produttività e ricavi in Europa (dopo Francia, Regno Unito, Germania) con un fatturato di 13,5 miliardi di euro ed è il più grande settore manifatturiero in Italia nel segmento dei sistemi integrati ad alta tecnologia, con oltre 1.000 operatori (circa 800 piccole imprese, 150 università e 50 centri di ricerca).

3.1 Il disegno della ricerca

In linea con gli studi basati sulla Service Science, che considerano l'unità minima di analisi il sistema di servizio (Maglio e Spohrer, 2008), il Cluster è considerato come un insieme di sistemi di servizi integrati che interagiscono tra loro attraverso modalità di interazione, attività e strumenti tecnologici creando scambi multilivello.

Pertanto, in base agli elementi chiave dei sistemi di servizio e alle macro-dimensioni dell'innovazione introdotte nel paragrafo precedente, la scheda di analisi del contenuto (così come la discussione dei risultati nel paragrafo 4) è suddivisa in base alle variabili e sottodimensioni chiave riportate in Tabella 1.

Per ciò che concerne la prima domanda di ricerca, grazie all'identificazione delle principali dimensioni dei sistemi di servizio smart, si sono rintracciate delle macro-variabili guida per l'analisi del contenuto che rappresentano l'astrazione dei principali elementi archetipici dei sistemi di servizio e che fungono da dimensioni abilitanti per la co-creazione del valore e delle conoscenze.

Tali dimensioni sono: 1) attori; 2) attività; 3) risorse; 4) tecnologie; 5) ruoli. A partire dall'identificazione dei principali elementi degli smart service systems (si veda il paragrafo 2.1) ed in linea con gli studi della Service Science, è possibile rilevare che i sistemi di servizio intelligenti sono da intendersi quali network di *attori* che condividono e integrano *risorse* tangibili o intangibili per svolgere diverse *attività* (Beverungen *et al.,* 2019), potenziate dall'intensificazione dei punti di contatto o dei canali *tecnologici* (Maglio *et al.,* 2009) che consentono di raccogliere e analizzare dati che, attraverso l'applicazione di conoscenze e capacità rinnovate (*knowledge co-creation*), possono essere trasformati in nuovo valore (*value co-creation*, Lim and Maglio, 2018). In linea con la classica distinzione proposta all'interno del management strategico (Teece e Pisano, 1997) e della *resource-based view* (RBV, Penrose, 1959; Barney, 1991), si intendono le conoscenze, le capacità e le skills quali risorse "abilitanti" per la knoweldge co-creation, la cui attivazione può dar vita alle competenze che, se adeguate, abilitano l'emersione di pratiche di co-creazione del valore di successo.

Come notato negli studi che enfatizzano l'aspetto sociale della co-creazione del valore (Edvardsson *et al.*, 2011), il consolidamento della nuova conoscenza prodotta e l'assunzione di una nuova cultura rendono gli attori dei veri performer di *ruoli* sociali (Spohrer e Demirkan, 2015).

Sottodimensioni a parte sono gli outcome della co-creazione del valore e della conoscenza, indagati in quanto antecedenti della co-innovazione (DR2) indagati per rilevare i nuovi valori e le conoscenze prodotti all'interno del Cluster.

Per l'investigazione dei differenti tipi di co-innovazione nel CTNA (DR2, paragrafo 4.2), si sono impiegate invece le macro-dimensioni dell'innovazione ottenute a seguito della review sulla letteratura (riportata nel paragrafo 2.2), ovvero tecnologica, conoscitiva e sociale, intese come fattori abilitanti per l'emersione dell'innovazione, che di conseguenza viene rilevata in quanto esito della creazione di nuove tecnologie o prodotti-processi, nuove conoscenze, nuove norme sociali (outcome dell'innovazione).

Tab. 1: Domande di ricerca, variabili e sottodimensioni d'analisi

	Variabili	**Sottodimensioni**
DR1 **Indagine dei meccanismi che favoriscono la value co-creation e la knowledge co-creation nei sistemi di servizi smart**	Elementi abilitanti della co-creazione del valore (VCC) e della conoscenza (KCC)	Attori Attività Tecnologie Risorse Ruoli
	Outcome della KCC	Nuovi tipi di conoscenze generate
	Outcome della VCC	Nuovi tipi di valori generati
DR2 **Osservazione dei meccanismi che favoriscono l'emersione di (diversi tipi di) (co-)innovazione**	Macro-dimensioni dell'innovazione	Tecnologica Knowledge-based Sociale
	Outcome della co-innovazione	Nuove tecnologie, prodotti, servizi, processi Nuove conoscenze, strategie di business Nuove norme e prassi sociali

Fonte: ns. elaborazioni

3.2 La raccolta e l'analisi dei dati

L'iter di ricerca, condotto da tre ricercatori nell'arco di sei mesi (da giugno a dicembre 2019), è suddiviso in quattro fasi principali: 1) teorizzazione; 2) codifica; 3) classificazione; 4) concettualizzazione.

Nella prima fase (*teorizzazione*), a partire dalle variabili identificate per ciascuna delle domande di ricerca, si è elaborata una scheda di analisi (vedi Appendice) che funge da guida per i ricercatori durante gli step successivi di raccolta e analisi. In particolare, per la DR1, si sono identificate delle parole chiave che fungessero da indicatori per rilevare le dimensioni dei sistemi di servizio all'interno del cluster (attori, attività, risorse, ruoli, tecnologie), mentre per la DR2 si sono sviluppate delle parole chiave legate ai tre approcci all'innovazione (tecnologico, knowledge-based, sociale).

Come suggerito dalla letteratura sullo studio di caso, i dati secondari sono stati triangolati con più fonti per aumentare la robustezza e la qualità dell'indagine (Yin 2011), generare nuovi modelli e scoprire concettualizzazioni complementari (Dubois e Gadde, 2014) in modo abduttivo piuttosto che testare la teoria preesistente (Gummesson, 2017). Le principali fonti utilizzate per la raccolta dei dati sono: il sito web ufficiale del CTNA in tutte le sue sezioni, il sito web ufficiale dell'ACARE (Advisory Council for Aeronautics Research in Europe), i siti web dedicati ai singoli progetti, i principali documenti disponibili nei diversi siti Web come il "Piano strategico", la Vision del settore aerospazio, la "Strategic Research and Innovation Agenda" e le pagine ufficiali del CTNA su diversi social network (Twitter, YouTube, Facebook).

Nella fase di codifica, ciascun ricercatore ha ricondotto gli elementi ricorrenti rintracciati nei testi alle parole chiave identificate nella fase precedente e legate ai due costrutti oggetto d'analisi: 1) gli elementi degli ecosistemi di servizi; 2) i tre approcci all'innovazione (si veda la scheda di analisi, ovvero il questionario "sottoposto" ai testi oggetto d'analisi).

Attraverso un processo di substruzione (Dulock e Holzemer 1991), l'insieme iniziale delle parole chiave - utilizzate come linee guida per orientare la prima lettura dei testi - è stato rielaborato gradualmente al fine di essere adattato ai risultati emergenti durante l'esecuzione del processo. Nonostante la codifica di alcune variabili chiave, durante l'iter di raccolta e analisi dei dati nuove dimensioni/variabili o elementi inaspettati sono emersi, conducendo così alla rielaborazione delle categorie iniziali e all'introduzione di nuovi concetti (Addeo e Montesperelli, 2007).

Dopo aver codificato i dati estratti, dunque, nella terza fase (categorizzazione) questi sono classificati in modo indipendente dai ricercatori per pervenire all'identificazione di inedite categorie concettuali derivanti da continui rimandi tra processi deduttivi ed induttivi, generati a partire dalle macroaree che sono così continuamente riviste, ampliate, specificate e rielaborate mediante complessi cicli di interpretazione.

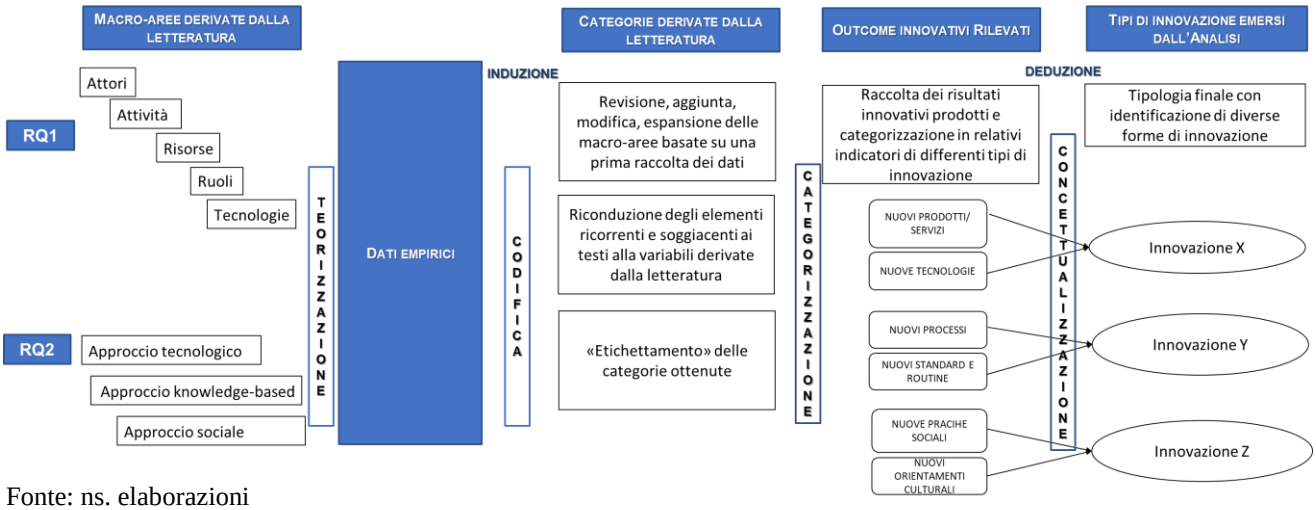
Infine, nella fase di concettualizzazione, le categorie concettuali ottenute sono rinominate sotto forma di costrutti teorici (es. innovazione di processo, innovazione data-driven, ecc.) per poter essere poi definite e schematizzate all'interno della tassonomia o in generale di una serie di modelli concettuali che aiutino a delinearne il significato e a tracciarne le differenze.

Le operazioni di classificazione delle variabili, di codifica delle parole chiave e di concettualizzazione e interpretazione dei risultati sono state eseguite da ogni singolo ricercatore separatamente e poi condivise con gli altri membri del gruppo di ricerca per approdare ad un'interpretazione comune dei risultati principali mediante una serie di controlli di coerenza e confronti tra i diversi schemi di codifica, classificazione e concettuali per identificare discrepanze e ottenere un quadro unico e finale.

Dunque, i risultati sono ottenuti tramite un'interpretazione semantica dei testi a partire dai quali le macrocategorie identificate dai ricercatori sono ricollegate alle principali variabili della ricerca e classificate per individuare gli elementi abilitanti degli smart service systems per la co-innovazione e le differenti pratiche di VCC, KCC (DR1) e innovazione (DR2) sviluppate nel CTNA.

In particolare, come mostra la figura 3, in primo luogo, grazie alla codifica, i dati empirici raccolti sono collegati induttivamente alle dimensioni abilitanti dell'innovazione (DR1) e ai vari tipi di innovazione (DR2) ottenuti dalla letteratura (macroaree). In secondo luogo, a partire dai dati rilevati si è operata deduttivamente una riclassificazione delle macroaree in categorie di secondo ordine (gli outcome dell'innovazione emersi nel CTNA), generati attraverso la fase di categorizzazione. Infine, nella fase di concettualizzazione, si ottengono nuovi concetti (i diversi "tipi" di innovazione generati nel cluster, raffigurati in Figura 7).

Fig. 3: Le fasi dell'analisi del contenuto: codifica, categorizzazione e classificazione di nuovi concetti



Fonte: ns. elaborazioni

4. I risultati

4.1 Il caso

Il Cluster tecnologico nazionale aerospazio (CTNA) è una rete di imprese nata nel 2012 che coinvolge soggetti privati (fornitori, subfornitori e fornitori complementari) e pubblici (pubblica amministrazione, università, centri di ricerca, agenzie o associazioni senza scopo di lucro).

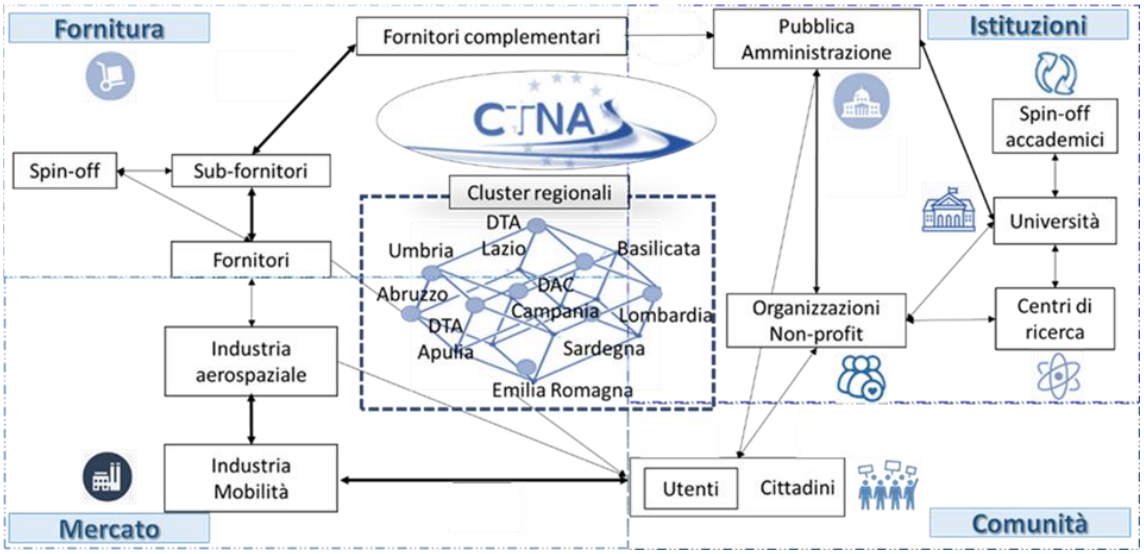
Il CTNA collega i principali attori del sistema aerospaziale nazionale e funge da catalizzatore e punto di convergenza delle diverse esigenze dei vari stakeholder per rafforzare la competitività dell'intero segmento e migliorare il suo posizionamento nei mercati europei e internazionali.

All'atto della sua costituzione, il CTNA indice una serie di progetti (quelli attivi al 2019 sono *Cruise*, *Flet 4.0*, *RPASinAir*, *Greening Propulsion*, *Tivano*, *Sapere*) che prevedono l'introduzione di soluzioni innovative a partire dagli sforzi congiunti tra industria, sistema universitario e della ricerca e che poggiano sulla valorizzazione dei giovani talenti, degli studenti, dei ricercatori e dei risultati della ricerca, dunque sull'investimento nelle persone e nelle competenze. Consulenti, docenti e ricercatori provenienti dai principali Atenei italiani e dai centri di ricerca nazionali divengono protagonisti del cambiamento e sono coinvolti all'interno di una serie di attività formative, volte a promuovere la competenza digitale e lo sviluppo dell'interesse verso le discipline scientifiche, rendendo al contempo attrattivo il mercato del lavoro nel comparto aerospaziale.

Nel rispetto delle linee guida promosse dalla normativa italiana ed europea (principalmente dal Consiglio consultivo per la ricerca aeronautica in Europa, ACARE, l'Agenzia spaziale europea, ESA, e il Programma Horizon 2020), il CTNA, che con la legge n. 123 del 3 Agosto 2017 è stato riconosciuto dal MIUR, si pone come strumento per il coordinamento delle politiche di ricerca industriale a livello nazionale e locale, avendo il compito di allineare le misure promosse a livello centrale e regionale ed agendo da supporto per lo sviluppo della competitività sul territorio con particolare attenzione al Mezzogiorno. I principali obiettivi ed i risultati ottenuti sono pubblicati a cadenza triennale in un Piano di Azione, documento chiave sugli scenari e le ambizioni della comunità aerospaziale italiana e sullo stato di avanzamento dei progetti e delle strategie di sviluppo delineate nelle Roadmap tecnologiche del cluster.

Come mostra la Figura 4, gli attori del Cluster sono stati classificati e suddivisi in quattro sub-sistemi principali, a seconda del tipo di stakeholder coinvolto e della natura delle connessioni. I differenti Cluster regionali sono al centro della rete e fungono da catalizzatore delle connessioni con quattro gruppi principali: 1) sistemi di fornitura; 2) industria aerospaziale e della mobilità; 3) utenti/cittadini finali; 4) pubblica amministrazione e organizzazioni no profit.

Fig. 4: I principali attori del CTNA: una classificazione



Fonte: ns. elaborazioni

I fornitori sono attori chiave nella produzione dei principali beni e servizi aerospaziali di aeromobili (militari e per il trasporto umano), di intelligence e di difesa. Possono essere suddivisi in tre diversi sistemi: 1) sub-fornitori: aziende o spin-off che forniscono componenti e/o offrono competenze legate a specifiche funzioni aziendali per l'aerospazio e l'aeronautica; 2) fornitori complementari: aziende specializzate in servizi collaterali, quali telecomunicazioni, servizi di satelliti (monitoraggio, comunicazione), geo-localizzazione; 3) industria aerospaziale-mobilità: l'intero mercato comprendente le altre aziende che operano nel settore aerospaziale e della mobilità (ferrovie, autobus, aeromobili, ecc.).

I Cluster regionali e i fornitori hanno rapporti con gli utenti, che possono essere intesi come clienti/cittadini che possono agire nel Cluster attraverso le associazioni dei consumatori.

Infine, il sistema comunitario dei cittadini e i Cluster regionali stringono relazioni con i seguenti attori istituzionali: 1) Pubblica Amministrazione (Ministro della ricerca e dell'istruzione, regioni e consigli regionali, comuni, ecc.); 2) organizzazioni non- profit; 3) università e spin-off accademici; 4) centri di ricerca. Nei paragrafi successivi (par. 4.2 e par. 4.3) si riportano i risultati ottenuti per ciascuna delle due domande di ricerca.

4.2 DR1: le dimensioni abilitanti della co-creazione di conoscenza e di valore

I risultati relativi alla prima domanda di ricerca sono discussi sulla base delle macro-variabili identificate nel paragrafo 3. In linea con gli attori chiave per lo sviluppo dell'innovazione identificati nel modello della quadrupla elica, i meccanismi innovativi del CTNA saranno discussi dapprima in riferimento ai sub-sistemi organizzativi (imprese private di fornitura e del settore aerospazio, organizzazioni pubbliche, sistema della ricerca, organizzazioni non-profit) e poi in riferimento al sub-sistema degli utenti-cittadini.

4.2.1 Industria- Università- Pubblica Amministrazione

Grazie allo sviluppo di una rete di relazioni multilivello, i Cluster regionali, la pubblica amministrazione, le organizzazioni non-profit, le università e i centri di ricerca collaborano per il miglioramento del benessere reciproco promuovendo lo scambio di conoscenze ed adottando un approccio "formativo" basando sul miglioramento continuo per i membri e dipendenti delle organizzazioni, per gli studenti e per l'intera comunità.

Lo sviluppo di attività educative è realizzato attraverso stage e tirocini, all'interno delle organizzazioni, e attraverso programmi di alta formazione, al di fuori delle organizzazioni. L'obiettivo è ridurre l'asimmetria tra i programmi di istruzione indetti normalmente da scuole e università e mondo del lavoro, al fine di promuovere, da un lato, le skills dei dipendenti e, dall'altro, le *digital skills* e la consapevolezza dei cittadini.

Per quanto riguarda le risorse umane, si perseguono sia l'arricchimento delle conoscenze della forza lavoro esistente sia la creazione di nuove figure professionali (tecnici, consulenti e ricercatori). Ad esempio, il Cluster sviluppa delle piattaforme di training (come *Morpheus*) che combinano realtà virtuale e mista per realizzare training per manutenzione e supporto tecnico per l'assemblaggio di sistemi e componenti complessi. L'obiettivo è offrire un'esperienza formativa totalizzante, orientata alla simulazione delle attività di manutenzione e operative che i tecnici e i nuovi dipendenti sono tenuti ad apprendere. Nella realizzazione della piattaforma sono state coinvolte PMI innovative, università e centri di ricerca. Parallelamente allo sviluppo di nuove tecnologie, sono state attuate una serie di attività di formazione volte a promuovere i sistemi di ricerca nazionali, insieme al miglioramento della competitività del settore, ricercato attraverso il rafforzamento della crescita dell'occupazione per l'intera comunità.

Le attività di formazione e il miglioramento delle conoscenze sono mirati all'arricchimento del sistema nazionale della ricerca, alla semplificazione dei flussi informativi e dei collegamenti tecnologici tra imprese, pubblica amministrazione e università. Nel dettaglio, nell'arco delle attività congiunte del Cluster sono sviluppati progetti di formazione e innovazione per studenti e ricercatori

aventi per oggetto tematiche relative alle nuove tecnologie, nonché corsi, master, scuole di specializzazione, dottorati e tirocini per la preparazione di profili tecnici (e non) altamente qualificati.

Dunque, il Cluster si fonda su una rete di relazioni ma soprattutto un network di cervelli che integra il know-how delle aziende con la cultura accademica e la ricerca scientifica per perseguire una continua tensione innovativa e integrare capacità, competenze, know-how, territori, persone in modo armonico per il raggiungimento di una competitività sostenibile.

Il CTNA organizza ogni anno una serie di attività di formazione che coinvolgono studenti di università, di scuole superiori e secondarie. Ad esempio, il Congresso Nazionale Scientifico dei Giovani offre ai bambini e agli adolescenti la possibilità di sviluppare conoscenze scientifiche nel settore aerospaziale e di aumentare il proprio interesse per la scienza, la tecnologia, l'ingegneria e la matematica. Inoltre, gli allievi possono imparare a lavorare in gruppo e a parlare in pubblico vivendo la vita dei ricercatori.

Inoltre, i principali player del Cluster (come Leonardo e Thales) organizzano una serie di laboratori per sviluppare la creatività degli studenti, spiegando loro la storia delle invenzioni o alcune nozioni di base sulla programmazione. Le collaborazioni con i centri di ricerca e l'università aiutano ad incrementare le capacità e le conoscenze degli attori in gioco in modo tale da consentirgli di sviluppare competenze distintive nell'uso delle tecnologie e possono migliorare non solo le capacità degli studenti ma anche aiutare gli insegnanti a essere più focalizzati sul proprio lavoro. Pertanto, le attività educative non accrescono solo le capacità e le conoscenze dei futuri dipendenti, favorendo una loro effettiva applicazione, ma contribuiscono anche a rafforzare il coinvolgimento dei lavoratori.

Lo scambio di conoscenze è reciproco e le imprese possono contribuire al rafforzamento delle skills dei centri di ricerca. Proprio grazie alla collaborazione con i grandi attori dell'industria aerospaziale, il CTNA ha introdotto un nuovo modo di avvicinarsi all'educazione volto a promuovere lo sviluppo di conoscenze trasversali che dovrebbero essere integrate con quelle tecniche, che, seppur essenziali, da sole non possono favorire l'innovazione sostenibile. Grazie alla sinergia tra i Cluster e le principali università del nord e del sud Italia, sono state promosse attività di ricerca per sviluppare nuove soluzioni per sistemi di propulsione e nuovi materiali ecosostenibili in grado di ridurre il ciclo di vita dei prodotti. Grazie al progetto *Flet 4.0* è stata implementata una serie integrata di nuove tecnologie a supporto della "smart maintenance" e della digitalizzazione della catena logistica che: 1) riducono e semplificano il carico di lavoro; 2) migliorano i flussi di informazioni nella catena di approvvigionamento; 3) migliorano l'infrastruttura MMI (Man-Machine Interface).

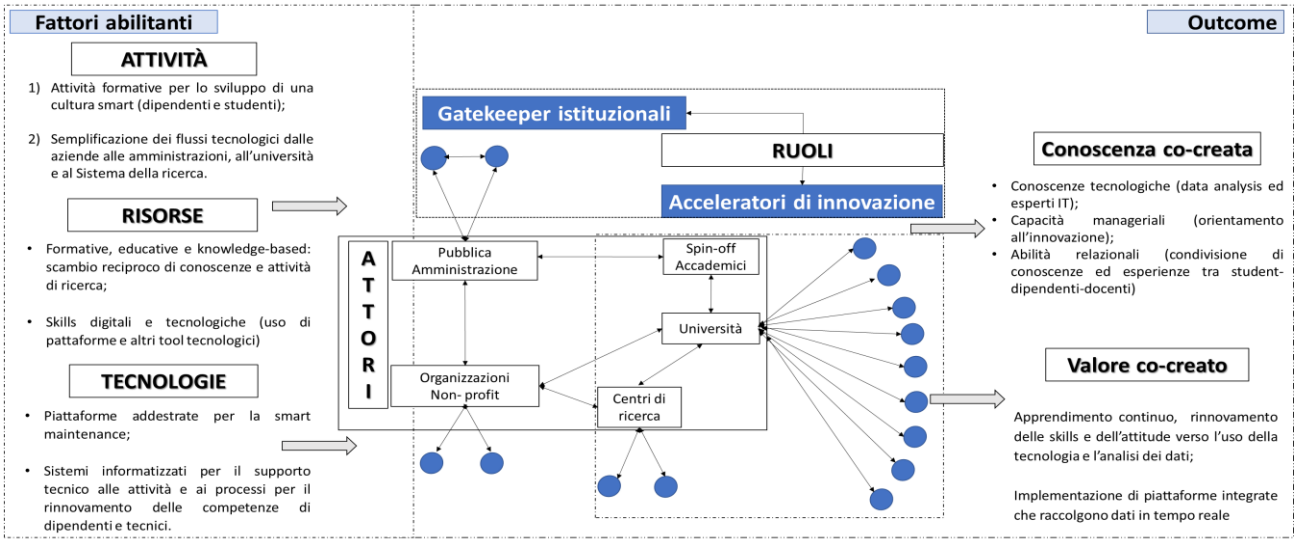
Pertanto, le principali risorse scambiate nelle relazioni tra Cluster, imprese e organizzazioni pubbliche sono educative e basate sulla conoscenza (*knowledge-based*), da un lato, e tecnologiche, dall'altro. Infatti, la formazione è il filo conduttore delle interazioni tra attori ed è realizzata attraverso il trasferimento delle *digital skills* (uso di piattaforme e altri strumenti tecnologici).

Pertanto, le conoscenze condivise con cittadini, studenti, dipendenti pubblici attraverso attività educative sono correlate a: 1) conoscenze tecnologiche (per formare analisti di dati ed esperti IT); 2) capacità manageriali, grazie alla diffusione di un orientamento all'innovazione; 3) capacità relazionali (nel condividere conoscenze ed esperienze, sia per insegnanti che per studenti). In questo modo, ai membri della comunità vengono forniti non solo gli strumenti per sviluppare le proprie abilità nell'uso intelligente delle tecnologie, ma anche una mentalità fondata sull'innovazione che può aiutare a superare le barriere digitali e a diffondere una cultura intelligente.

In termini di ruoli, la pubblica amministrazione e le organizzazioni senza fini di lucro nel Cluster possono essere considerate gatekeeper istituzionali, poiché influenzano la determinazione delle politiche nella rete e sono, a loro volta, influenzate dalle regole informali stabilite dal basso dai diversi attori. Pertanto, i gatekeeper istituzionali possono riflettere i valori dominanti di un determinato momento storico-culturale e, in base a questi, possono stabilire le linee guida per le attività del Cluster e allo stesso tempo riadattarle in base alle regole emergenti derivanti dalle relazioni di sistema.

Spin-off, università e centri di ricerca possono essere intesi come acceleratori dell'innovazione che abilitano lo sviluppo di processi di innovazione e la crescita condivisa della comunità grazie al costante impegno nello sviluppo di nuovi prodotti/processi, progetti di ricerca, trasferimento tecnologico, brevetti. La Figura 5 mostra le principali dimensioni abilitanti identificate nei rapporti tra imprese private, organizzazioni pubbliche, non-profit e il sistema accademico e della ricerca.

Fig. 5: Dimensioni abilitanti per il co-sviluppo di innovazione: pubblica amministrazione, ricerca, non-profit



Fonte: ns. elaborazioni

4.2.2 Utenti/cittadini

I Cluster regionali, i fornitori e le organizzazioni pubbliche sono interconnessi con gli utenti, che possono essere intesi come utenti/clienti o cittadini che agiscono nel Cluster attraverso le associazioni dei consumatori.

Le modalità di interazione tra attori sono mediate attraverso una serie di tecnologie integrate che migliorano i rapporti coi mercati di approvvigionamento, col mercato aerospaziale ed aeronautico per fornire agli utenti finali e all'intera comunità di cittadini tecnologie innovative volte a preservare l'ecocompatibilità, da un lato, e a perseguire la co-innovazione, dall'altro.

La prima sub-attività svolta di concerto con i vari attori del Cluster (eco-sostenibilità) mira a ridurre l'impatto ambientale nell'intero ciclo di vita di prodotti e servizi attraverso la proposta di architetture propulsive ibride, materie prime, processi a basso consumo energetico e sistemi avanzati per la manutenzione intelligente. Grazie allo sviluppo di una rete di attori con diverse abilità e conoscenze, in cui sono impegnati centri di ricerca e università nel loro ruolo chiave di acceleratori della co-innovazione, è favorita la creazione di nuovi materiali e tecnologie abilitanti che salvaguardano l'ambiente.

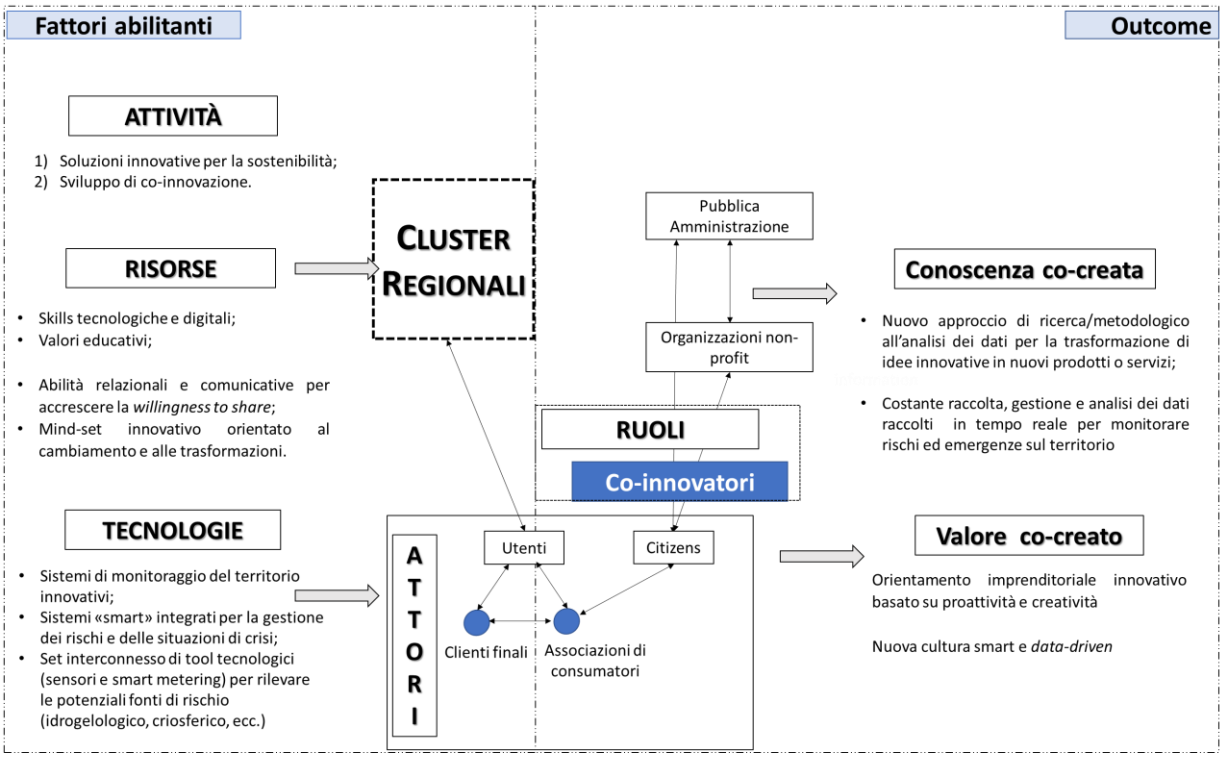
Le principali aree di intervento prevedono la realizzazione di: 1) sistemi ibridi di propulsione spaziale, con la creazione di strumenti di simulazione (progetto *Sapere*); 2) attività di progettazione e collaudo di propellenti ibridi innovativi, componenti ultracompatti e leggeri; 3) progressi tecnologici in aerodinamica, aero-elasticità e acustica per aumentare le prestazioni di turbine per motori e processi aeronautici (e-manufacturing) a basso impatto ambientale.

Pertanto, non solo vengono sviluppate tecnologie a ridotto impatto ambientale, ma vi è anche l'acquisizione di un know-how specifico nel campo della propulsione spaziale ibrida. Grazie a progetti ambientali condivisi, come *Greening the Propulsion e RPASinAir*, il Cluster cerca di preservare i territori e le persone che vivono in essi perseguendo un duplice obiettivo, sociale e ambientale, salvaguardando il pianeta e la qualità della vita per promuovere lo sviluppo del territorio.

Le attività ecosostenibili promuovono l'uso di tecnologie green ma contribuiscono anche ad aumentare la sicurezza degli utenti. Con riferimento all'obiettivo della sicurezza e della salvaguardia dei cittadini, il progetto *Tivano* garantisce la sicurezza degli utenti grazie ad un sistema di monitoraggio basato su laboratori di simulazione e sulla costante raccolta, gestione e analisi dei dati ottenuti dai RPAS (aeromobili con sistemi di pilotaggio remoti) in tempo reale per monitorare i territori e fornire loro informazioni sui rischi e emergenze. Mediante una serie di strumenti tecnologici interconnessi come sensori e contatori intelligenti, è possibile identificare le potenziali fonti di rischio idrogeologico e criosferico.

Gli aeromobili con pilotaggio remoto (RPAS) costituiscono lo strumento più intelligente per migliorare il monitoraggio dei territori, per prevenire le catastrofi ambientali e migliorare il trasferimento di risorse. Il sistema di monitoraggio innovativo introdotto dal lavoro congiunto dei principali fornitori del Cluster (Leonardo e Avio Aero) e di alcuni fornitori complementari (Thales e TeleSpazio) integra i dati raccolti da RPAS per identificare e prevedere i rischi e incoraggiare la prevenzione. Grazie a un progetto di factoring, il Cluster applica i principi del 4.0 alla catena di fornitura, raccogliendo dati sulle produzioni, memorizzandoli sul cloud, rendendoli sicuri e analizzandoli per studiare il funzionamento delle macchine, ottimizzando i processi nell'intera catena di approvvigionamento. La Figura 6 mostra le principali dimensioni abilitanti identificate nei rapporti tra Cluster e utenti.

Fig. 6: Co-sviluppo dell'innovazione: utenti/cittadini



Fonte: ns. elaborazioni

La seconda sub-attività (co-sviluppo dell'innovazione) viene svolta attraverso la diffusione di un orientamento all'innovazione che incoraggia la proposta di idee per nuovi progetti e servizi grazie all'impegno attivo di utenti e giovani studenti in una serie di progetti congiunti, eventi o concorsi.

Con il supporto attivo di Leonardo, il Cluster organizza hackathon annuali e premi per l'innovazione, dunque una serie di progetti di innovazione aperti che collegano i migliori talenti delle scuole superiori alle facoltà scientifiche delle principali università italiane. Gli studenti partecipano a una sfida in cui gli è chiesto di risolvere un caso aziendale e di presentare un progetto innovativo mostrando le proprie capacità di problem solving e l'attitudine al lavoro di squadra con

la costante supervisione di consulenti, esperti del settore e tutor (dottorandi, studenti universitari, ecc.). L'Hackathon è uno strumento che incoraggia l'innovazione promuovendo la complessa trasformazione delle idee in concetti e nuovi prodotti. Grazie all'interazione con gli studenti, le imprese comprendono come si evolve il sapere nel mondo contemporaneo. La stretta relazione tra partecipanti e tutor evidenzia che l'Hackathon è "una maratona di idee" che può stimolare l'innovazione da fonti esterne promuovendo, al contempo, le conoscenze dei dipendenti. Dunque, lo scambio di opinioni e la discussione con i giovani agisce da acceleratore di innovazione per l'intero Cluster, soprattutto in un'era in rapida evoluzione in cui l'innovazione è una priorità.

Le risorse scambiate sono essenzialmente tecnologiche e legate alla proposta di piattaforme per l'analisi dei dati che aumentino la sicurezza degli stessi e degli utenti. Inoltre, grazie al coinvolgimento degli utenti nei premi e concorsi per l'innovazione, una serie di risorse educative e relazionali sé fornita dai tutor e messa in gioco all'interno degli scambi di relazioni tra aziende-istituzioni, dipendenti ed utenti.

Grazie all'integrazione e alla combinazione di conoscenze tecnologiche, abilità relazionali e di innovazione, gli attori (dipendenti, tutor, supervisori, studenti e cittadini) sono impegnati attivamente nel co-sviluppo di nuovi servizi e nell'emersione di soluzioni innovative. Pertanto, il rafforzamento delle conoscenze riguarda principalmente: 1) l'aumento delle skills tecnologiche che migliorano l'uso effettivo delle tecnologie e accrescono il coinvolgimento degli utenti innalzando la propensione a scambiare conoscenze (*willingness to share*); 2) lo sviluppo di un orientamento imprenditoriale all'innovazione basato su di una nuova mentalità (*mind-set*) proattiva e creativa che stimoli continuamente la proposta di servizi innovativi; 3) l'adozione di un approccio metodologico all'analisi dei dati focalizzato sulla semplificazione del complesso processo che trasforma gli spunti innovativi in idee di business e in prodotti o servizi reali.

Gli utenti-cittadini, che siano dipendenti attuali, potenziali o clienti, rivestono il ruolo di co-innovatori, che possono essere considerati acceleratori dell'innovazione i quali, diversamente dalla pubblica amministrazione e dalle organizzazioni senza scopo di lucro, condividono risorse non economiche ma fondate sulla conoscenza, creatività, esperienza e sull'apporto di valori che migliorino i processi decisionali del Cluster, all'interno dei quali partecipano attivamente incentivando il co-sviluppo di innovazione sostenibile.

4.3 DR2: l'emersione di diverse sfumature di co-innovazione

Le entità innovative emerse nel CTNA sono state categorizzate al fine di classificare le differenti sfumature di innovazione co-create: 1) *innovazione tecnologica* (dimensione tecnologica); 2) *business model innovation* (dimensione knowledge-based); 3) *innovazione sociale* (dimensione sociale); 4) *practice-based innovation* (dimensione socioculturale). L'analisi dei dati portata a termine per investigare la DR2 conferma l'esistenza delle tre dimensioni abilitanti identificate in letteratura (tecnologica, knowledge-based, sociale) e introduce un nuovo tipo di dimensione, quella culturale che, mescolata alla sfera sociale, può dare vita allo sviluppo di nuove pratiche e al tipo più astratto di innovazione, ovvero la *practice-based innovation*.

Le diverse dimensioni, categorie e outcome dell'innovazione identificati nell'analisi del Cluster, tramite i processi di substruzione previsti dall'analisi del contenuto, sono descritti di seguito.

4.3.1 Innovazione tecnologica

L'innovazione tecnologica riguarda l'introduzione di nuove tecnologie per la realizzazione di materiali, componenti, prodotti (sistemi di propulsione) e servizi (satelliti) e il potenziamento dei sistemi di comunicazione (sistemi di monitoraggio basati su IT e TIC). Tale forma di innovazione è sviluppata nel CTNA grazie alla collaborazione congiunta tra fornitori, subfornitori e fornitori complementari e si riferisce principalmente alle relazioni B2B e alla sfera interna delle organizzazioni.

Oltre a materiali innovativi e ibridi (innovazione di prodotto), il Cluster propone nuove tecnologie per la comunicazione (innovazione di servizio), che compongono un insieme integrato di strumenti che migliora il sistema di monitoraggio (*Flet 4.0*) e di geolocalizzazione dei velivoli grazie alla telecomunicazione satellitare. Pertanto, la creazione di un sistema di tecnologie che supporta e affronta l'evoluzione tecnologica del mercato (sistemi di controllo di volo smart e metodologie di simulazione introdotte a seguito del progetto *RPASinAir*) può fornire al Custer la capacità di rinnovare costantemente prodotti e servizi, perseguendo l'innovazione sistematica e raggiungendo nel tempo un vantaggio competitivo sostenibile.

Inoltre, grazie al supporto attivo di fornitori complementari, la digitalizzazione della catena di approvvigionamento (innovazione di processo) viene realizzata attraverso sistemi di manutenzione intelligenti basati su nuove tecnologie (realtà aumentata, sensori e dispositivi wearable) che migliorano: 1) i flussi di materiali e prodotti-servizi (e-manufacturing); 2) i flussi informativi (comunicazione tra subfornitori e settore della mobilità generale).

Grazie ai processi di digitalizzazione implementati, il CTNA adotta una strategia integrata di gestione della supply chain, in cui le relazioni nella catena di approvvigionamento sono i fattori chiave per migliorare le prestazioni della rete di fornitura ed in cui la collaborazione è focalizzata sul miglioramento delle conoscenze e sull'eccellenza tecnologica dei fornitori derivante dalle relazioni di lunga data.

4.3.2 Business model innovation

Il miglioramento e l'ottimizzazione dei flussi di informazioni e dei materiali lungo la supply chain (innovazione di processo) consentono lo sviluppo dell'innovazione dei business model che ridefinisce le strategie e la formulazione degli obiettivi, la selezione delle risorse e la gestione delle relazioni grazie a una cultura basata sui dati che pervade le organizzazioni. In questo modo, l'emersione degli elementi innovativi arriva a ricomprendere le diverse dimensioni dei modelli di business. Sono generate nuove regole per creare *value propositions* (dunque per una *strategia* interiorizzata e tradotta in cultura coesa) condivise internamente ed esternamente (attraverso l'integrazione delle risorse), grazie all'ottimizzazione delle relazioni e delle operazioni (*gestione*), e trasformate in nuova conoscenza (miglioramento della qualità del servizio e *continuous improvement*).

Le motivazioni che guidano il processo di cambiamento nei modelli di business sono dovute alla volontà del Cluster di adeguarsi ai canoni della *disruptive innovation*, ridisegnando il modello per le relazioni nostra catena del valore. In tale processo, lo scambio di conoscenze tra fornitori, start-up, spin-off e il mondo accademico consente di integrare esperienze e skills per imparare ad adattarsi al ritmo rapido dell'evoluzione tecnologica nello scenario contemporaneo.

Tale mentalità innovativa collega gli elementi principali dei modelli di business (strategie, selezione delle risorse, gestione delle relazioni, ecc.) grazie a un orientamento ai dati che promuove la complessa transizione dallo sviluppo di insights innovativi alla generazione di idee alla realizzazione effettiva di nuovi prodotti e consente la trasformazione dei dati in informazioni e, quindi, nuova conoscenza (KCC) e valore (VCC).

4.3.3 Innovazione sociale

Lo sviluppo di nuovi orientamenti strategici e di una cultura (basata sui dati) promuove l'innovazione (sociale) che migliora, a sua volta, il benessere e introduce nuove pratiche ambientali (ecosostenibili).

Il coinvolgimento strategico dell'innovazione e della cultura dei dati nei processi aziendali (*business model*) si traduce nella creazione di una serie diversificata di strategie di innovazione che comportano: 1) il coinvolgimento attivo della ricerca e del sistema accademico nel Cluster per conferire nuove conoscenze alle risorse umane, agli studenti e ai cittadini incentivando il co-

sviluppo di soluzioni innovative (*social innovation*); 2) l'introduzione di nuove soluzioni ibride per salvaguardare l'ambiente (innovazione ecosostenibile).

L'innovazione sociale si sviluppa attraverso la proposta di nuovi standard per l'educazione e modelli per l'apprendimento e le skills digitali. Attraverso la collaborazione con università, centri di ricerca e laboratori, il Cluster mira ad aumentare le capacità e l'interesse verso l'aerospazio dei dipendenti attuali e futuri.

Il ruolo chiave delle conoscenze incentiva il raggiungimento di scopi sociali (cittadinanza digitale e inclusione) ma aumenta anche l'attrattività delle organizzazioni come motore di occupazione mediante il costante investimento sui giovani talenti, considerati come catalizzatori per il progresso tecnologico.

Dunque, la cultura dell'innovazione promossa all'interno del Cluster sottolinea la natura onnicomprensiva dell'innovazione sociale, che deriva dalla strategia e si traduce in operazioni, processi e pratiche reali della vita quotidiana per il miglioramento delle comunità e della società del futuro".

4.3.4 Practice-based innovation

L'"accumulazione" dei diversi tipi di innovazione descritti nei paragrafi precedenti genera nuove pratiche tecniche, culturali e sociali (Storbacka e Nenonen, 2011) che possono portare alla diffusione *actors- driven* di nuove regole per aziende, istituzioni e cittadini del CTNA.

Pertanto, i risultati innovativi generati possono essere trasformati da outcome materiali e tecnici (nell'innovazione tecnologica) in nuovi orientamenti (nella *business model innovation*) e in nuove regole e istituzioni (practice-based innovation) per raggiungere, infine, il più alto grado di intangibilità delle nuove entità generate. I diversi tipi di innovazione prodotti (dall'innovazione tecnologica all'innovazione sociale) stimolano progressivamente la generazione di istituzioni comuni semplificando lo scambio di conoscenze e il dialogo tra utenti pubblici e privati e creando nuove modalità interattive, comunicative e relazionali e nuove prassi per la raccolta di dati.

L'innovazione basata sulle pratiche "eleva" i risultati innovativi raggiunti nel CTNA al massimo livello di astrazione, che si basa sulla "istituzionalizzazione" (Vargo *et al.*, 2015) delle forme di innovazione precedenti e, dunque, consolidate.

In particolare, le pratiche tecniche, culturali e sociali sono generate grazie all'introduzione di nuovi standard che possono aumentare la conoscenza complessiva del Cluster e trasformarla in creatività e nuove conoscenze (Baccarani e Golinelli, 2014) da istituzionalizzare e rinnovare nel tempo per perseguire l'innovazione sistematica. Gli standard tecnici si riferiscono alla diffusione di nuove regole condivise per la produzione, i processi e l'implementazione dei sistemi di telecomunicazione nel settore aerospaziale. Gli standard culturali riguardano l'adozione di un atteggiamento imprenditoriale proattivo e di una mentalità manageriale orientata all'innovazione. Inoltre, una nuova cultura basata sui dati è diffusa non solo all'interno delle organizzazioni private, ma è condivisa anche con dipendenti, studenti e cittadini per migliorare la cultura digitale posseduta dagli attori, che deve essere basata su abilità e conoscenze tecniche e tecnologiche ma anche sull'attitudine al cambiamento sociale. Gli standard ambientali (basso consumo energetico, sostenibilità dei processi, ecc.) riformulano il modo in cui la mobilità e l'ambiente sono vissuti ed esperiti dall'intera comunità.

Le nuove pratiche emerse nel Cluster derivano dalla combinazione delle attività realizzate dagli attori applicate alle tecnologie e da attività quotidiane di condivisione collettiva delle conoscenze (KCC) tra reti di individui e organizzazioni che combinano caratteristiche tangibili e intangibili per formare e riformare il nuovo valore prodotto nel tempo (VCC). I meccanismi innovativi promossi all'interno del Cluster generano i nuovi standard grazie alla combinazione sinergica dei risultati dell'innovazione sopra descritti.

5. Discussioni

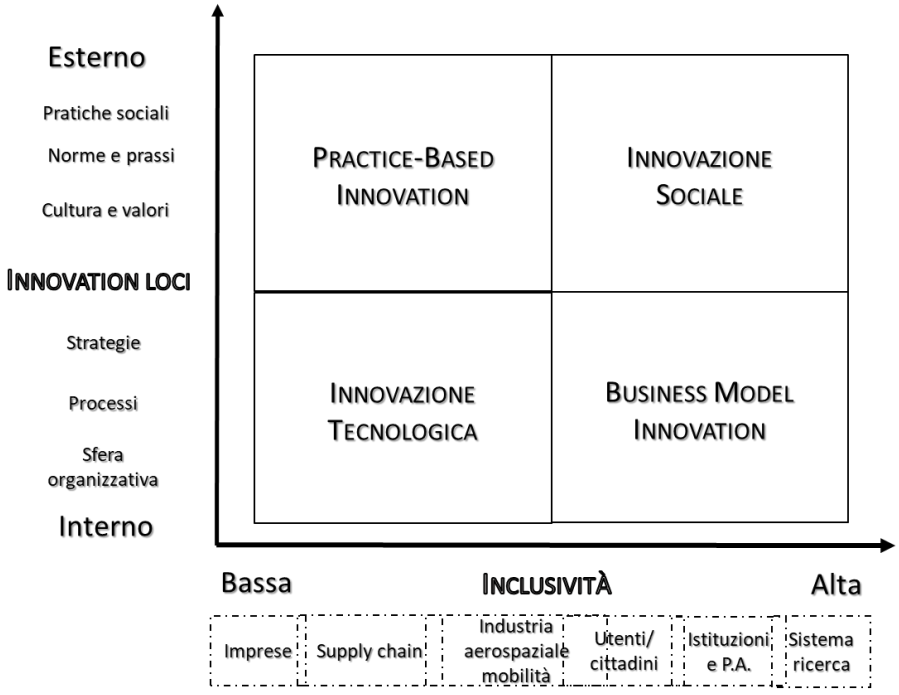
Le varie modalità della co-creazione di conoscenza e valore identificate (DR1), se combinate correttamente, possono dare vita a una sinergia relazionale che si traduce in una serie di "outcome" innovativi che possono tradursi in nuovi prodotti/processi, strategie aziendali, conoscenza, valore e/o valore sociale, norme e regole (DR2, le differenti forme di innovazione identificate nel paragrafo 4.2). Pertanto, rivelando le diverse dimensioni abilitanti che favoriscono la creazione di innovazione co-creata nel CTNA, l'innovazione nei sistemi di servizi può essere concettualizzata come un processo emergente. In particolare, la co-creazione di conoscenze (KCC) sembra essere un antecedente della co-creazione del valore (VCC); l'accumulazione della nuova conoscenza e del valore così co-creati possono favorire, poi, l'emersione di diverse sfumature dell'innovazione.

Come descritto nei risultati, nell'evoluzione dall'innovazione tecnologica all'innovazione practice-based, i diversi sub-sistemi identificati nel Cluster (sistema di fornitura, sistema di mobilità, sistema istituzionale e cittadini) sono gradualmente coinvolti nel co-sviluppo dell'innovazione, beneficiando vicendevolmente dei risultati generati in modo incrementale nel processo. Con il crescente coinvolgimento di un insieme sempre più ampio di stakeholder (passando quindi da interazioni B2B a B2C e C2C), la "portata" dell'innovazione si espande, determinando il passaggio dall'innovazione tecnologica/di processo all'innovazione dei business model, sociale e practice-based.

Come mostra la tipologia in Figura 7, è possibile in definitiva rivelare l'emersione di quattro differenti sfumature di innovazione, ottenute dall'intersezione di due variabili principali: 1) innovation loci ("luoghi" in cui si sviluppa l'innovazione); 2) inclusività.

I luoghi dell'innovazione possono variare dalla sfera interna (micro-organizzativa, che coinvolge lo sviluppo di nuove tecnologie o prodotti relativi a singole aziende o più aziende) alla sfera esterna (macro-collettiva, che vede l'innovazione "spostarsi" e tradursi nella creazione di nuove istituzioni o valori sociali). L'inclusività riguarda il grado di coinvolgimento dei diversi attori nel Cluster, che può essere basso (partecipazione attiva del solo sub-sistema di fornitori o degli attori del segmento aerospazio) o elevato (inclusione di utenti-cittadini, organizzazioni pubbliche e non-profit, sistema della ricerca).

Fig. 7: I diversi tipi di innovazione emersi nel CTNA: una tipologia



Fonte: ns. elaborazioni

I quattro tipi di innovazione identificati e rilevati dall'attivazione delle principali dimensioni abilitanti della co-creazione all'interno del Cluster sono sequenziali e strettamente collegati tra loro. In tal modo, si evidenzia la natura incrementale dell'innovazione sistematica perseguita dal CTNA, in cui ogni diverso "grado-tipo di innovazione" a ciascun livello dovrebbe essere pienamente realizzato, agendo così da "motore" per transitare al "livello" successivo di innovazione.

Il Cluster persegue l'innovazione costantemente e sistematicamente, riuscendo a sviluppare outcome innovativi in molteplici sfere (organizzativa, tecnologica, relazionale, umana). Dunque, l'emersione di entità innovative coinvolge i prodotti/servizi e i processi organizzativi, le relazioni con gli attori all'interno e all'esterno della catena di fornitura tramite la valorizzazione della componente umana, ritenuta essenziale per applicare le abilità, conoscenze e una giusta sensibilità metodologica all'analisi dei dati. Il risultato congiunto di tali molteplici effetti innovativi può generare il benessere per ciascun attore nel sistema, creando benefici economici, sociali, culturali ed ambientali per l'intero Cluster e per il territorio in cui questo giace.

Tramite il coinvolgimento attivo di una serie di gruppi di stakeholder "incapsulati" (fornitori, subfornitori, organizzazioni private e non- profit, istituzioni, cittadini), gli elementi innovativi generati a ciascun livello mostrano caratteristiche inaspettate che di volta in volta favoriscono l'emergere dell'innovazione nel "quadrante" successivo (dall'innovazione tecnologica, a quella di business model, alla sociale e alla practice-based) determinando un valore aggiunto ed una sinergia che accrescono la creazione di nuovo valore e nuove entità di livello in livello.

Pertanto, l'innovazione può essere riformulata come un processo multi-attore che non implica necessariamente la rottura degli schemi: l'innovazione su base sistematica può essere intesa come l'esito di una serie di adattamenti e riconfigurazioni che armonizzano gli interessi e gli scopi di molteplici attori perseguendo molteplici benefici per ciascuno. Le trasformazioni e i cambiamenti sociali possono essere perseguiti solo attraverso il costante miglioramento dell'intero sistema di servizi, delle persone che lo abitano, delle interazioni tra le stesse, delle tecnologie e dei risultati innovativi creati congiuntamente.

Ne consegue, dunque, che l'innovazione non implichi necessariamente una rivoluzione e che la perturbazione e l'evento *disruptive* non rappresentino di per sé l'innovazione poiché questa risiede nel modo in cui gli utenti adottano le nuove tecnologie, nel modo in cui le imprese stravolgono il dialogo con e tra cittadini, imprese, governo, per perseguire non solo l'efficienza delle prestazioni, ma anche l'inclusione sociale, la crescita dell'istruzione, l'empowerment culturale, la trasparenza delle comunicazioni, il miglioramento complessivo della qualità della vita. Pertanto, la reale trasformazione e i cambiamenti sociali possano essere perseguiti solo attraverso il costante miglioramento dell'intero sistema di servizi, delle sue persone, interazioni, tecnologie, conoscenze e valore che congiuntamente co-creano risultati innovativi.

6. Implicazioni teoriche e manageriali

Da un punto di vista teorico, lo studio introduce un'agenda di ricerca che incoraggia le ricerche future ad esplorare come l'emersione dell'innovazione possa essere favorita nei sistemi di servizi smart grazie alla: 1) classificazione dei principali antecedenti della co-creazione della conoscenza, del valore e dell'innovazione; 2) rilevazione del modo in cui i fattori abilitanti che stimolano l'innovazione si rimodellano, grazie alle interazioni mediate dalla tecnologia, ai processi di interazione e allo scambio di conoscenze per perseguire l'innovazione co-creata. Pertanto, il ruolo trasformativo delle nuove tecnologie viene esplorato per rilevare come le diverse combinazioni di risorse, capacità e di uso dei tool tecnologici possano generare innovazione attraverso diversi modelli relazionali, proponendo i primi passi per risolvere il gap rilevato all'interno della ricerca esistente (Akaka *et al.,* 2019). Pertanto, lo studio arricchisce il filone di ricerca che esplora l'emersione dell'innovazione nei sistemi di servizi smart, categorizzando i diversi driver, i meccanismi e le pratiche che promuovono l'innovazione (Abbate *et al.*, 2019), non solo nel settore

B2B ma anche nell'ampliamento deli confini dell'organizzazione verso le relazioni C2C (Polese *et al.,* 2019).

La visione di processo proposta consente di mediare costantemente tra le descrizioni degli elementi abilitanti dei sistemi di servizi (la dimensione del "cosa") e il modo in cui, grazie all'attivazione dinamica degli elementi, possono essere prodotte nuove tecnologie, risorse, valori e regole sociali (la dimensione del "come"). In questo modo, viene proposta una nuova concettualizzazione dell'innovazione, che supera ogni distinzione tra innovazione incrementale e radicale (Wiersema, 2013; Akaka *et al.,* 2019).

Dunque, la classificazione dell'innovazione concettualizzata in questo studio potrebbe indirizzare i manager a comprendere: 1) in che modo le tecnologie smart possano produrre risultati di innovazione diversi in base ai diversi tipi di stakeholder coinvolti; 2) come diverse strategie di gestione e ottimizzazione dei flussi informativi, dei dati, delle risorse possano produrre valori diversi e nuovi; 3) come i nuovi outcome prodotti (le nuove conoscenze e pratiche) possano essere promossi e rinnovati costantemente nel tempo per perseguire il miglioramento continuo (tramite il costante adattamento e il ri-adattamento proattivo dei sistemi al contesto sempre più complesso).

Inoltre, lo studio contribuisce a chiarire la relazione tra l'uso efficiente delle tecnologie e delle piattaforme ICTs e lo sviluppo dell'innovazione (Barile *et al.,* 2017). Di conseguenza, i manager possono acquisire spunti sulle più adeguate combinazioni tra tecnologia e interazioni umane per gestire la co-creazione di valore strategico che può consentire, a sua volta, l'armonizzazione dei complessi processi di innovazione. È possibile trarre altresì alcuni suggerimenti su "come" le interazioni abilitate dalla tecnologia possano potenziare l'integrazione dinamica delle risorse, attraverso un costante processo di adattamento e riconfigurazione, contribuendo così ad identificare i principali driver per il miglioramento continuo (Russo-Spena e Mele, 2012; Medina-Borja, 2015).

La tipologia dell'innovazione introdotta in Figura 7 fa luce su come l'applicazione di determinate tecnologie possa produrre vari risultati di innovazione in base ai diversi tipi di stakeholder coinvolti. Pertanto, lo schema proposto potrebbe innalzare la conoscenza dei manager in merito al contributo di un determinato strumento tecnologico o piattaforma alla co-creazione del valore, differenziando i benefici che possono ottenere vari partecipanti (Abbate *et al.,* 2019) e dunque prevedendo differenti strategie di gestione dell'innovazione e di incentivazione della co-creazione.

Infine, i risultati possono illustrare alcune strategie di ottimizzazione delle risorse atte a produrre nuove e differenti modalità di creazione del valoriale modellando i ruoli degli attori, allineando le politiche e i processi decisionali alle esigenze individuali e modellando strategicamente la struttura delle interazioni. L'allineamento dei ruoli dei vari gruppi di attori può essere promosso attraverso il co-sviluppo del valore che moltiplica gli effetti benefici delle nuove tecnologie, riducendo le asimmetrie informative ed allocando risorse su attività comuni che perseguono obiettivi comuni.

7. Conclusioni

Il lavoro ridefinisce l'innovazione nei sistemi di servizio come un processo sistematico in cui è possibile identificare diverse sfumature innovative, a diversi gradi di inclusività degli attori e di capacità del potenziale innovativo. Il modello concettuale che classifica i quattro tipi di innovazione generati nel Cluster tecnologico per l'aerospazio è derivato mediante un processo di ricerca di substruzione basato sull'analisi del contenuto.

Grazie alla proposta di una visione di sintesi, la ricerca empirica indaga la complessa transizione dalla predisposizione, acquisizione e attivazione di una serie di dimensioni abilitanti per la co-creazione della conoscenza e del valore (il "cosa") al modo in cui tali dimensioni possano essere combinate dinamicamente per favorire l'emersione di diversi tipi di innovazione (nuovi prodotti-tecnologie, modelli di business, strategie, pratiche sociali e culturali, la dimensione del "come").

Grazie all'esplorazione delle dimensioni abilitanti che attivano la co-creazione di conoscenza (KCC), valore (VCC) e innovazione (*co-innovation*) nei sistemi di servizi intelligenti, diversi modelli di innovazione sono identificati per concettualizzare l'innovazione sistematica nel CTNA, non concepita come un "semplice" risultato del processo ma come la continua ricerca di sinergie e l'esito graduale di una costruzione incrementale di connessioni sociali tra gli attori. Mediante l'adozione di una mentalità innovativa e di un orientamento all'apprendimento, è possibile perseguire non solo una trasformazione radicale e la co-creazione di nuove soluzioni, ma anche ottenere cambiamenti durevoli e stabili nei processi aziendali, nei modelli di business, nelle strategie e nei rapporti con gli utenti.

I risultati dello studio, dunque, non soltanto aiutano a concettualizzare i driver per il (co-) sviluppo dell'innovazione ma offrono uno strumento pratico (la tipologia) che aiuti manager e decisori ad intercettare le diverse varianti assunte dai processi di co-creazione del valore che possono dare vita a diverse varianti di innovazione. In tal modo, non soltanto si arricchisce di significati il concetto di innovazione co-creata ma si fa luce altresì sui meccanismi di adattamento sistemico che in un mercato complesso possono favorire l'istituzionalizzazione degli elementi innovativi generati trasformandoli in routine e pervenendo all'accumulazione di conoscenza e al miglioramento continuo in grado di offrire un vantaggio competitivo sostenibile. I nuovi elementi emergenti co-sviluppati (tecnologie, prodotti/servizi, processi, strategie, pratiche e regole sociali), associati a diverse modalità di innovazione (le 4 sfumature), possono essere rinnovati nel tempo e "re-istituzionalizzati" per raggiungere una costante stato di "tensione" all'innovazione.

Sottolineando la necessità di gestire le tecnologie attualmente a disposizione delle aziende come strumenti strategici per la co-innovazione, lo studio indirizza le ricerche future verso l'adozione di una prospettiva di sintesi e sistemica che medi tra l'analisi degli antecedenti dell'innovazione (KCC, VCC) e l'osservazione dei suoi outcome.

La principale limitazione del lavoro è legata alle caratteristiche intrinseche della metodologia dello studio di caso singolo che non consente alcun tipo di generalizzazione dei risultati e impedisce l'estensione degli stessi ad altri contesti produttivi, di mercato o territoriali. Inoltre, la selezione di un campione ristretto di dati secondari in forma testuale per l'analisi del contenuto (basata su un campionamento di convenienza) fa sì che gli unici dati reperibili siano le sole informazioni che i membri del Cluster scelgono di diffondere tramite canali ufficiali.

Per risolvere tali limiti, le ricerche future sul tema potrebbero partire dai risultati proposti nel corrente studio per applicare la classificazione delle diverse sfumature di innovazione ad altri sistemi di servizi o ad altri contesti tramite la raccolta di dati primari con metodo qualitativo (osservazione, interviste) e/o mediante la realizzazione di casi di studio comparativi (Yin 1994). In tal modo, è possibile valutare se la tipologia possa essere applicata a Cluster di diversi settori (automobilistico, alimentare, dell'energia, ecc.) nella stessa nazione o in nazioni diverse. Inoltre, il metodo misto può essere usato per combinare approcci quantitativi e qualitativi ed ottenere una maggiore profondità di analisi. Ad esempio, l'esistenza dei principali tipi di innovazione qui introdotti può essere testata attraverso l'adozione di tecniche quantitative, come la regressione multipla o i modelli di equazioni strutturali. In questo modo, risulta non soltanto possibile produrre risultati generalizzabili, ma anche testare le relazioni tra i principali driver e gli outcome dell'innovazione ipotizzati, correlandoli ad altri costrutti chiave del management e del marketing come il comportamento degli utenti, l'engagement, il commitment e così via.

Bibliografia

ABERNATHY W.J., CLARK K.B. (1985), "Innovation: Mapping the winds of creative destruction", *Research Policy*, vol. 14, n. 1, pp. 3-22.

ACARE (2017), disponibile al link: *https://www.acare4europe.org/sites/acare4europe.org/files/document/ACARE-Strategic-Research-Innovation-Volume-1.pdf* (ultimo accesso 25 Febbraio 2002)

ACHARYA A., SINGH S.K., PEREIRA V., SINGH P. (2018), "Big data, knowledge co-creation and decision making in fashion industry", *International Journal of Information Management*, vol. 42, pp. 90-101.

ADDEO F., MONTESPERELLI P. (2007), *Esperienze di analisi di interviste non direttive*, Aracne, Roma.

AKAKA M.A., KOSKELA-HUOTARI K., VARGO S.L. (2019), "Further Advancing Service Science with Service-Dominant Logic: Service Ecosystems, Institutions, and Their Implications for Innovation", In *Handbook of Service Science*, Volume II (pp. 641-659), Springer, Cham.

ARIKAN A.T. (2009), "Interfirm knowledge exchanges and the knowledge creation capability of Clusters", *Academy of Management Review*, vol. 34, n. 4, pp. 658-676.

BACCARANI C., CASSIA F. (2017), "Evaluating the outcomes of service ecosystems: The interplay between ecosystem well-being and customer well-being", *The TQM Journal*, vol. 29, n. 6, pp. 834-846.

BACCARANI C., GOLINELLI G.M. (2014), "Le parole dell'innovazione", *Sinergie italian journal of management*, n. 94, pp. 9-14.

BACCARANI C., UGOLINI M., BONFANTI A. (2015), "A conceptual service quality map: The value of a wide opened perspective", In *Proceedings of the 18th international Conference on quality and service sciences*, Castello Utveggio, Palermo, Italy, 31 August 2015- 1 September 2015; pp. 159-176; ISBN: 9788890432774

BARBARANELLI C., INGOGLIA S. (2013), *I Modelli di Equazioni Strutturali: Temi e prospettive*, LED- Edizioni Universitarie di Lettere Economia e Diritto, Milano.

BARILE S., CIASULLO M.V., TROISI O., SARNO D. (2017), "The role of technology and institutions in tourism service ecosystems: Findings from a case study", *The TQM Journal*, vol. 29, n. 6, pp. 811-833.

BARILE S., POLESE F. (2010), "Smart service systems and viable service systems: Applying systems theory to service science", *Service Science*, vol. 2, n. 1-2, pp. 21-40.

BARRETT M., DAVIDSON E., PRABHU J., VARGO S.L. (2015), "Service innovation in the digital age: key contributions and future directions", *MIS quarterly*, vol. 39, n. 1, pp. 135-154.

BEVERUNGEN D, MÜLLER O, MATZNER M, MENDLING J, VOM BROCKE J (2019), "Conceptualizing smart service systems", *Electronic Markets*, vol. 29, pp. 7-18.

BLOMKVIST J., HOLMLID S., SEGELSTRÖM F. (2011), "Service Design Research: Yesterday, Today and Tomorrow", in Stickdorn M., Schneider J. (Ed.), *This Is Service Design Thinking*, BIS Publishers, Amsterdam, pp. 308-315.

BREIDBACH C.F., BRODIE R.J. (2017), "Engagement platforms in the sharing economy: conceptual foundations and research directions", *Journal of Service Theory and Practice*, vol. 27, n. 4, pp. 761-777.

BREIDBACH C.F., MAGLIO P.P. (2016), "Technology-enabled value co-creation: An empirical analysis of actors, resources, and practices", *Industrial Marketing Management*, vol. 56, Luglio, pp. 73-85.

BRYNJOLFSSON E., HITT L.M., KIM H.H. (2011), *Strength in numbers: How does data-driven decision-making affect firm performance?*, Available at SSRN 1819486. https://doi.org/10.2139/ssrn.1819486.

CARAYANNIS E.G., CAMPBELL D.F.J. (2009), "Mode 3" and "Quadruple Helix": toward a 21st century fractal innovation ecosystem, International Journal of Technology Management, vol.46, n. 3/4, 201-234

CARAYANNIS E.G., RAKHMATULLIN R. (2014), "The quadruple/quintuple innovation helixes and smart specialisation strategies for sustainable and inclusive growth in Europe and beyond", *Journal of the Knowledge Economy*, vol. 5, n. 2, pp. 212-239

CARRUBBO L., BRUNI R., CAVACECE Y., MORETTA TARTAGLIONE A. (2015), *Service system platforms to improve value co-creation: Insights for translational medicine. System Theory and Service Science: Integrating Three Perspectives in a New Service Agenda*, Giannini Editore, Napoli.

CASSIA F., MAGNO F., UGOLINI M. (2015), "Mutual value creation in component co-branding relationships", *Management Decision*, vol. 53, n. 8, pp. 1883-1898.

CHAFFEY D., PATRON M. (2012), "From web analytics to digital marketing optimization: Increasing the commercial value of digital analytics", *Journal of Direct, Data and Digital Marketing Practice*, vol. 14, n. 1, pp. 30-45.

CHANDLER J.D., VARGO S.L. (2011), "Contextualization and value-in-context: How context frames exchange", *Marketing Theory*, vol. 11, n. 1, pp. 35-49.

CHEN J., CHEN Y., DU X., LI C., LU J., ZHAO S., ZHOU X. (2013), "Big data challenge: a data management perspective", *Frontiers of Computer Science*, vol. 7, n. 2, pp. 157-164.

CHURCHILL G.A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, vol. 16, n. 1, pp. 64-73.

CORBETTA P. (1999), *Metodologia e tecniche della ricerca sociale*, Il Mulino, Bologna.

DAVIS M.M., SPOHRER J.C., MAGLIO P.P. (2011), "Guest editorial: How technology is changing the design and delivery of services", *Operations Management Research*, vol. 4, n. 1/2, pp. 1-5.

DIAMANTOPOULOS A., WINKLHOFER H.M. (2001), "Index construction with formative indicators: An alternative to scale development", *Journal of Marketing Research*, vol. 38, n. 2, pp. 269-277.

DUBOIS A., GADDE L.E. (2014), "Systematic Combining: A Decade Late", *Journal of Business Research*, vol. 67, n. 6, pp. 1277-1284.

DULOCK H.L., HOLZEMER W.L. (1991), "Substruction: Improving the linkage from theory to method", *Nursing Science Quarterly*, vol. 4, n. 2, pp. 83-87.

EDVARDSSON B., TRONVOLL B., GRUBER T. (2011), "Expanding understanding of service exchange and value co-creation: a social construction approach", *Journal of the academy of marketing science*, vol. 39, n. 2, pp. 327-339.

EDVARDSSON B., GUSTAFSSON A., PINHO N., BEIRÃO G., PATRÍCIO L., FISK R.P. (2014), "Understanding value co-creation in complex services with many actors", *Journal of Service Management*, vol. 25, n. 4, pp. 470-493.

EISENHARDT K.M. (1989), "Building theories from case study research", *Academy of Management Review*, vol. 14, n. 4, pp. 532-550.

ETZKOWITZ H. (2003), "Innovation in innovation: the triple helix of university-industry-government relations", *Social Science Information*, vol. 42, n. 3, pp. 293-337.

ETZKOWITZ H., ZHOU C. (2017), *The triple helix: university-industry-government innovation and entrepreneurship*, Routledge, New York.

FEAGIN J., ORUM A., SJOBERG G. (1991), *A case for case study*; University of North Carolina Press: Chapel Hill, NC.

FORNELL C., LARKER D. (1981), "Structural equation modeling and regression: guidelines for research practice", *Journal of Marketing Research*, vol. 18, n. 1, pp. 39-50.

FROST R., LYONS K. (2017), "Service systems analysis methods and components: a systematic literature review", *Service Science*, vol. 9, n. 3, pp. 219-234.

FROW P., NENONEN S., PAYNE A., STORBACKA K. (2015), "Managing co-creation design: A strategic approach to innovation", *British Journal of Management*, vol. 26, n. 3, pp. 463-483.

GALLOUJ F. (2002), "Knowledge-intensive business services: processing knowledge and producing innovation", in Gadrey J., Gallouj F. (Ed.), *Productivity, Innovation and Knowledge in Services: New Socio-Economic Approaches*, Edward Elgar, Cheltenham, UK, pp. 256-284

GANDOMI A., HAIDER M. (2015), "Beyond the hype: Big data concepts, methods, and analytics", *International Journal of Information Management*, vol. 35, n. 2, pp. 137-144.

GUMMESSON E. (2017), *Case theory in business and management: reinventing case study research*, Sage Publications, Thousand Oaks, CA.

GUPTA M., GEORGE J.F. (2016), "Toward the development of a big data analytics capability", *Information & Management*, vol. 53, n. 8, pp. 1049-1064.

HAKANEN T. (2014). Co-creating integrated solutions within business networks: The KAM team as knowledge integrator. *Industrial Marketing Management*, vol. 43, n. 7, pp. 1195-1203.

HSIEH L., CHEN S.K. (2005), "Incorporating voice of the consumer: does it really work?", *Industrial Management and Data Systems*, vol. 105, n. 6, pp. 769-785.

JAAKKOLA, E., ALEXANDER, M. (2014), "The role of customer engagement behavior in value co-creation: a service system perspective", *Journal of service research*, vol. 17, n. 3, pp. 247-261.

JÄRVINEN J., KARJALUOTO H. (2015), "The use of Web analytics for digital marketing performance measurement", *Industrial Marketing Management*, vol. 50, Ottobre, 117-127.

KARLSSON C., JOHANNSON B., STOUGH R. (Eds.), (2005), *Industrial clusters and inter-firm networks*, Edward Elgar Publishing, Cheltenham, UK.

KIELISZEWSKI C.A., ANDERSON L.C. (2019), "People and Social Interaction: Drivers of Service Innovation", In *Handbook of Service Science, Volume II* (pp. 307-325), Springer, Cham.

KOHLBACHER, F. (2008), "Knowledge-based New Product Development: fostering innovation through knowledge co-creation", *International Journal of Technology Intelligence and Planning*, vol. 4, n. 3, pp. 326-346.

KOSKELA-HUOTARI K., EDVARDSSON B., JONAS J.M., SÖRHAMMAR D., WITELL L. (2016), "Innovation in service ecosystems-Breaking, making, and maintaining institutionalized rules of resource integration", *Journal of Business Research*, vol. 69, n. 8, pp. 2964-2971.

KRIPPENDORFF K. (2004), "Measuring the reliability of qualitative text analysis data", *Qual. Quant.*, vol. 38, n. 6, pp. 787-800.

LAVALLE S., LESSER E., SHOCKLEY R., HOPKINS M.S., KRUSCHWITZ N. (2011), "Big data, analytics and the path from insights to value", *MIT Sloan Management Review*, vol. 52, n. 2, pp. 21.

LEE J., KAO H.A., YANG S. (2014), "Service innovation and smart analytics for industry 4.0 and big data environment", *Procedia Cirp*, vol. 16, n. 1, pp. 3-8.

LIM C., MAGLIO P.P., KIM K., KIM M., KIM K. (2016), "Toward Smarter Service Systems through Service-oriented Data Analytics", *Proceedings of 2016 I.E. International Conference on Industrial Informatics*, pp. 1-6.

LIM, C., MAGLIO, P. P. (2018), "Data-Driven understanding of smart service systems through text mining", *Service Science*, vol. 10, n. 2, pp. 154-180.

LIM C., MAGLIO P.P. (2019), "Clarifying the Concept of Smart Service System", In *Handbook of Service Science, Volume II* (pp. 349-376), Springer, Cham.

LÖBLER H., LUSCH R.F. (2014), "Signs and practices as resources in IT-related service innovation", *Service Science*, 6, n. 3, pp. 190-205.

LOSITO G. (1996), *L'analisi del contenuto nella ricerca sociale* (Vol. 1), Franco Angeli, Milano.

LUSCH R.F., NAMBISAN S. (2015), "Service Innovation: A Service-Dominant Logic Perspective", *MIS Quarterly*, vol. 39, n. 1, pp. 155-175.

MAGLIO, P. P., VARGO, S. L., CASWELL, N., SPOHRER, J. (2009), "The service system is the basic abstraction of service science", *Information systems and e-business management*, 7, pp. 395-406.

MAGLIO P.P., KWAN S.K., SPOHRER J. (2015), "Commentary-Toward a research agenda for human-centered service system innovation", *Service Science*, vol. 7, n. 1, pp. 1-10.

MAGLIO P.P., SPOHRER J. (2008), "Fundamentals of service science", *Journal of the Academy of Marketing Science*, vol. 36, n. 1, pp. 18-20.

MAGLIO P.P., SRINIVASAN S., KREULEN J.T., SPOHRER J. (2006), "Service systems, service scientists, SSME, and innovation", *Communications of the ACM*, vol. 49, n. 7, pp. 81-85. 23

MARTÍN-DE CASTRO G., LÓPEZ-SÁEZ P., DELGADO-VERDE M., QUINTANE E., MITCH CASSELMAN R., SEBASTIAN REICHE B., NYLUND P. (2011), "Innovation as a knowledge-based outcome", *Journal of Knowledge Management*, vol. 15, n. 6, pp. 928-947.

MCAFEE A., BRYNJOLFSSON E. (2012), "Big data: the management revolution", *Harvard Business Review*, vol. 90, n. 10, pp. 60-66.

MEDINA-BORJA A. (2015), "Editorial Column-Smart Things as Service Providers: A Call for Convergence of Disciplines to Build a Research Agenda for the Service Systems of the Future*", Service Science*, vol. 7, n. 1, pp. ii-v. https://doi.org/10.1287/ serv.2014.0090

MELE C., RUSSO-SPENA T. (2019), "Innovation in Sociomaterial Practices: The Case of IoE in The Healthcare Ecosystem", In *Handbook of Service Science,* Volume II (pp. 517-544), Springer, Cham.

MILLS J., BONNER A., FRANCIS K. (2006), "Adopting a constructivist approach to grounded theory: Implications for research design", *International Journal of Nursing Practice*, vol. 12, n. 1, pp. 8-13.

MOHER D., LIBERATI A., TETZLAFF J., ALTMAN D.G., ALTMAN D., ANTES G., CLARK J. (2009), "Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement", *Journal of Chinese Integrative Medicine*, vol. 7, n. 9, pp. 889-896.

NAMBISAN S. (2002), "Designing virtual customer environments for new product development: Toward a theory", *Academy of Management Review*, vol. 27, n. 3, pp. 392-413.

NESLIN S., GREWAL D., LEGHORN R., SHANKAR V., TEERLING M., THOMAS J., VERHOEF P. (2006), "Challenges and opportunities in multichannel customer management", *Journal of Service Research*, vol. 9, n. 2, pp. 95-112.

NEUHOFER B., BUHALIS D., LADKIN A. (2012), "Conceptualising technology enhanced destination experiences", *Journal of Destination Marketing & Management*, vol. 1, n. 1-2, pp. 36-46.

NG I. (2015), *The Internet of Everything and the Future of Service*. Speech, 2015 Frontiers in Service Conference in San Jose, CA. Available at: http://hubofallthings.com/hat-in-the-usa/.

O'NEAL C. (2012), *Data-Driven Decision Making*, Washington, D.C.: International Society for Technology in Education.

OECD (2005), *Oslo Manual Guidelines for collecting and interpreting technological innovation data. OECD Publishing,* Available Online at: http://www.urenio.org/el/wp-content/uploads/2015/10/1.1.-OECD-2006-Oslo-Manual.pdf

ORLIKOWSKI W.J. (2000), "Using technology and constituting structures: A practice lens for studying technology in organizations", *Organization Science*, vol. 11, n. 4, pp. 404-428.

PENROSE E. (1959), *The theory of the growth of the firm*, Oxford: Blackwell.

PEREDO A.M., CHRISMAN J. (2006), "Toward a theory of community-based enterprise", Academy of management review, vol. 31, n. 2, pp. 309-328.

PICIOCCHI P., BASSANO C., PIETRONUDO M.C., SPOHRER J.C. (2019), "Digital Workers in Service Systems: Challenges and Opportunities", in Maglio P.P., Kieliszewski C.A., Spohrer J.C., Lyons K., Patricio L., Sawatani Y. (Ed.), *Handbook of Service Science, Volume II*, Springer Nature Switzerland AG, Cham, pp. 409-432.

PRAHALAD C.K., RAMASWAMY V. (2003), "The new frontier of experience innovation", *MIT Sloan Management Review*, vol. 44, n. 4, pp. 12-18

RAMASWAMY V., GOUILLART F. (2010), "Building the co-creative enterprise", *Harvard Business Review*, vol. 88, n. 10, pp. 100-109.

ROMERO D., MOLINA A. (2009), "Value co-creation & co-innovation: linking networked organisations and customer communities", In: Camarinha-Matos L.M., Paraskakis I., Afsarmanesh H., eds. *Leveraging knowledge for innovation in collaborative networks*, International Federation for Information Processing, AICT 307. New York: Springer, 401-412

ROMERO D., MOLINA A. (2011), "Collaborative networked organisations and customer communities: value co-creation and co-innovation in the networking era", *Production Planning & Control*, vol. 22, n. 5-6, pp. 447-472.

ROSITI F. (1988), "Analisi del contenuto", in Rositi F., Livolsi M., eds., *La ricerca sull'industria culturale*, La nuova Italia: Firenze, 59-94.

RUSSO-SPENA T., MELE C. (2012), "Five Co-s in innovating: a practice-based view"; *Journal of Service Management*, vol. 23, n. 4, pp. 527-553.

SANGIORGI D., LIMA F., PATRÍCIO L., JOLY M.P., FAVINI C. (2019), "A Human-Centred, Multidisciplinary, and Transformative Approach to Service Science: A Service Design Perspective", in Maglio P.P., Kieliszewski C.A., Spohrer J.C., Lyons K., Patricio L., Sawatani Y. (Ed.), *Handbook of Service Science, Volume II*, Springer Nature Switzerland AG, Cham, pp. 147-181.

SILTALOPPI J., KOSKELA-HUOTARI K., VARGO S.L. (2016), "Institutional complexity as a driver for innovation in service ecosystems", *Service Science*, vol. 8, n. 3, pp. 333-343.

SNYDER H., WITELL L., GUSTAFSSON A., FOMBELLE P., KRISTENSSON P. (2016), "Identifying categories of service innovation: A review and synthesis of the literature", *Journal of Business Research*, vol. 69, n. 7, pp. 2401-2408.

SPOHRER J.C., DEMIRKAN H. (2015, January), "Introduction to the smart service systems: Analytics, cognition, and innovation minitrack", *In 2015 48th Hawaii International Conference on System Sciences* (pp. 1442-1442), IEEE.

SPOHRER J., MAGLIO P.P., BAILEY J., GRUHL D. (2007), "Steps toward a science of service systems", *Computer*, vol. 40, n. 1, pp.71-77.

SPOHRER J., VARGO S.L., CASWELL N., MAGLIO P.P. (2008), "The service system is the basic abstraction of service science", in *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual*, pp. 104-104

STORBACKA K., BRODIE R.J., BÖHMANN T., MAGLIO P.P., NENONEN S. (2016), "Actor engagement as a microfoundation for value co-creation", *Journal of Business Research*, vol. 69, n. 8, pp. 3008-3017.

SU C.Y., LIN B.W., CHEN C.J. (2016), "Knowledge co-creation across national boundaries: Trends and firms' strategies", *Knowledge Management Research and Practice*, vol. 14, n. 4, pp. 457-469.

SUNDBO J. (1997), "Management of innovation in services", *Service Industries Journal*, vol. 17, n. 3, pp. 432-455.

TEECE D., PISANO G. (1997), "Dynamic capabilities and strategic management, *Strategic management journal*, vol. 18, n.7, pp. 509-533.

TELLIS W. (1997), "Application of a Case Study Methodology", *Qualitative Report*, vol. 3, n. 3, pp. pp.1-19.

TROISI O., GRIMALDI M., MONDA A. (2019), "Managing Smart Service Ecosystems Through Technology: How ICTs Enable Value Cocreation", *Tourism Analysis*, vol. 24, n. 3, pp. 377-393.

VARGO S.L., WIELAND H., AKAKA M.A. (2015), "Innovation through institutionalization: A service ecosystems perspective", *Industrial Marketing Management*, vol.44, Gennaio, pp. 63-72.

VON HIPPEL E. (2005), "Democratizing innovation: the evolving phenomena of user innovation", *Journal fu¨r Betriebswirtschaft*, vol. 55, n. 1, pp. 63-78.

VON HIPPEL E., OZAWA S., E JONG J. (2011), "The age of the consumer-innovator", *MIT Sloan Management Review*, Fall, pp. 27-35.

WIERSEMA F. (2013), "The B2B agenda: The current state of B2B marketing and a look ahead*", Industrial Marketing Management*, vol. 4, n. 42, pp. 470-488.

YANG Y., CHEN R. (2008), "Customer participation: Co-creating knowledge with customers", In *2008 4th International Conference on Wireless Communications, Networking and Mobile Computing* (pp. 1-6), IEEE: New York.

YIN R.K. (1994), *Case Study Research: Design and Methods*, Sage Publications, Thousand Oaks, CA.

YIN R.K. (2011), *Applications of case study research*, Sage Publications, Thousand Oaks, CA.

Appendice

SCHEDA DI ANALISI DEL CONTENUTO

DR1- elementi abilitanti per la co-innovazione

Attori
- Presenza di Attori strategici/ rilevanti nella realizzazione di progetti congiunti
- Simmetria/asimmetria tra attori all'interno del cluster

Attività
- Obiettivi perseguiti
- Outcome sociali ed economici delle attività

Tecnologia
- Tool tecnologici impiegati nei processi e nelle attività
- Tool tecnologici impiegati per la comunicazione tra i vari membri
- Interconnessione dei vari tool tecnologici impiegati nel Cluster
- Miglioramento dei processi e della comunicazione a seguito dell'uso dei tool

Risorse
- Risorse scambiate tra i vari membri del cluster
- Operazioni di pianificazione di selezione e uso delle risorse
- Condivisione delle line guida strategiche e della filosofia manageriale tra i vari membri del Cluster
- Risorse chiave per lo sviluppo dell'innovazione
- Risorse chiave per la sopravvivenza del cluster e lo sviluppo delle relazioni

Ruoli
- Presenza di ruoli strategici per la realizzazione delle attività e degli obiettivi
- Presenza di ruoli per il miglioramento della competitività del Cluster

Knowledge co-creation
- Conoscenza e know-how prodotti a seguito delle attività congiunte
- Attivazione relazioni col Sistema della ricerca per la creazione di nuove conoscenze
- Miglioramento della conoscenza complessiva del Cluster
- Assunzione di nuove figure per l'analisi dei dati
- Condivisione di strumenti e conoscenze informatiche tra i vari membri del Cluster

Value co-creation
- Coinvolgimento degli attori nella proposta di idee innovative
- Nuovi atteggiamenti/strategie generate a seguito delle attività congiunte
- Eventuale modifica della mission, vision e linee strategiche
- Eventuale modifica della cultura complessiva del Cluster

DR2- differenti tipi di co-innovazione

Tecnologica
- Nuovi materiali, componenti, prodotti, servizi IT e ICTs introdotti negli ultimi 3 anni a seguito delle attività congiunte
- Introduzione di nuove tecnologie per digitalizzare i processi
- Introduzione di nuove tecnologie per migliorare la supply chain
- Introduzione di nuove tecnologie per migliorare i flussi di informazioni tra i diversi dipartimenti delle organizzazioni/tra le organizzazioni del Cluster

Knowledge-based
- Nuove pratiche di gestione delle relazioni nel cluster
- Rafforzamento delle strategie del Cluster
- Modifica dell'orientamento del Cluster
- Creazione di una cultura condivisa coerente e coesa nel CTNA
- Promozione della cultura digitale

Sociale
- Incremento dell'inclusione sociale dei cittadini nel Cluster
- Creazione di nuove regole per la comunità
- Creazione di nuove regole, abitudini e modi di vivere il territorio
- Realizzazione di soluzioni innovative a seguito del coinvolgimento di università e scuole nelle attività
- Creazione di un nuovo atteggiamento nel settore aerospaziale
- Creazione di cambiamenti di rotta nell'aerospazio e nella mobilità

Are consumers willing to pay more for "circular economy" products?

GAIA PRETNER[*] NICOLE DARNALL[•] FRANCESCO TESTA[♠] FABIO IRALDO[**]

Abstract

While prior research suggests that consumers are willing to pay higher prices for products with environmentally friendly attributes, this relationship may not apply to "circular economy" products because of perceived quality issues with "circular" products. We examine consumers' willingness to pay (WTP) for "circular" products in three ways. First, we consider consumers' WTP for garments that either are made from either recycled fibers or are reused. Second, we assess whether WTP increases when consumers are provided information about the circular product's reduced environmental impacts. Third, we evaluate whether WTP varies based on the source of environmental information is third party verified. We examine these issues for 2,400 U.S. and Italian consumers in an experimental setting. Our results suggest that WTP for circular products, both recycled and reused, is lower than the conventional version of the same product. However, when consumers are provided with information about the environmental virtues of the product, and especially when that information is verified by a third-party, consumers' WTP increases significantly. These findings expand the debate about consumers' WTP for environmentally friendly products and how businesses can better market their "circular economy" products.

Key words: *Willingness to pay; consumers; circular economy; circular products; third party certification; environmental information; experiment*

[*] Sant'Anna School of Advanced Studies - Pisa - Italy
e-mail: g.pretner@santannapisa.it

[•] Full Professor, School of Sustainability - Arizona State University Stati Uniti
e-mail: ndarnall@asu.edu

[♠] Associate Professor, Sant'Anna School of Advanced Studies - Pisa - Italy
e-mail: f.testa@santannapisa.it

[**] Full Professor, Sant'Anna School of Advanced Studies - Pisa - Italy
e-mail: f.iraldo@santannapisa.it

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6

DOI 10.7433/SRECP.FP.2020.01

1. Introduction

"Circular" products typically have one of two important features, either: (1) they are produced with recycled materials (and thus help close the production loop), or (2) they are produced in a way that makes them more durable or they are second-hand (and thus extend their life cycle). The recent adoption of the Circular Economy paradigm by the EU Commission (COM(2015) 614) highlights consumers' critical role in advancing Circular Economy objectives and expanding markets for "circular" products. However, in spite of the critical link that consumers have in advancing "circular" products, we know little about consumers' willingness to pay (WTP) for these products.

Prior research suggests that consumers are WTP a price premium for products that offer positive environmental attributes (Peattie and Crane 2005; Drozdenko *et al.* 2011). Products in which consumers' WTP is greater relate to food, clothes and cosmetics products that are labeled as being "natural," "biological," or "organic." These studies suggest that one reason for the increased WTP is that consumers often perceive these products as being higher quality because they are healthier (Aschemann-Witzel and Zielke, 2017; Ghazali *et al.*, 2017; Schuitema and de Groot, 2015; Janssen and Hamm, 2012). Similarly, products with labels that promote animal welfare or fair trade (Gassler and Spiller, 2017; De Magistris and Garcia, 2016; Kang *et al.*, 2013) tend to yield higher consumer WTP because they convey ethically desirable attributes (Van Loo *et al.*, 2015; Vecchio and Annunziata, 2015; Testa *et al.*, 2015). Moreover, consumers' WTP appears to increase when environmental and social product claims are supported by an ecolabel or by a third-party certification because labels help increase consumers' certainty about the credibility of product claims (Darnall *et al.*, 2018; Darnall *et al.*, 2017; Atkinson and Rosenthal, 2014; Catska and Corbett, 2014; Aguilar and Vlosky, 2006).

However, we suggest that consumers' WTP may be different for "circular" products, especially those that are made from recycled materials or those that are second-hand. While these circular products offer significant pro-environmental attributes, consumers may regard them as being of inferior quality (Magnier *et al.*, 2019). These perceived quality concerns are also likely to be heightened for personal products that have closer contact with the consumer's body, like garments or cosmetics (Hamzouil and Linton, 2009). In some instances, these concerns may be mitigated, at least partially, if the product conveys information about its environmental virtues. However, these claims may have little effect in the absence of independent third party certification (Darnall *et al.* 2018). Consequently, different combinations of environmental and products attributes may lead to variations on consumers' WTP.

This paper aims to establish how the relationship between consumers' WTP for different types of products with "circular" environmental attributes. We first consider consumers' WTP for garments that either are made from either recycled fibers or are reused. Second, we assess whether WTP increases when consumers are provided information about the circular product's reduced environmental impacts. We then determine whether WTP differs based on whether the environmental information comes with independent third-party verification. We use an experimental approach and draw on data from a highly stratified sample of 2,400 U.S. and Italian consumers. Our results suggest that consumers' WTP circular garments, is lower than WTP for conventional versions of the same product, regardless of the environmental information that is provided. However, WTP improves for products that provide independent third-party certification for their environmental claims. These findings offer critical information that contributes to the debate about consumers' *WTP* for products with that advance sustainability objectives and how businesses can better market their circular economy products.

2. Theoretical background and hypotheses

2.1 Consumers' Willingness to Pay for Products with Environmental Attributes

Willingness to pay (WTP) is defined as the maximum price a buyer accepts to pay for a given number of goods or services (Le Galle-Ely, 2009). It thus differs from price (p) that is the amount of money required by the seller to conclude the transaction. In other words, WTP is a direct measure of consumers' real valuation of the product for his utility (Estes *et al.*, 2018) whereas p is the price applied by the seller. According to the Transaction utility theory (Thaler, 1983, 1985) the economic gain or loss from a transaction is called "acquisition utility" and depends on the utility of the good received compared to the expected expense (WTP - p): if WTP > p, the consumer will buy the good and be satisfied by the purchase because he will feel that the good values that money; whereas if WTP<p, the consumer won't buy the good unless he really needs it and there are no other possible alternatives. In this case, however, he will be dissatisfied by the purchase because he will perceive it as an economic loss, having paid more than he was willing to. Finally, if WTP=0, it means that the consumer would never buy that good, notwithstanding its price because he probably does not need it and/or does not like it at all.

WTP may change with the addition of features or qualities to the product: if consumers value that additional feature or quality because they think that it will improve the acquisition utility of the product, they will be willing to pay more, otherwise they will not value the product more and their WTP will remain the same. Thus, determining WTP for different versions of the same product - let's say a base version vs. an enhanced version with a particular feature or quality - is a way to measure the intrinsic value accorded by the consumer to that product's feature or quality (Allenby *et al.*, 2013). When the enhanced product's quality is an environmental attribute, WTP allows to measure the consumers' valuation of that specific environmental attribute.

Indeed, in the last decade, scholars have investigated the extent to which consumers' WTP is greater for products with fewer environmental impacts in comparison to WTP for their conventional alternatives (Biswas, 2016; Michaud *et al.* 2017; Wei *et al.* 2018).

Products that offer fewer environmental impacts, or have positive environmental attributes, tends to improve consumers' perceived value of the product. Improved perceived value is derived from several factors. In some instances, it relates to consumer expectations that the product imparts higher ethical value based on how the product was produced because of fair labor practices or sustainable production processes and these practices are consistent with consumers' personal beliefs and values (Sarti *et al.*, 2018). In other instances, consumers' perceived value from products with fewer environmental impacts may derive from stronger expectations for quality and improved health. This is especially the case for products, such as food, apparel, and cosmetics that are labelled as "natural," "organic," or "biological" (Aschemann-Witzel and Zielke, 2017; Ghazali *et al.*, 2017; Schuitema and de Groot, 2015; Janssen and Hamm, 2012). In each of these cases, scholars have found that consumers are willing to pay more for products that offer fewer environmental impacts (Moser 2015; Olson 2013; Drozdenko *et al.* 2011, Peattie and Crane 2005; Tanner and Walfing Kast 2003; Laroche *et al.* 2001; Guagnano 2001). However, our expectation is that these relationships will differ for "circular" products, where environmental attributes might be insufficient at increasing WTP because the perceived quality attributes are diminished.

2.2 Consumers' Willingness to Pay for "Circular" Products

Circular products are created in a way that optimizes resource efficiency. Resource efficiency is optimized by minimizing the environmental impact of the product lifecycle (EC 2015). This is achieved by reassessing traditional product design, which is a linear model - consisting of production, consumer use, and disposal. Circular products involve design processes in which disposed products can be used as inputs in manufacturing processes. These inputs lead to the creation of a new product. This "closed loop" approach diverts waste that otherwise would end up

in a landfill. Examples include the production of products that are made from recycled materials, such as garments that are made from recycled plastic bottles.

In other instances, circular products involve design processes that extend the durability of a product because they are easily reparable (BS, 2017; EMF, 2016; Bocken *et al.*, 2014; Geissdoerfer *et al.*, 2017; Tecchio *et al.*, 2017). In other instances, these products have features that make them more easily reused, remanufactured, or refurbished (BS, 2017; EMF, 2016; Bocken *et al.*, 2014; Geissdoerfer *et al.*, 2017; Tecchio *et al.*, 2017). This "extended life cycle" approach extends the time in which a product is in productive use before it ultimately is landfilled.

Regardless of their form, circular products - like other products that offer environmental attributes - may improve consumers' perceived value of the product. This is because circular products provide higher ethical value because they divert waste from landfills and these practices are congruent with consumers' personal beliefs and values (Sarti *et al.*, 2018). However, unlike traditional new products that offer environmental attributes, circular products, by definition, are produced by post-consumer waste. That is, the original product's end user fails to see value in it. The product then gets either remanufactured or reused. Our belief is that consumers assign a negative quality value to these products that is greater than the positive value associated with their environmental attributes.

Negative quality value that is derived from closed-loop products relate to the fact that recycled inputs are produced from post-consumer waste that is introduced into a manufacturing process. Generally, this waste requires reprocessing before it can be utilized in another product. For instance, clothing that is made from used plastic bottles which are reprocessed to create plastic fibers. These fibers become the inputs in the circular clothing production process. However, we anticipate consumers may have lower expectations about the product's overall quality. Lower product quality concerns relate to consumers' perceptions about circular product's contamination due to its past use. Contamination perception can derive from a real or imagined change in an object's state (Baxter *et al.*, 2017). Real changes could come from stains or imperfections found on the used garment or impurities detected in the recycled one. Imagined changes instead derive from mental associations. Negative mental associations generally link contamination with a risk for personal health (Muro and Noseworthy 2013; White *et al.* 2016; Hejmadi *et al.* 2004) and an invasion of interpersonal space (Argo *et al.* 2006, 2008; Belk 1988; Goffman 2009).

Hygiene considerations respond to feelings of disgust for something that could have been contaminated by pathogens (Curtis, 2011, 2013) because it has been used by somebody else and/or for other uses (Rozin *et al.*, 2000). Disgust tend to increase as the object becomes more intimate (e.g., closer to bodily intake) because of the higher direct exposure to the pathogens it might carry (Baxter *et al.*, 2017; Roux and Korchia, 2006; Rozin *et al.*, 2000).

The invasion of personal space can be enhanced or threatened with physical elements, such as smells, noise, and markings (Goffman 2009), but also by nonphysical elements. Consumers might devalue an object because it has been touched or used by another person (Belk 1988): this feeling can become even stronger with garments, like they could still carry the essence of the previous owner (Argo *et al.*, 2006). The remanufacturing process may help consumers create cognitive distance between the circular product and the fact that it is made from used inputs. Following this ratio, we should expect a higher devalue for second-hand garments than for garments made from recycled material. In fact, used garments retain their original form and involve few (if any) modifications prior to re-entering the market. A garment that is produced, used, and then makes its way into the second-hand market generally retains its original form. Because the circular product has been used by other individuals, consumers of circular products are likely to experience dissonance that diminishes their perceived quality value. Dissonance is the state of mind that holds opposing, and even irreconcilable ideas, at the same time (Festinger, 1957). Dissonance is due to consumers' negative perceptions about wearing second-hand clothes in terms of fear of contamination and personal space invasion (Baxter *et al.*, 2017). In this case, the positive environmental value of the circular product cannot outweigh the negative perceived risk of purchasing a product that may be of inferior quality. This diminished value is expected to be greater

than for closed-loop products because they retain their original form and so consumers can more readily identify them as being used. As a consequence, compared to new conventional products, circular products that may be perceived as being of lower quality (Magnier *et al.*, 2019; Xu *et al.*, 2014; Michaud and Llerena, 2011).

Hypothesis 1. Consumers' WTP for a product that either is made from recycled content or is second-hand is less than their WTP for new products that are made with virgin materials; the relationship is stronger for extended lifecycle products.

2.3 Environmental Information and Consumers' Willingness to Pay for "Circular" Products

Absent or vague environmental information can limit consumers' decision-making process and reduce their purchases of products with environmental attributes. Environmental conscious consumers cannot select the most environmentally-friendly product alternative if they are not provided with any information about products' environmental attributes (Pickett-Baker and Ozaki, 2008). By contrast, strong environmental information can influence consumers to purchase products with environmental attributes and fewer negative impacts (Cerri *et al.* 2018). This is because providing consumers with environmental information positively increases their awareness and enhances their perceptions about the effectiveness of their purchasing decision (Stern *et al.*, 1999). In particular, the provision of information increases consumers' perceived behavioral control (Ajzen 1991; Ajzen *et al.* 2004) and perceived consumer effectiveness (PCE) (Sharma and Jha, 2017). PCE is a measure of the subject's judgment in the ability of individual consumers to affect environmental resource problems (Roberts, 1996). PCE reflects a consumer's beliefs in being able to attain outcomes in a particular sphere of activity (Hanss and Doran, 2019). When applied to green purchasing it measures consumer's perception of being able to obtain a positive environmental impact through the purchase. In the case of large-scale environmental issues, such as climate change, the large number of people involved in the problem negatively affects single consumer's PCE (Hanss and Doran, 2019). The provision of clear information on which is the environmental attribute of the product and its positive impacts on the natural environment thus reinforces consumers' PCE. In fact, it helps them quantifying the real contribute they are making to environmental protection through their purchase, reinforcing their PCE.

Additionally, the provision of information can strengthen consumers' attitude to green products (Cerri *et al.*, 2018) especially when clear explanation of the positive impacts of the green product versus negative impacts of the non-green options are provided and quantified (Borin *et al.* 2011). In this case, in fact, consumers can experience a positive feeling of "doing the right thing", making a positive contribution to a common societal challenge and acting in accordance with their values and beliefs (Stern *et al.*, 1999). Furthermore, Cornelissen *et al.* (2008) found that making consumers more aware of the environmental benefits of some actions they regularly take, like purchasing second-hand or recycled products, can contribute to build a self-image of environmental conscious consumer that will further encourage them to adopt pro-environmental behavior in the future, e.g. selecting the most expensive but ecological product option.

The provision of environmental information can thus improve the overall product value perception by the consumers and thus, WTP for it. (Nassivera *et al.*, 2017; Gassler and Spiller, 2017; De Magistris and Garcia, 2016; Kang *et al.*, 2013).

Consumers are willing to pay more because, thanks to the information provided, they can recognize the positive impacts the products have on the environment in comparison to the conventional alternative (Borin *et al.*, 2011; Pickett-Baker and Ozaki, 2008), they feel more confident on the contribution they are making, reinforcing their PCE (Hanss and Doran, 2019; Sharma and Jha, 2017), they experience positive feelings of making the right thing and taking a behavior that is in line with their values and beliefs (Stern *et al.*, 1999) and they even develop a green self-image that boosts future pro-environmental behaviors (Cornelisson *et al.* 2008).

These positive effects on WTP for green products when environmental information is provided on

their environmental attributes apply also to circular products. However, in this case, the higher WTP for the environmental attributes is counter-balanced by the lower quality perception derived from the recycled or second-hand characteristic of the product: the final result could return an overall WTP that is still lower than WTP for the conventional alternative. In any case, we expect that WTP for a circular product will be higher when environmental information is provided with respect to the no information option and thus, we formulate the followings:

Hypothesis 2a. When consumers are provided information about the environmental benefits of a product made with recycled fibers, they are willing to pay more for it than the same product that lacks environmental information.

*Hypothesis 2b. When consumers are provided information about the enviro*nmental *benefits of a second-hand product, they are willing to pay more for it than the same product that lacks environmental information.*

Recently several scholars have emphasized how distrust is a barrier that prevents consumers from purchasing products with environmental attributes, even when these consumers are predisposed to purchase the product (Kwong and Balaji, 2016; Leonidou and Skarmeas, 2017). Distrust neutralizes consumers' positive affect and decreases a product's perceived value (Hughner *et al.*, 2007; Morel and Pruyn, 2003) because decision making risk is introduced and consumers worry that they are not getting their money's worth.

However, prior research also indicates that consumer distrust of environmental information varies based on the information source (Darnall *et al.* 2017). That is, if a producer provides information about its product's environmental attributes then consumers are likely to doubt that information (Darnall *et al.* 2012; Atkinson and Rosenthal, 2014; Darnall *et al.* 2017). By contrast, consumers elevate their trust for a product's environmental attributes if the product's environmental information is certified by an independent third party (Darnall *et al.*, 2016; Aguilar and Vlosky, 2006). This is because independent third verification is an important information cue that enhances the consumers' perceived legitimacy of product claims (Brach *et al.*, 2018; Darnall *et al.* 2017; Darnall and Sides 2008; Jiang *et al.* 2008). Verification lowers consumers' perceived risk of purchasing products with environmental attributes, thus reassuring them that the product offers ethical value and meets their quality expectations.

Third party verification is therefore likely to enhance consumers' WTP for products that have environmental attributes. This would be consistent with other WTP studies for non-circular products, in particular, those bearing the following third-party certified: Fair Trade and Rainforest Alliance, EU Ecolabel and FSC certification (Van Loo *et al.*, 2015; Vecchio and Annunziata, 2015; Testa *et al.*, 2013). Related to circular products, third party certification may help diminish the consumers' negative perceptions about recycled and second-hand products. As a consequence, we expect a higher WTP for circular products when the environmental information is provided by a third-party independent verifier. Thus, we posit that:

Hypothesis 3a. When consumers are provided information about the environmental benefits of a product made with recycled fibers, and that this information is verified by an independent third party, they are willing to pay more for it than the same product that lacks third party certification.

Hypothesis 3b. When consumers are provided information about the environmental benefits of a second-hand product, and that this information is verified by an independent third party, they are willing to pay more for it than the same product that lacks third party certification.

2.3 Environmental concern

Environmental concern plays an important role in shaping consumer's attitudes and influencing consumers' purchasing choices (Cerri *et al.*, 2018; Testa *et al.* 2015; Mainieri *et al.* 1997). According to the Elaboration-Likelihood Model (Petty and Cacioppo, 1990) and the Persuasion

Knowledge Model (Friestad and Wright 1994), consumers' motivations and knowledge influence how they interpret, realize and analyze any attempt of persuasion deriving from product labeling. For this reason, several scholars have explored how a different level of environmental concern or environmental involvement influences the effect of a green claim on purchasing behavior (Mo *et al.*, 2018; Hartmann et al, 2016; Schuhwerk and Lefkoff-Hagius, 1995). Consumers with high concern tend to have greater knowledge about environmental issues and should be able to recognize and positively interpret a product's environmental claims based on functional information (Matthes *et al.*, 2014). On the contrary, low concerned consumers tend to develop their opinions to visual ads paying low attention to additional information (Matthes *et al.*, 2014). Moreover, they may consider a green claim based on specific and quantitative information as exaggerated and therefore, as a form of greenwashing (Kwon, *et al.*, 2016).

Although empirical studies have tested the moderator role of environmental concern the results are not univocal (Kwon *et al.*, 2016; Matthes *et al.*, 2014; Bickart and Ruth, 2012;) and the effect of WTP remains unexplored. An increase of WTP requires an additional effort in a consumer that shall solve a potential conflict between financial and environmental logics. Moreover, previous scholars have explored the moderator effect of environmental concern mainly on the effect of the presence of a green claim (present vs absent) (Bickart and Ruth, 2012), functional information (functional vs visual) (Matthes *et al.*, 2014; Hartmann et al, 2016; Mo et al, 2018); green rating (green vs brown) (Kwon *et al.*, 2016), whereas how the effect of additional information related to environmental benefits as well as the assertion from an independent third-party is influenced by environmental concern needs further research. This research gap is particularly relevant for circular products where the environmental attribute can be manifest (the presence of recycled material) or hidden (as in the case of second-hand product). In the case of manifest environmental attribute, the effect of additional information on environmental benefit should be not influent on WTP since the role of high environmental concern should work already when basic information on the presence of recycled material in the product are provided. Moreover, in the case of hidden environmental attribute, by providing additional information, low environmental consumers could overcome an initial skepticism and increase their ability to recognize and interpret the environmental benefit related to a product and to evaluate the additional value ensured by the certification process itself. Thus, we posit that:

Hypothesis 4a: Consumers' environmental concern does not have a moderating influence on the effect of information about the environmental benefits as well as of information verified by an independent third party on WTP of a garment made with recycled fibers.

Hypothesis 4b: Consumers' environmental concern has a negative moderating influence on the effect of information about the environmental benefits as well as of information verified by an independent third party on WTP of a second-hand garment.

3 Methodology

3.1 Experiments Design

To investigate the effect of product's environmental attributes and provision of environmental information on consumers' WTP for circular products, we designed two experiments focused on a garment made with recycled fibers and second-hand garment.

The objective of the experiments was to measure if and in which amount WTP varied in relation to the different type of garment considered and the information provided. We thus designed two parallel experiments: the first on a garment - a hoodie - made with recycled fibers and the second on a second-hand hoodie.

Participants were placed into a 1 x 3 (control claim; environmental benefit claim and verified environmental benefit claim) between-subjects experiment.

The control groups served to verify if WTP for circular garment is lower than WTP for conventional garment priced at 40 dollars/euros (H1). The control claims stated: "if a hoodie made from virgin raw material costs 40 dollars, how much are you willing to pay for a hoodie made from recycled material?" for experiment one and: "if a brand new hoodie costs 40 dollars/euros, how much are you willing to pay for a second-hand hoodie?" for experiment 2.

Control groups also served as the reference benchmark for verifying if the provision of environmental information raises WTP for a circular garment (H2a and H2b). To verify these hypotheses, we added two treatments, one for each experiment, where we added information about the lower environmental impact of the circular garment (see Figure 1 and 2 for details) and ask respondents to indicate their WTP.

Finally, in order to measure the effect of third-party verification of the environmental information (H3a and H3b), we added another two treatments, one for each experiment, where we specified that "according to a third-party independent verifier" the circular garment option had a lower environmental impact than the regular one (see Figure 1 and 2 for details) and ask respondents to indicate their WTP.

Fig. 1: Experiment 1 stimuli

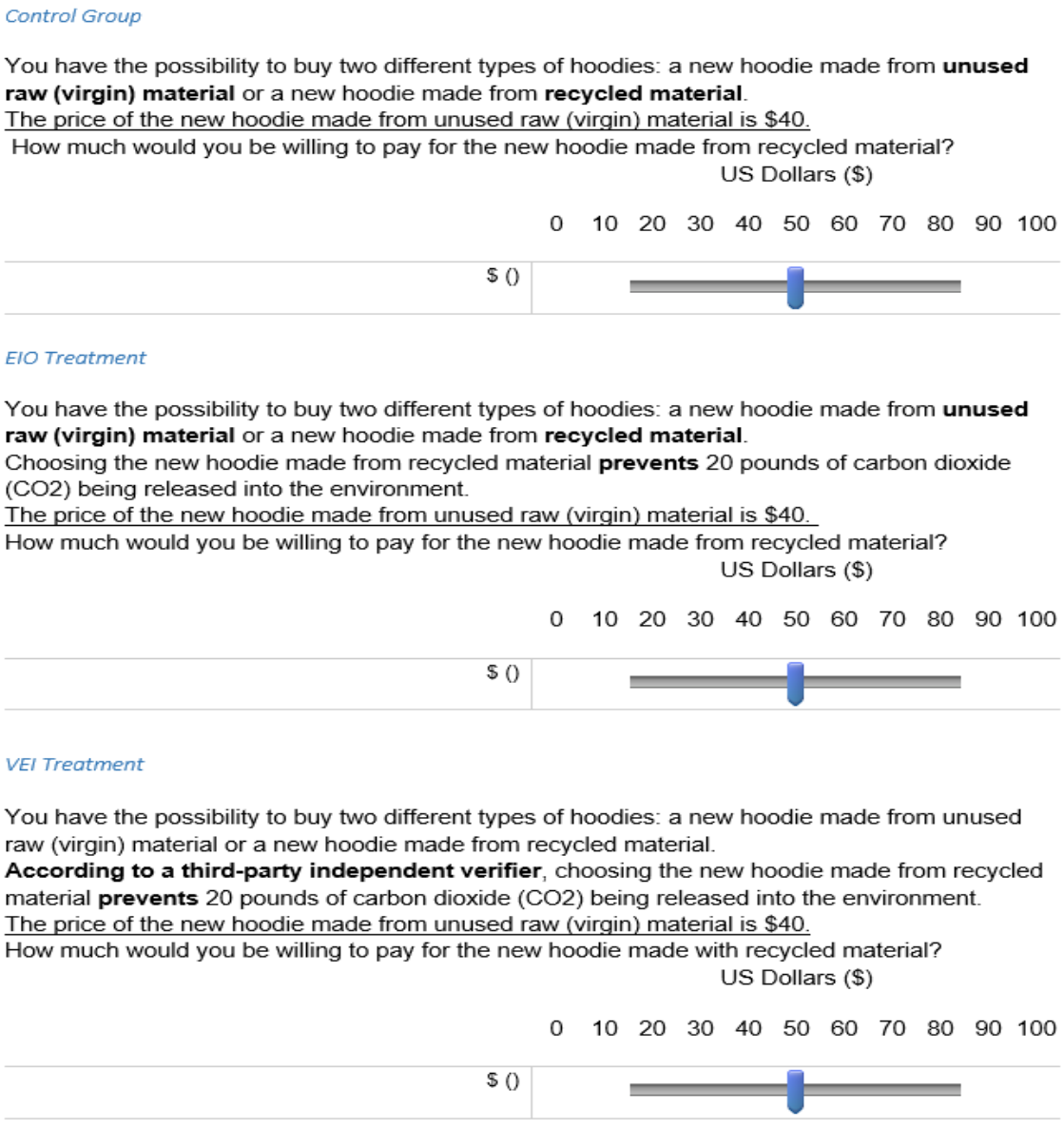
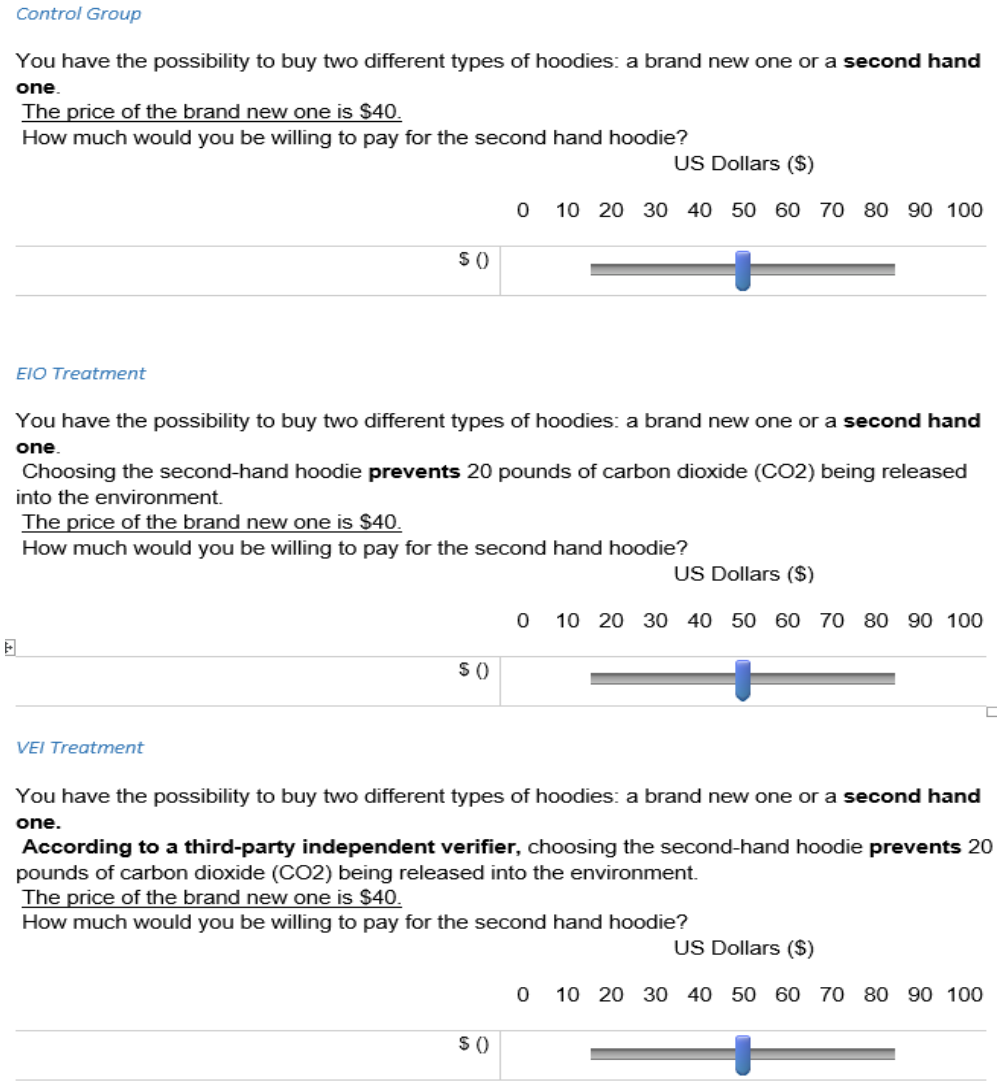


Fig. 2: Experiment 2 stimuli



In both the experiments, participants were randomly assigned to view one of three conditions in a three-cell (control message vs environmental benefit message vs. verified environmental benefit message) between participants design.

After exposure to the stimulus, participants were asked to express their WTP for the garment made from recycled material (Experiment 1) or the second-hand garment (Experiment 2) by selecting a price from 0 to 100 through a sliding bar. The pointer on the sliding bas was set initially at 40, the reference price for a conventional garment. The reason is that we wanted respondents to make a very important decision from the beginning: "am I going to pay more or less for the circular garment with respect to the conventional one?" If they wanted to pay more, they had to mode the pointer to the right, if they wanted to pay less, they had to move it to the left.

We chose to measure WTP for a hoodie since it is a garment commonly used by males and females of diverse ages, it is economically affordable, and it can be worn on top of another shirt and so is less personal than other garments.

3.2 Samples

Since both the experiments were conducted in US and Italy, four samples were recruited.

For Experiment 1 and Experiment 2 conducted in US, Amazon's Mechanical Turk (Mturk) was used to recruit participants and collect responses for both the pre-tests and the main studies.

Participants who were selected among Turkers had at least a 95% approval rate and 1,000 approved hits. These parameters are suggested for ensuring a high quality of the responses and a higher generalizability of the results (Bartel Sheehan and Pittman, 2016). They were compensated with a nominal fee (0.50 dollars) for their participation. To ensure that only US residents comprised the first experiment's sample, a filter was set up in order to block respondents in a non-US locations or who used a Virtual Private Server (VPS) to disguise or block their location (Burleigh *et al.*, 2018). MTurk has facilitated access from scientists to heterogeneous research participant-pool and its use in behavioral research has significantly increased in last years. Moreover, data collected by MTurk are judged of high quality and reliable for consumer research if several cautious are implemented (e.g unambiguous study materials, fair compensation to participants, unique stimuli) (Goodman and Paolacci 2017). Mullinix *et al.*, (2015) found that Mturk based experiment studies generally return results that are in line with nationally representative population-based samples experiments.

For the experiments involving Italian consumers, participants were recruited by a commercial surveying service provider from online access panel guarantying a representativeness for gender and age of Italian population between 18 and 75 years old, with a confidence level of 95% and a confidence interval of 5%. The Italian sample is in line with the National official census data: average age of Italian population = 45.7; education level: 15% less than high school diploma, 42% high school diploma, 20% bachelor and graduate (Istat, 2018); marital status: married 56.0%, single/never married 38.6%, divorced 3.8% and widowed 1.6% (Istat, 2019, limiting the sample to 19-64 years old Italian residents).

Table 1 summarizes the samples' characteristics in all studies considering only the participants that passed the manipulation checks.

Tab. 1: Samples description

Experiment	Experiment 1 on WTP for a recycled garment		Experiment 2 on WTP for a second-hand garment	
Country	US	Italy	US	Italy
N.	372	843	325	863
Screened out respondents for failure to answer correctly to manipulation check questions	35.0% Final sample n. = 242	12.0% Final sample n. = 742	23.4% Final sample n.=249	14.1% Final sample n. = 742
Gender	Female (56.0%) Male (44.0%)	Female (51.0%) Male (49.0%)	Female (62.0%) Male (38.0%)	Female (51.0%) Male (49.0%)
Age	Mean Age = 54.0 Range 31-87	Mean Age = 47.0 Range 18-75	Mean Age= 53.5 Range 32-87	Mean Age = 47.0 Range 18-75
Education	Less than high school 0.9% High School 9.4% Some college 21.7% Bachelor Degree 52.8% Graduate Degree 15.2%	Less than high school 15.2% High School 44.6% Some college 10.7% Bachelor Degree 10.4% Graduate Degree 19.1%	Less than high school 0.4% High School 6.9% Some college 22.7% Bachelor Degree 54.7% Graduate Degree 15.3%	Less than high school 15.5% High School 43.0% Some college 11.9% Bachelor Degree 9.8% Graduate Degree 19.8%
Civil State	Married or in a domestic partnership 57.9% Widowed 0.4% Divorced or separated 12.8% Single, never married 28.9%	Married or in a domestic partnership 64.8% Widowed 1.7% Divorced or separated 7.3% Single, never married 26.2%	Married or in a domestic partnership 53.0% Widowed 1.7% Divorced or separated 11.5% Single, never married 33.8%	Married or in a domestic partnership 63.0% Widowed 2.2% Divorced or separated 6.3% Single, never married 28.5%

3.3 Measurements and manipulation checks

In all four experiments, we checked for the actual comprehension of the manipulation by respondents through the insertion of 3 questions after the exposure to the stimulus (Shadish *et al.*, 2002). We wanted to be sure that the respondents really read and understood the garments' descriptions. We thus asked respondents to identify which type of product they had expressed their WTP between a garment made of new fiber, a garment made from recycled fiber or a second-hand garment. We checked if participants had comprehended the environmental information included in the message. Finally, respondents were asked whether an independent third-party verified the validity of environmental information or not. Respondents had to answer correctly to all the 3 manipulation check questions: the ones who failed even just one answer were screened out from the final sample.

Environmental concern was measured by combining and adapting six items from Dermody *et al.* (2015) and Polonsky *et al.* (2012) ("The environment is one of the most important issues facing the world today"; "There is too much unnecessary attention given in the media to global environmental issues"; "There is really no need for anyone to worry about protecting the environment, because it can take care of itself naturally"; "Environmental problems are not affecting my life personally"; "I can think of many things I'd rather do than work toward improving the environment"; "I have too many obligations to take an active part in an environmental organization"). For each assertion, participants expressed their level of agreement on a 7-point Likert scale (from "Strongly disagree" =1 to "Strongly agree"=7). Even if the scale was not previously validated in academic studies, the reliability of the scale was satisfactory in all studies (Experiment 1 US $\alpha = .89$; Experiment 1 Italy $\alpha = .83$; Experiment 2 US $\alpha = .83$; Experiment 2 Italy $\alpha = .86$).

Since several studies have found that individual level variables can influence purchasing behaviors (Testa *et al.*, 2015; Diamantopoulos *et al.*, 2003; Karp, 1996), variables measuring the age of the respondent, gender, his/her level of education, and civil status were included. A randomization check for age, gender, ethnicity, income, education level and marital status conducted through a set of ANOVAs and through a logistic regression showed no systematic differences for these variables across the experimental groups.

4. Results

4.1 Experiment 1 - garments made from recycled fiber

4.1.1 Total effect

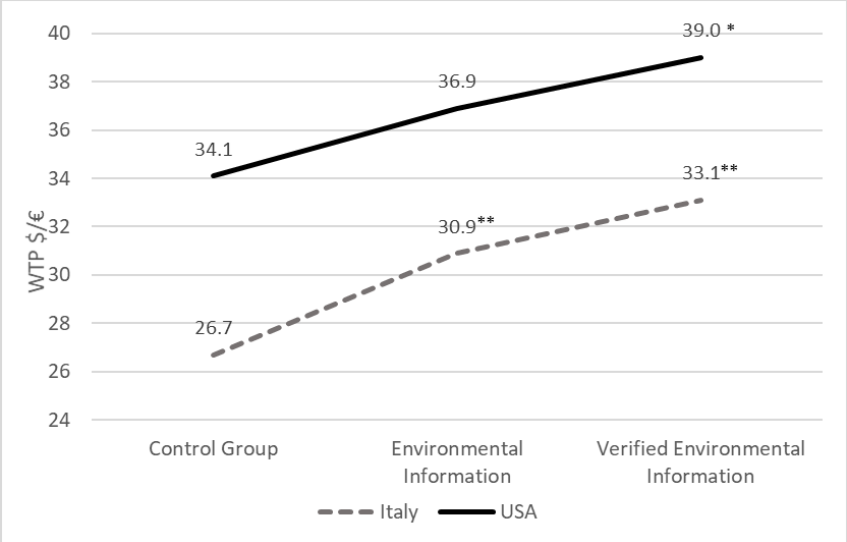
Participants were equally distributed among the three conditions: 33% each for the US sample and 30.7% (control message), 35.5% (environmental benefit message) and 32.8% (verified environmental benefit message) for the Italian one.

Independent-samples t-tests were conducted to compare the WTP mean in all the three conditions with respect to the reference price (40 dollars/euros). All the conditions register significantly lower values of WTP with respect to the reference price, supporting the idea that WTP for circular garments is lower than WTP for conventional ones. The only exception is the group of the US experiment exposed to verified environmental benefit message whose WTP is very close to 40 dollars ($M=39$, $SD=14.2$, $t(79)= - 0.61$, $p = 0.545$). These findings moderately support H4 showing that consumers' willingness to pay for a garment made of recycled fibers is comparable to their willingness to pay for clothes that are made of virgin fibers when information on environmental benefit is communicated and reliable.

In order to test H2 and H4 one-way between subjects ANOVA was conducted to compare the effect on WTP of the two treatments.

The results show a significant effect of the information provided on WTP at the $p<0.05$ level for the three conditions in both studies [$F(2, 239) = 2.99$, $p = 0.05$ for US and $F(2, 741) = 11.46$, $p = 0.00$ for Italy] (see Figure 3).

Fig. 3: WTP for a recycled hoodie according to the information provided ($/€)



*** Significant at the 99% Conf. Interval*
** Significant at the 95% Conf. Interval*

As shown in Tables 2 and Table 3, post hoc comparisons using the Tukey HSD test indicate that the mean score for verified environmental benefit message was significantly different to the control condition in both studies whereas the environmental benefit condition was significantly different to the control condition only for the Italian study. These results partially confirm H2 that states that when consumers are provided information about the environmental benefits of a garment made from recycled fibers, they are willing to pay more for it. Furthermore, these results support H4 that states that when consumers are provided information about the environmental benefits of a garment made from recycled fibers, and they are told that information is verified by an independent third party, they are willing to pay more for it.

Tab. 2: Posthoc comparisons using Tukey's HSD. Mean differencies shown for Experiment 1 on recycled garments in the US

Treatment	Control Group	Environmental Information	Verified Environmental Information
Control Group	1	2.8	4.9*
Environmental Information		1	2.1
Verified Environmental Information			1
*shows mean difference is significant at the 0.05 level. **shows mean difference is significant at the 0.01 level.			

Tab. 3: Posthoc comparisons using Tukey's HSD. Mean differencies shown for Experiment 1 on recycled garments in Italy

Treatment	Control Gro	Environmental Informati	Verified Environmental Informati
Control Group	1	4.2**	6.4**
Environmental Information		1	2.2
Verified Environmental Information			1
* shows mean difference is significant at the 0.05 level. **shows mean difference is significant at the 0.01 level.			

4.1.2 Interaction effect

In order to test Hypothesis 4a, we investigated an interaction term between manipulations (0 = control; 1 = environmental benefit information 2= verified environmental information) and environmental concern using multiple linear regression techniques.

Results of this analysis confirm, in both studies, our hypothesis via a not significant interaction effect (b = 0.022 SE =0.872 p = 0.980 in US experiment and b = 0.337 SE =0.602 p = 0.576 in Italy experiment).

In addition, a set of one-way ANOVAs between the environmental benefit and verified environmental benefit conditions with respect to the control groups were performed showing that for highly concerned respondents in the US context WTP for a garment of recycled fiber does not significantly change among the three conditions whereas in the Italian context only the participants exposed to verified environmental benefit message are willing to pay more than those exposed to control message. The same result arises analyzing the low concerned respondents. At the same time, as shown in Figure 4 and 5, it is evident that in both studies, highly environmental-concerned respondents are willing to pay significantly more than both low concerned and the whole sample results, especially in the US market, with prices ranging from 43 to 47 dollars for highly concerned vs 28 to 30 dollars for low concerned. These results validate our hypothesis 4a meaning that when environmental attributes are manifest, highly concerned respondents are already willing to pay more without the provision of information and thus the moderating effect of environmental concern is not significant.

Fig. 4: Environmental information x Environmental concern interaction on WTP for a garment of recycled fibers (Italy)

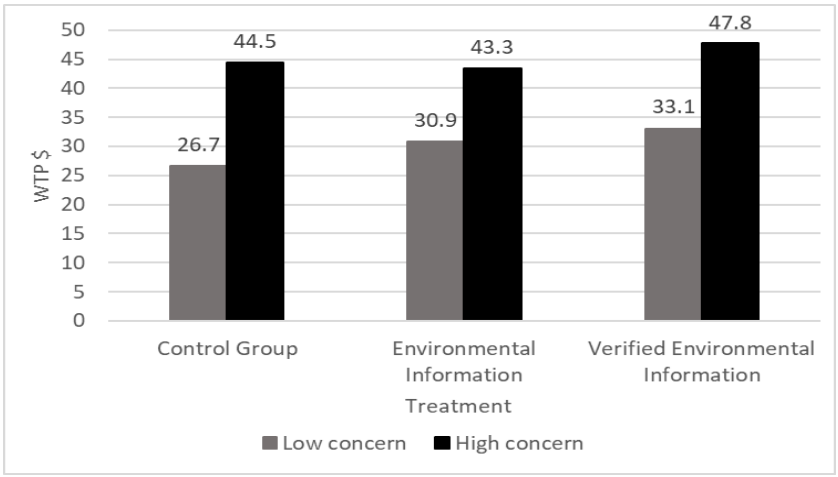
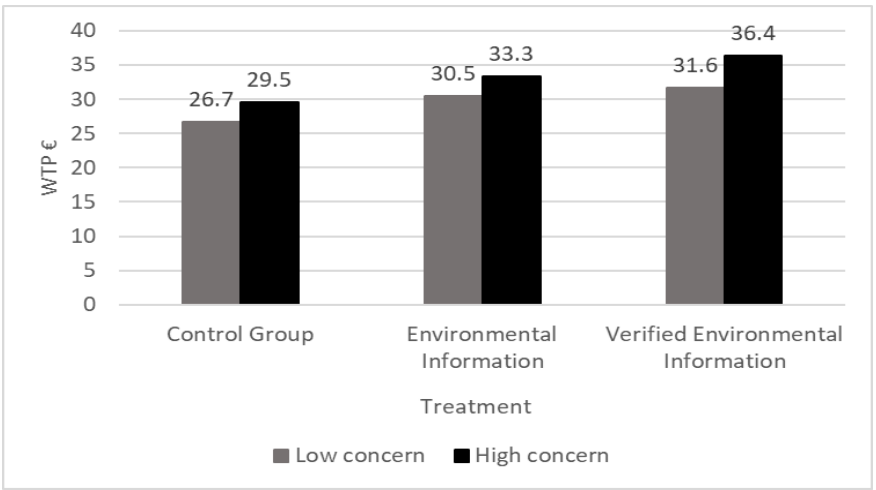


Fig. 5: Environmental information x Environmental concern interaction on WTP for a garment of recycled fibers (US)



4.2 Experiment 2 -second-hand garment

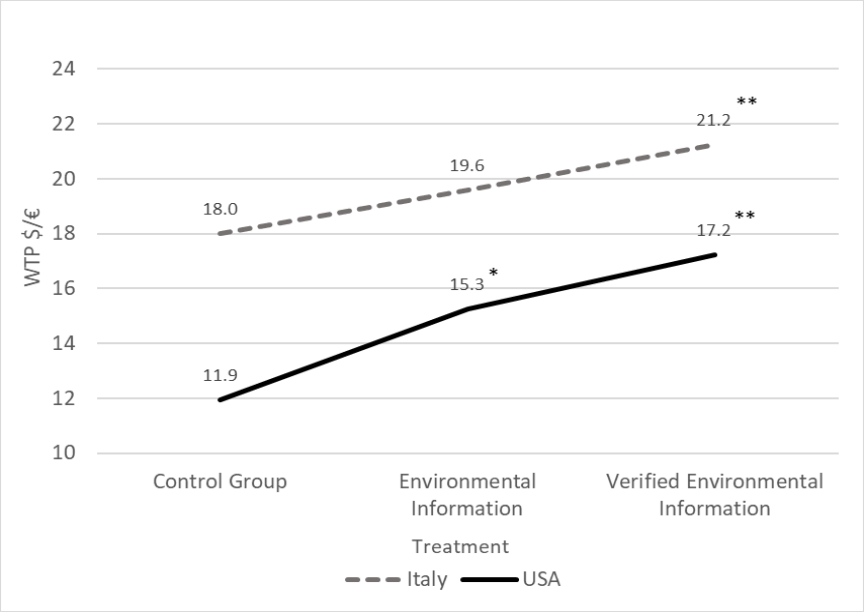
4.2.1 Total effect

In experiment 2 participants were equally distributed among the three manipulations: 33% each for the US sample and 33% (control message), 35% (environmental benefit message) and 32% (verified environmental benefit message) for the Italian one.

Independent-samples t-tests showed all the conditions in both studies registered significantly lower values of WTP with respect to the reference (M=39, SD=14.2, p = 0.000 in US and M=39, SD=14.2, p = 0.000 in Italy). So, as expected, Hypothesis 1 is confirmed since consumers' willingness to pay for a used garment is less than their willingness to pay for a brand new one.

Analogously to experiment 1, a one-way between subjects ANOVA was conducted to test H3 and H5. The results show a significant effect of the information provided on WTP at the p<0.01 level for the three conditions [F(2, 246) = 7.11, p = 0.001 for the Italian experiment and F(2, 741) = 4.73, p= 0.01] (See Figure 6).

Fig. 6: WTP for a second-hand hoodie according to the information provided ($/€)



Post hoc comparisons using the Tukey HSD test show that the WTP of participants exposed to verified environmental benefit was significantly different to the control condition in both studies whereas the WTP of participants exposed to environmental benefit manipulation was significantly different to the WTP of control group only in the US study.

Similarly to experiment 1, these results partially confirmed the Hypothesis 2b that states that when consumers are provided information about the environmental benefits of a used garment, they are willing to pay more for it (Table 4). Moreover, results support Hypothesis 3b that states that when consumers are provided verified information about the environmental benefits of a used garment, they are willing to pay more for it (Table 5).

Tab. 4: Posthoc comparisons using Tukey's HSD. Mean differences shown for Experiment 2 on second-hand garments in the US

Treatment	Control Gro	Environmental Informati	Verified Environmental Informati
Control Group	1	3.4*	5.3**
Environmental Information		1	1.9
Verified Environmental Information			1
*shows mean difference is significant at the 0.05 level. **shows mean difference is significant at the 0.01 level.			

Tab. 5: Posthoc comparisons using Tukey's HSD. Mean differences shown for Experiment 2 on second-hand garments in Italy

Treatment	Control Group	Environmental Informati	Verified Environmental Informati
Control Group	1	1.6	3.2**
Environmental Information		1	1.6
Verified Environmental Information			1
* shows mean difference is significant at the 0.05 level. **shows mean difference is significant at the 0.01 level.			

4.2.2 Interaction effect

The hypothesized interaction effect was tested as in experiment 1. Specifically, we built an interaction term manipulation (0 = control; 1 = environmental benefit information 2= verified environmental information) × environmental concern and performed a multiple linear regression.

In both studies, the interaction effect was not significant (b = --0.472 SE = 1.144, p = 0.680 in US experiment and b = 1.091 SE = 0.771, p = 0.158 in Italy experiment).

The results of a set of one-way ANOVAs show different outcomes in the two studies. In the US experiment, WTP for a used garment significantly change for highly concerned participants, raising of the almost the same amount: +6.4 dollars for environmental benefit condition ($p<0.05$) and +6.6 dollars for the certified environmental benefit condition ($p<0.05$).

On the contrary, Italian highly concerned participants did not show significant changes in the three conditions, even if WTP was already higher in the control group (20.15) with respect to the average WTP of all the respondents (17.99).

In both the experiments, the ANOVA between environmental benefit and control condition for low concerned participants was not significant, indicating that the effect of the provision of more specific environmental information does not significantly raise their WTP. However, the ANOVA between the verified environmental benefit and control condition is significant ($p<0.01$) showing a raise in WTP of 10.3 dollars in the US experiment and of 4.9 euros in the Italian one, thus confirming Hypothesis 4b. In fact, in this case, not manifest environmental attributes of second-hand products that are not recognized by low concerned respondents, become more concrete and reliable with the provision of verified information and their WTP is even higher than WTP of highly concerned respondents.

Fig. 7: Environmental information x Environmental concern interaction on WTP for a second-hand garment (US)

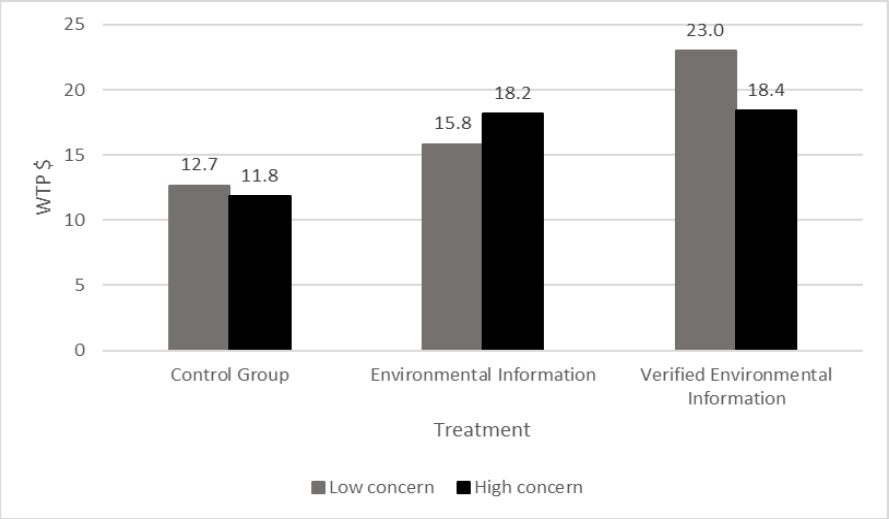
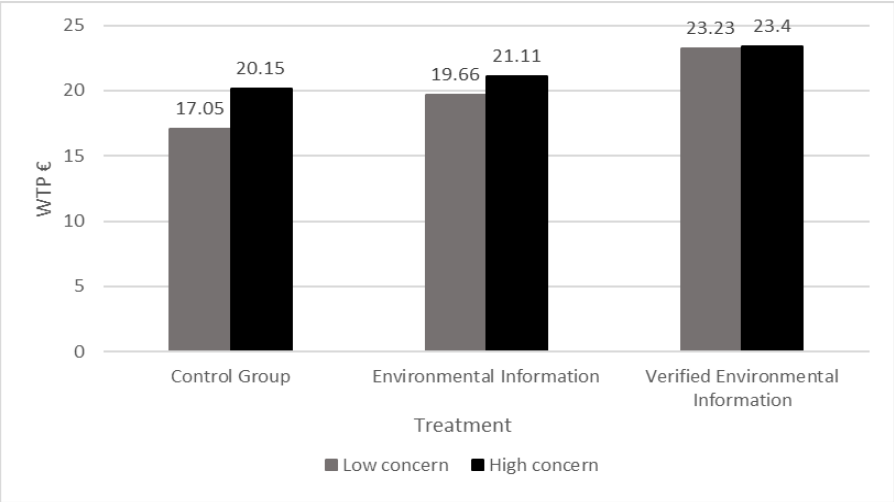


Fig. 8: Environmental information x Environmental concern interaction on WTP for a second-hand garment (Italy)



5. Discussion and conclusion

Our studies confirm that circular garments are valued less than conventional ones, supporting hypothesis 1. Furthermore, recycled garments are valued more than second-hand ones, especially in the US: this could be because some consumers, the more concerned about the environment, already recognize the environmental benefits of recycled garments and are willing to pay more for it even when no environmental information are provided at all, confirming hypothesis 4a. In the case of reused garments instead, this link with the environmental benefits is not so evident and thus, the WTP for it is way much lower.

When environmental information is provided, WTP raises significantly only in Italy, partially supporting Hypothesis 2a whereas it does not register a significant effect in US. Furthermore, in both the studies, WTP significantly remains lower with regard to the conventional garment's price (40$/€). This means that the negative lower perception of quality of recycled garments is only partially mitigated by the stated environmental attribute of the product, meaning that consumers still value more other product's characteristics such as safety and healthiness and/or do not trust enough the environmental claim. The provision of environmental information has a strong impact only when there is a strong emotional component, i.e. high environmental concern, and thus information work on the affective component of attitude, raising WTP over the conventional garment price in the US experiment (Cornelissen *et al.*, 2008).

The provision of verified environmental information significantly raises WTP in both studies, meaning that there is, indeed, a skepticism issue and also supporting Hypothesis 3a. However, whereas in the US, the verified information raises WTP at the same level of the starting price for a conventional garment (40$), this is not the case for the Italian consumers. Furthermore, again, the only case where WTP raises over the 40 $ threshold is when only the highly environmental concerned are considered and only in the US. Thus, recycled garments are always valued less than conventional ones: the provision of environmental information partially raises their value perception because it slightly affects the perceived behavioral control on the green purchase and improves the perceived consumers effectiveness but, these positive effects are not sufficient to counterbalance the negative value perception caused by the recycled qualification. The provision of information does not influence attitude towards the green product: when environmental concern is high, WTP is always higher but regardless the provision of environmental information - verified or not. This result confirms hypothesis 4a. Finally, skepticism appears to be a major issue in the US context, whereas it is less relevant for the Italian market.

Regarding second-hand garments, the provision of information works only in the US context, partially confirming Hypothesis 2b: as expected, here the environmental benefits of reused hoodies

are not evident thus, the provision of information registers a higher impact. This effect is confirmed by the fact that the highly concerned are not paying more than the lowly concerned for a reused garment when no information is provided. However, there is still a strong skepticism because WTP significantly raises in both studies when verified environmental information is provided, confirming Hypothesis 3b. However, skepticism, in this case, seems more related to the overall quality of the reused garment than to the truthfulness of the environmental claim. This effect is evident in both the studies when the interaction effect with environmental concern is analyzed since, as hypothized, a high level of environmental concern negatively moderates WTP: the low concerned are willing to pay much more for a reused garment when there is a third-party verifying the information - at the same level of highly concerned in Italy and even more than highly concerned in US. This could mean that they value the certification itself more than the information it verifies or, that only the provision of verified information allows low concerned to overcome their initial skepticism: probably, the verification increases the overall evaluation of the product that is extremely negative because of the contamination perception due to the second-hand qualification. In any case, reused garments are always valued much less than brand new ones, notwithstanding the information provided and the level of environmental concern of consumers.

Overall, the studies reveal that there is no "premium price" for circular garments. There is only a tiny market segmentation in the US that is characterized by a high level of environmental concern and that is willing to pay a little bit more for recycled garments: this segment does not need any additional information on the environmental benefit generated by a recycled garment because it recognizes and trusts it anyway. However, for the high majority of consumers, the verified information is the best choice because it addresses two issues at the same time: the skepticism about the truthfulness of the claim and the skepticism on the overall quality of the circular garment.

Our study provides useful information and insights for firms interested in marketing their "circular economy" products.

Under the theoretical point of view, these findings suggest that the category of circular garments follows different rules from green products. First of all, perceived behavioral control and perceived consumer effectiveness are already in place without the need of the provision of environmental information, especially for recycled garments because the causal relation to a lower environmental impact is already evident. On the other hand, the lower quality perception of recycled and second-hand products is mitigated by the presence of a third-party verification. However, the lower WTP in comparison to a new conventional garment highlights how even the verification is not enough to compensate the negative effect of the contamination perception of circular garments.

In this framework, the role of environmental concern affects the information effect in a negative way when it is provided on reused garments whereas it has no effect on recycled garments, confirming both Hypothesis 4a and 4b. We selected the stimuli in order to avoid images or any other type of emotional visual element thus excluding the influence of visual stimuli (Takahashi *et al.*, 2018; Schmuck *et al.* 2018). Moreover, we included just one functional ad - a simple statement providing a quantitative measure of the environmental benefit - in order to prevent cognitive overload (Kimura *et al.*, 2010) and to avoid too vague claims that could have sounded less reliable (Schmuck *et al.* 2018; Plank & Teichmann, 2018). Consequently, the emotional response is due exclusively to the information provided and the fact that it is verified or not. So, for recycled garments, the highly concerned respondents have also better environmental knowledge, recognizing without the need of information the higher environmental value of recycled garments: this is why they are always going to pay more with regard to low concerned, regardless of the provided information. In the case of reused garments instead, the provision of information affects more the low concerned than the highly concerned: low concerned cannot be really interested to the environmental benefits of the product thus, what they value is the verification itself. It could also be that, given a lower level of environmental knowledge they even misunderstand the real purpose of the verification and attribute it to other product's characteristics such as quality, safety and healthiness.

These findings could probably be applied to all the products for which safety, healthiness and cleanliness are of paramount importance, i.e. products that enter into direct contact with the body like food, cosmetics and furniture whereas in other contexts, the qualification of a product as recycled or second-hand does not affect significantly the overall product evaluation because other characteristics are considered more important. Future research could test the validity of these results with other product categories.

In this study we have not considered the influence of the brand reputation: other studies have detected an important moderator effect on the negative perception of refurbished or remanufactured products quality operated by a good reputation of the manufacturer (Vafadarnikjoo *et al.*, 2018; Gaur *et al.*, 2015). It would be of interest to verify the influence of brand reputation in WTP for circular garments as well, especially as an element that might compensate the negative contamination effect.

The literature (Darnall *et al.*, 2016; Aguilar and Vlosky, 2006) has highlighted how the subject providing the information can alter the information effect: future research could experiment with information provided by other types of subjects, i.e. government, NGOs, universities, trade associations, producers etc.

Finally, another perspective could be analyzing not only the final price but the whole "cost" of purchasing circular clothing including price, time and effort (Magnuson *et al.*, 2017) or other indirect economic benefits, i.e. taking into consideration very expensive clothes that are generally used for one special occasion, such as customs or formal dresses and verify the attitude towards this kind of second-hand clothes.

Finally, this study also presents some limitations. First of all, it addresses only the US and Italian market thus, it should be replicated in other geographical contexts: both other EU countries and China could represent interesting fields of study given the strong policies developed on circular economy. Furthermore, also the reaction of less developed markets where second-hand products are more common would deserve further investigation.

Secondly, this study deepened only the interaction with environmental concern: other variables should be considered such as the level of trust in claims, environmental knowledge and attitude towards the environment.

Third, this study focuses only on clothing: WTP for other kind of recycled or second-hand products could be very different and deserves further study.

References

AGUILAR F.X., VLOSKY R.P. (2006), "Consumer willingness to pay price premiums for environmentally certified wood products", *U.S. Forest Policy Economics*, vol. 9, n. 8, pp. 1100-1112.

AJZEN I. (1991), "The theory of planned behavior", *Organizational behavior and human decision processes*, vol. 50, n. 2, pp. 179-211.

AJZEN I., BROWN T.C., CARVAJAL F. (2004), "Explaining the discrepancy between intentions and actions: The case of hypothetical bias in contingent valuation", *Personality and Social Psychology Bulletin*, vol. 30 n. 9, pp. 1108-1121.

ALLENBY G.M., BRAZELL J., HOWELL J.R., ROSSI P.E. (2013), "Economic valuation of product features", *Quantitative Marketing and Economics*, vol. 12, pp. 421-456

ARGO J.J., DAHL D.W., MORALES A.C. (2006), "Consumer contamination: How consumers react to products touched by others", *Journal of Marketing*, vol. 70, n. 2, pp. 81-94

ARMSTRONG SOULE C.A., REICH B.J. (2015), "Less is more: is a green demarketing strategy sustainable?", *Journal of Marketing Management*, vol. 31, n. 13-14, pp. 1403-1427

ASCHEMANN-WITZEL J., ZIELKE S. (2017), "Can't buy me green? A review of consumer perceptions of and behavior toward the price of organic food", *Journal of Consumer Affairs*, vol. 51, n. 1, pp. 211-251

ATKINSON L., ROSENTHAL S. (2014), "Signaling the green sell: The influence of eco-label source, argument specificity, and product involvement on consumer trust", *Journal of Advertising*, vol. 43, n. 1, pp. 33-45.

BARTEL SHEEHAN AND K., PITTMAN M. (2016), *Amazon's Mechanical Turk for Academics: The HIT Handbook for Social Science Research*, Melvin & Leigh, Publishers LLC

BAXTER W., AURISICCHIO M., CHILDS P. (2017), "Contaminated interaction: another barrier to circular material flows", *Journal of Industrial Ecology*, vol. 21, n. 3, pp. 507-516.

BELK R.W. (1988), "Possessions and the extended self", *The Journal of Consumer Research*, vol. 15, ed. 2, pp. 139-168.

BICKART B.A., RUTH. J.A. (2012), "Green Eco-Seals and Advertising Persuasion", *Journal of Advertising*, vol. 41, n. 4, pp. 51-67

BISWAS A. (2016), "A Study of Consumers' Willingness to Pay for Green Products", *Journal of Advanced Management Science*, vol. 4, n. 3, pp. 211-215

BOCKEN N.M.P., SHORT S.W., RANA P., EVANS S. (2014), "A literature and practice review to develop sustainable business model archetypes", *Journal of Cleaner Production*, n. 65, pp. 42-56.

BORIN N., CERF D.C., KRISHNAN R. (2011), "Consumer effects of environmental impact in product labeling", *Journal of Consumer Marketing*, vol. 28, n.1, pp. 76-86.

BOSTON CONSULTING GROUP. (2017), "Pulse of the fashion industry", pp.19. Available at: https://globalfashionagenda.com/initiatives/pulse/ Accessed on: January 2020.

BRACH S., WALSH G., SHAW D. (2018), "Sustainable consumption and third-party certification labels: Consumers' perceptions and reactions", *European management journal*, vol. 36, pp. 254-265 http://dx.doi.org/10.1016/j.emj.2017.03.005

BS 8001:2017. (2017), "Framework for implementing the principles of the circular economy in organizations. Guide." Accessible at: https://shop.bsigroup.com/ProductDetail?pid=000000000030334443&_ga=2.261107461.982021213.1558578179-729817842.1558578178 . Accessed on: August 2018.

BURLEIGH T., KENNEDY R., CLIFFORD S. (2018), How to Screen Out Vps and International Respondents Using Qualtrics: A Protocol. Available at SSRN: https://ssrn.com/abstract=3265459

CATSKA P., CORBETT J. (2014), "Governance of eco-labels, expert opinion and media coverage", *Journal of Business Ethics*, vol. 135, pp. 309-326

CERRI J., TESTA F., RIZZI F. (2018), "The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products", Journal of Cleaner Production, vol. 175, pp. 343-353

CERVELLON M.C., CAREY L., HARMS T. (2012), "Something old, something used: determinants of women's purchase of vintage fashion vs. second-hand fashion", *International Journal of retail & distribution Management*, vol. 40, n. 12, pp. 956-974.

CHO E., GUPTA S., KIM Y.K. (2015), "Style consumption: its drivers and role in sustainable apparel consumption", *International journal of consumer studies*, vol. 39, n- 6, pp. 661-669.

CIRAIG (2015), "Circular economy: a critical literature review of concepts", Accessible at: http://www.ciraig.org/pdf/CIRAIG_Circular_Economy_Literature_Review_Oct2015.pdf. Accessed on: August 2018.

CORNELISSEN G., PANDELAERE M., WARLOP L., DEWITTE S. (2008), "Positive cueing: promoting sustainable consumer behavior by cueing common environmental behaviors as environmental", *International Journal of Research in Marketing*, vol. 25, n. 1, pp. 46-55.

DARNALL N., SIDES S. (2008), "Assessing the performance of voluntary environmental programs: Does certification matter?", *Policy Studies Journal*, vol. 36, n. 1, pp. 95-117.

DARNALL N., JI H., POTOSKI M. (2017), "Institutional design of ecolabels: sponsorship signals rule strength", *Regulation & Governance*, vol. 11, pp. 438-450

DARNALL N., JI H., VAZQUEZ-BRUST,D.A. (2018), "Third-party certification, sponsorship, and consumers' ecolabel use", *Journal of Business Ethics*, vol. 150, n. 4, pp. 953-969

DARNALL N., PONTING C., VAZQUEZ-BRUST D.A. (2012), "Why consumers buy Green", In: *Green Growth: Managing the Transition to a Sustainable Economy*. Springer Netherlands, pp. 287-308

DE MAGISTRIS T., GRACIA A. (2016), "Consumers' willingness-to-pay for sustainable food products: The case of organically and locally grown almonds in Spain", *The Journal of Consumer Affairs*, vol. 49, n. 2, pp. 457-471

DEMARQUE C., CHARALAMBIDES L., HILTON D.J., WAROQUIER L. (2015), "Nudging sustainable consumption: The use of descriptive norms to promote a minority behavior in a realistic online shopping environment", *Journal of Environmental Psychology*, vol. 43, pp. 166-174

DERMODY J., HANMER-LLOYD S., KOENIG-LEWIS N., ZHAO A.L. (2015), "Advancing sustainable consumption in the UK and China: the mediating effect of pro-environmental self-identity", *Journal of Marketing Management*, vol. 31, n. 13-14, pp. 1472-1502

DIAMANTOPOULOS A., SCHLEGELMILCH B.B., SINKOVICS R.R., BOHLEN G.M. (2003), "Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation", *Journal of Business Research*, vol. 56, pp. 465-480.

DIDIER T., LUCIE S. (2008), "Measuring consumer's willingness to pay for organic and Fair Trade products", *International Journal of Consumer Studies*, vol. 32, pp. 479-490

DROZDENKO R.G., JENSEN M., COELHO D. (2011), "Pricing of Green Products: Premiums Paid, Consumer Characteristics and Incentives", *International Journal of Business, Marketing, and Decision Sciences* vol. 4, n. 1, pp. 106-115.

ELLEN MACARTHUR FOUNDATION (2017), "A new textiles economy: Redesigning fashion's future", available at: http://www.ellenmacarthurfoundation.org/publications

ELVING W.J. (2013), "Scepticism and corporate social responsibility communications: the influence of fit and reputation", *Journal of Marketing Communication*, vol. 19, n. 4, pp. 277-292

ESTES Z., BROTTO L., BUSACCA B. (2018), "The value of art in marketing: An emotion-based model of how artworks in ads improve product evaluations", *Journal of Business research*, vol. 85, pp. 396-405.

EUROPEAN COMMISSION COM (2015)614, "Closing the loop - An EU Action Plan for a Circular Economy", Bruxelles, 2 December 2015.

EUROPEAN ENVIRONMENT AGENCY (2014), "Environmental indicator report 2014: Environmental impacts of production-consumption systems in Europe", available at: https://www.eea.europa.eu/publications/environmental-indicator-report-2014

FESTINGER L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.

FRIESTAD M., WRIGHT P. (1994), "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts", *Journal of Consumer Research*, vol. 21, pp. 1-31.

GASSLER B., SPILLER A. (2017), "Is it all in the MIX? Consumer preferences for segregated and mass balance certified sustainable palm oil", *Journal of Cleaner Production*, vol. 195, pp. 21-31

GAUR J., AMINI M., BANERJEE P., GUPTA R. (2015). Drivers of consumer purchase intentions for remanufactured products: A study of Indian consumers relocated to the USA. *Qualitative Market Research: An International Journal*, vol. 18, n. 1, pp. 30-47.

GEISSDOERFER M., SAVAGET P., BOCKEN N.M.P., HULTINK E.J. (2017), "The Circular Economy - A new sustainability paradigm?", *Journal of Cleaner Production*, vol. 143, pp. 757-768

GHAZALI E., SOON P.C., MUTUM D.S., NGUYEN B. (2017), "Health and cosmetics: Investigating consumers' values for buying organic personal care products", *Journal of Retailing and Consumer Services*, vol. 39, pp. 154-163

GOFFMAN E. (2009). *Relations in public*. London: Transaction, 31 December.

GOODMAN J.K., PAOLACCI G. (2017), "Crowdsourcing Consumer Research", *Journal of Consumer Research*, vol. 44, n. 1, pp. 196-210.

GUAGNANO G.A. (2001), "Altruism and Market-Like Behavior: An Analysis of Willingness to Pay for Recycled Paper Products", *Population and Environment*, vol. 22, pp. 425-438

HAMZAOUIL L.E., LINTON J.D. (2010), "New or recycled products: how much are consumers willing to pay?", *Journal of Consumer Marketing*, vol. 27, n. 5, pp. 458-468

HANSS D., DORAN R. (2019), "Perceived Consumer Effectiveness", In: LEAL FILHO W., AZUL A., BRANDLI L., ÖZUYAR P., WALL T. (eds) *Responsible Consumption and Production. Encyclopedia of the UN Sustainable Development Goals*. Springer, Cham

HARTMANN P., APAOLAZA V., EISEND M. (2016), „Nature Imagery in Non-Green Advertising: The Effects of Emotion, Autobiographical Memory, and Consumer's Green Traits",*Journal of Advertising*, vol. 45, n. 4, pp. 427-440

HEJMADI A., ROZIN P., SIEGAL M. (2004), "Once in contact, always in contact: Contagious essence and conceptions of purification in American and Hindu Indian Children", *Developmental Psychology*, vol. 4, n.4, pp. 467-476.

HINNEN G., HILLE S.L., WITTMER A. (2017), "Willingness to Pay for Green Products in Air Travel: Ready for Take-Off?", *Business Strategy and the Environment*, vol. 26, pp. 197- 208

HUGHNER R.S., MCDONAGH P., PROTHERO A., SHULTZ C.J., STANTON J. (2007), "Who are organic food consumers? A compilation and review of why people purchase organic food", *Journal of Consumer Behavior*, vol. 6, n. 2-3, pp. 94-110

HUSTVEDT G., BERNARD J.C. (2008), "Consumer willingness to pay for sustainable apparel: the influence of labelling for fibre origin and production methods", *Journal of Consumer Studies*, vol. 32, pp. 481-498

JANSSEN M., HAMM U. (2012), "Product labelling in the market for organic food: Consumer preferences and willingness-to-pay for different organic certification logos", *Food Quality and Preference*, vol. 25, n. 1, pp. 9-22.

JAYAWARDHENA C., MORRELL K., STRIDEC C. (2016), "Ethical consumption behaviours in supermarket shoppers: determinants and marketing implications", *Journal of marketing management*, vol. 32, n. 7-8, pp. 777-805

JIANG P., JONES D.B., JAVIE S. (2008), "How third-party certification programs relate to consumer trust in online transactions: An exploratory study", *Psychology & Marketing*, vol. 25, n. 9, pp. 839-858

KANG J., LIU C., KIM S.H. (2013), "Environmentally sustainable textile and apparel consumption: The role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance", *International Journal of Consumer Studies*, vol. 37, n. 4, pp. 442-452

KARP D.G. (1996), "Values and Their Effect on Pro-Environmental Behavior", *Environment and Behavior*, vol. 28, pp. 111-133

KIMURA A., WADA Y., KAMADA A., MASUDA T., OKAMOTO M., GOTO S.I. TSUZUKI D., CAI D., OKA, T. (2010), "Interactive effects of carbon footprint information and its accessibility on value and subjective qualities of food products", *Appetite*, vol. 55, n. 2, pp. 271-278

KLIMAS C.A., WEBB E. (2018), "Comparing stated and realized preferences for shade-grown vs. conventionally grown coffee", *International Journal of Consumer Studies*, vol. 42, pp. 76- 92

KWON W., ENGLIS B., MANN M. (2016), "Are third-party green-brown ratings believed?: The role of prior brand loyalty and environmental concern", *Journal of Business Research*, vol. 69, pp. 815-822

KWONG S.G., BALAJI L.S. (2016), "Linking Green Skepticism to Green Purchase Behavior", *Journal of Cleaner Production*, vol. 131, pp. 629-638

LAROCHE M., BERGERON J., BARBARO-FORLEO G. (2001), "Targeting Consumers Who Are Willing to Pay More for Environmentally Friendly Products", *Journal of Consumer Marketing*, vol. 18, n. 6, pp. 503-520

LE GALL-ELY M. (2009), "Definition, Measurement and Determinants of the Consumer's Willingness to Pay: a Critical Synthesis and Directions for Further Research", *Recherche et Applications en Marketing*, vol. 24, n. 2, pp. 91-113.

LEONIDOU C.N., SKARMEAS D. (2017), "Gray Shades of Green: Causes and Consequences of Green Skepticism", *Journal of Business Ethics*, vol. 14, n. 2, pp. 401-415

LOMBARDI G.V., BERNI R., ROCCHI B. (2017), "Environmental friendly food. Choice experiment to assess consumer's attitude toward "climate neutral" milk: the role of communication", *Journal of Cleaner Production*, vol. 142, n. 1, pp. 257-262,

LOPES E.V., TEIXEIRA VEIGA R. (2017), "Increasing purchasing intention of eco-efficient products: the role of the advertising communication strategy and the branding strategy", *Journal of Brand Management*, vol. 26, pp. 550-565

MAGNIER L., MUGGE R., SCHOORMANS J.L.P (2019), "Turning ocean garbage into products - Consumers' evaluations of products made of recycled ocean plastic", *Journal of Cleaner Production*, vol. 215, pp. 84-98.

MAGNUSON B., REIMERS V., CHAO F. (2017), "Re-visiting an old topic with a new approach: the case of ethical clothing", *Journal of Fashion Marketing and Management*, vol. 21, n. 3, pp. 400-418

MAINIERI T., BARNETT E.G., VALDERO T.R, UNIPAN J.B., OSKAMP S. (1997), "Green Buying: The Influence of Environmental Concern on Consumer Behavior", *The Journal of Social Psychology*, vol. 137, n. 2, pp. 189-204

MATTHES J., WONNEBERGER A., SCHMUCK D. (2014), "Consumers' green involvement and the persuasive effects of emotional versus functional ads", *Journal of Business Research*, vol. 67, pp. 1885-1893

MCKINSEY & COMPANY (2019), "Style that's sustainable: A new fast-fashion formula", available at: https://www.mckinsey.com/business-functions/sustainability/our-insights/style-thats-sustainable-a-new-fast-fashion-formula#

MICHAUD C., LLERENA D. (2011), "Green consumer behaviour: an experimental analysis of willingness to pay for remanufactured products", *Business Strategy and the Environment*, vol. 20, pp. 408-420

MICHAUD C. IRAGAËL J., LLERENA D., LOBASENKO V. (2017), "Consumers' willingness to pay for sustainable and innovative products: A choice experiment with upgradeable products", International Journal of Sustainable Development, vol. 20, n.1/2, pp. 8

MO Z., LIU M.T., LIU Y. (2018), "Effects of functional green advertising on self and others", Psychology and *Marketing*, vol. 35, n. 5, pp. 368-382

MOBLEY A.S., PAINTER T.S., UNTCH E.M., RAO UNNAVA H. (1995), "Consumer evaluation of recycled products", *Psychology and Marketing*, vol. 12, n. 3, pp. 165-176

MOREL K.P.N., PRUYN A.T.H. (2003), "Consumer Skepticism Toward New Products", In D. TURLEY, & S. BROWN (Eds.), *European Advances in Consumer Research*, vol. 6, pp. 351-358, Provo, UT, USA

MOSER A.K. (2015), "Thinking green, buying green? Drivers of pro-environmental purchasing behavior", *Journal of Consumer Marketing*, vol. 32, n. 3, pp.167-175

MULLINIX K.J., LEEPER T.J., DRUCKMAN J.N., FREESE J. (2015), "The generalizability of survey experiments", *Journal of Experimental Political Science*, vol. 2, n. 2, pp. 109- 138

MURO F.D., NOSEWORTHY T.J. (2013), "Money isn't everything, but it helps if it doesn't look used: How the physical appearance of money influences spending", *Journal of Consumer Research*, vol. 39, n. 6, pp. 1330-1342.

NASSIVERA F., TROIANO S., MARANGON F., SILLANI S., MARKOVA NENCHEVA I. (2017), "Willingness to pay for organic cotton", *British Food Journal*, vol. 119, N. 8, pp. 1815-1825

OLSON E. (2013), "It's not easy being green: the effects of attribute tradeoffs on green product preference and choice", *Journal of the Academy of Marketing Science*, vol. 41, n. 2, pp. 171-184

PETTY R.E., CACIOPPO J. T. (1990), "Involvement and persuasion: Tradition versus integration", *Psychological Bulletin*, vol. 107, pp. 367-374

PICKETT-BAKER J., OZAKI R. (2008), "Pro-environmental products: marketing influence on consumer purchase decision", *Journal of Consumer Marketing*, vol. 25, n. 5, pp. 281-293

PLANK A., TEICHMANN K. (2018), "A facts panel on corporate social and environmental behavior: Decreasing information asymmetries between producers and consumers through product labeling", Journal of cleaner production, vol. 177, pp. 868-877

POLONSKY M.J., VOCINO A., GRAU S.L., GARMA R., FERDOUS A.S. (2012), "The impact of general and carbon-related environmental knowledge on attitudes and behaviour of US consumers", *Journal of Marketing Management*, vol. 28, n. 3-4, pp. 238-263

ROBERTS J.A. (1996), "Green consumer in the 1990s: profile and implications for advertising", *Journal of Business Research*, vol. 36, pp. 217-232.

ROUX D., KORCHIA M. (2006), "Am I what I wear? An exploratory study of symbolic meanings associated with secondhand clothing", *Advances in Consumer Research*, vol. 33, pp. 29-35.

ROZIN P., HAIDT J., MCCAULEY C. (2000), "Disgust", in: *Handbook of Emotions*, 2nd edn. (ed. by M. Lewis & J.M. Haviland-Jones), Guilford Press, New York, pp. 637-653.

SARTI S. DARNALL N., TESTA F. (2018), "Market segmentation of consumers based on their actual sustainability and health-related purchases", *Journal of Cleaner Production*, vol. 192, pp. 270-280

SCHMUCK D., MATTHES J., NADERER B. (2018), "Misleading Consumers with Green Advertising? An Affect-Reason-Involvement Account of Greenwashing Effects in Environmental Advertising", *Journal of Advertising*, vol. 47, n. 2, pp. 127-145

SCHUHWERK M.E., LEFKOFF-HAGIUS R. (1995), "Green or Non-Green? Does Type of Appeal Matter When Advertising a Green Product?", *Journal of Advertising*, vol. 24, n. 2, pp. 45-54

SCHUITEMA G., DE GROOT J.I.M. (2015), "Green consumerism: The influence of product attributes and values on purchasing intentions", *Journal of Consumer Behaviour*, vol. 14, n. 1, pp. 57-69

SHADISH W.R. COOK T.D., CAMPBELL T. (2002), "Experimental and quasi-experimental design for generalized causal inference", Houghton, Mifflin and Company.

SHARMA R., JHA M. (2017), "Values influencing sustainable consumption behaviour: Exploring the contextual relationship", *Journal of Business Research*, vol. 76, pp. 77-88

STERN P.C., DIETZ T., ABEL T., GUAGANO G.A., KALOF L. (1999), "A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism", Human Ecology Review, vol. 6, n. 2, pp. 81-97

TAKAHASHI R., TODO Y., FUNAKI Y. (2018), "How can we motivate consumers to purchase certified forest coffee? Evidence from a laboratory randomized experiment using eye-trackers", *Ecological economics*, vol. 150, pp. 107-121

TANNER C., WÖLFING KAST S. (2003), "Promoting sustainable consumption: determinants of green purchases by swiss consumers", *Psychology & Marketing*, vol. 20, n. 10, pp. 883-902.

TECCHIO P., MCALISTER C., MATHIEUX F.,ARDENTE F. (2017), "In search of standards to support circularity in product policies: A systematic approach", *Journal of Cleaner Production*, vol. 168, pp. 1533-1546

TESTA F., IRALDO F., VACCARI A., FERRARI E. (2015), "Why Eco-labels can be Effective Marketing Tools: Evidence from a Study on Italian Consumers", *Business Strategy and the Environment*, vol. 24, n. 4, pp. 252-265

TESTA F., RUSSO M.V., CORNWELL T.B., MCDONALD A., REICH B. (2018), "Social Sustainability as Buying Local: Soft Policy, Meso Level Actors and Social Influences on Purchase Intentions", *Journal of Public Policy & Marketing*, vol. 37, n. 1, pp. 152-166

THOGERSEN J., NIELSEN K.S. (2016), "A better carbon footprint label", *Journal of Cleaner Production*, vol. 125, pp. 86-94

TSEN C., PHANG G., HASAN H., BUNCHA M.R. (2006), "Going green: A study of consumers' willingness to pay for green products" in: Kota Kinabalu, *International Journal of Business and Society*, vol. 7, n. 2, pp. 40-54

VAFADARNIKJOO A., MISHRA,N., GOVINDAN K., CHALVATZIS K. (2018), "Assessment of Consumers' Motivations to Purchase a Remanufactured Product by Applying Fuzzy Delphi Method and Single Valued Neutrosophic Sets", *Journal of Cleaner Production*, vol. 196, pp. 230-244

VAN LOO E. J., CAPUTO V., NAYGA JR., RODOLFO M., SEO H., ZHANG B., VERBEKE W. (2015) "Sustainability labels on coffee: Consumer preferences, willingness-to-pay and visual attention to attributes", *Ecological Economics*, vol. 118, pp. 215-225

VECCHIO R., ANNUNZIATA A. (2015), "Willingness-to-pay for sustainability-labelled chocolate: an experimental auction approach", *Journal of Cleaner Production*, vol. 86, pp. 335-342

WEI S., ANG T., JANCENELLE V.E. (2018), "Willingness to pay more for green products: The interplay of consumer characteristics and customer participation", *Journal of Retailing and Consumer Services*, vol. 45, pp. 230-238

WHITE K., LIN L., DAHL D.W., RITCHIE R. (2016), "When do consumers avoid imperfections? Superficial packaging damage as a contamination cue", *Journal of Marketing Research*, vol. 51, n. 1, pp. 110-123

XU Y., CHEN Y., BURMAN R., ZHAO H. (2014), "Second-hand clothing consumption: a cross-cultural comparison between American and Chinese young consumers", *International Journal of Consumer Studies*, vol. 38, pp. 670-677.

The impact of sustainability orientation on firm propensity to ally♦

STEFANO ROMITO• ANGELOANTONIO RUSSO♠ CLODIA VURRO♠

Abstract

Objectives. *The aim of this paper is to analyse the effect of firm sustainability orientation, defined as the overall proactive strategic stance of firms toward the integration of environmental and social concerns and practices into their strategic and operational activities, on its propensity of making alliances.*

Methodology. *We validate our arguments using panel data on 10.509 unique firm-year observations over the period 2003-2017.*

Findings. *We find support for our baseline hypothesis: sustainability orientation has a positive impact on alliance formation. Additionally, we find that the hypothesized relationship is stronger for firms with lower expected value creation and for those that operates in opaque contexts.*

Research limits. *Our work represents an initial attempt to investigate the role of firm sustainability orientation in explaining firm alliance propensity. In so doing, we adopted a firm level perspective assuming alliance counterparts to be homogeneous, which represents the main limitation of this study. Other limitations, as well as topics for future research are discussed in the last section.*

Practical implications. *Our arguments and findings emphasize the critical role played by the way in which the firm manages the network of relationships in which it is embedded, in addition to the considerations about the type of relationship a firm owns that have been widely analysed. In particular, our study contributes to obtain a deeper understanding of the benefits of a stakeholder-oriented approach, which remains fundamental to encourage managers to adopt stakeholder theory practices in their behaviour.*

Originality of the study. *To the best of our knowledge, this study represents the first attempt to study the relationship between firm sustainability orientation and its alliance propensity.*

Keywords: *Sustainability orientation; Alliance Formation; Stakeholder Management*

♦ The authors equally contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript, and are listed in alphabetical order

• Post-doc researcher of Management - University of Milan - Italy
e-mail: stefano.romito@unimi.it

♠ Full Professor of Management - LUM University - Italy
e-mail: russo@lum.it

♠ Associate Professor of Management - University of Milan - Italy
e-mail: clodia.vurro@unimi.it

ISBN 97888943937-3-6
DOI 10.7433/SRECP.FP.2020.01

1. Introduction

While many firms rush to jump on the bandwagon of strategic alliances to leverage complementarities or defray costs, only few succeed to achieve expected outcomes. Limited attractiveness because of perceived exchange related risks (Hitt *et al.*, 2000; Russo *et al.*, 2019) and inadequate alliance management capabilities (Wang and Rajagopalan, 2015) are among the key reasons that derail firms from alliance formation. Indeed, research and practice have long investigated how the development of valuable resources (Lavie and Rosenkopf, 2006), the availability of information on prospective partners (Luo, 2007), and the active engagement in activities that stimulate partnering skills (Zollo *et al.*, 2002) can support firms in the decision to ally.

In the mainframe of what drives firm's attractiveness as an alliance partner, the role of sustainability orientation, defined as the overall proactive strategic stance of firms towards the integration of environmental and social concerns and practices into their strategic and operational activities (Roxas and Coetzer, 2012), has been mostly neglected. Previous research has largely documented that sustainability orientation is an important driver for the development of innovative capabilities that could easily attract a prospective partner (Carayannopoulos and Auster, 2010). Moreover, the long term attitude of sustainability oriented firms act as a signal that increase their perceived trustworthiness (Parmar *et al.*, 2010). Similarly, the increased availability of information, both directly disclosed and sourced from third parties, about sustainability oriented firms reduces opacity, which, in turn, mitigates the perceived risk of adverse selection (Cho *et al.*, 2013; Cui *et al.*, 2018). Finally, sustainability-oriented firms develop collaborative capabilities with stakeholders that predispose them to cope with situations of higher risk of moral hazard (Russo *et al.*, 2018). Taken together these arguments support the need for further research on the existence of a positive effect of firm sustainability orientation on alliance formation.

Heeding the call for a deeper understanding of what drives the choice of an alliance partner and building on recent advancements on the relevance and role of sustainability orientation (Cheng, 2020; Eccles *et al.*, 2014), we aim at advancing this stream of research by submitting that sustainability-oriented firms are also different in terms of attractiveness as an alliance partner and ability to form and mange strategic alliances, resulting in a greater propensity to ally. We test our hypotheses using a comprehensive panel dataset of 10.509 unique firm-year observations drawn from US-listed firms over the period from 2003 to 2017. We find support for the notion that sustainability orientation significantly increases the propensity of a firm to form strategic alliances. Moreover, we find evidence that the positive effect of a firm sustainability orientation on its alliance propensity is stronger only for those firms that show characteristics that are commonly associated to a lower attractiveness (i.e., when the financial market does not acknowledge a high potential for value creation and when the risk related to adverse selection is higher because of increased opacity).

The reminder of the paper is structured as it follows. First, earlier research focused on the reasons that derail firms from forming alliances and on the different factors that can support firms in overcoming obstacles is recapitulated. Second, the theoretical framework and hypotheses are developed. These sections are followed by the empirical analysis. Finally, the findings and contributions are discussed, as well as the limitations of the paper.

2. Literature review and hypotheses

Firms participate in strategic alliances for various reasons (Gulati and Singh, 1998). They might engage in collaborative relationships for developing knowledge, experimenting with assets on an arm's length basis, preserving limited resources and gaining access to markets (Dacin *et al.*, 2007; Hitt *et al.*, 2000). Despite motivations, firms are heterogeneous in their propensity to form alliances. In an attempt to explain such variety, theory has converged on two firm-specific perspectives.

The first perspective is related to the observation that some firms might be less attractive than others as an alliance partner. For instance, resource-based view (RBV) scholars focus on the role of the resources a firm owns as a predictor of its alliance propensity (Mowery *et al.*, 1998). Accordingly, alliances are considered as means to get access to valuable resources which will generate a competitive advantage (Hitt *et al.*, 2000). Thus, a firm that does not possess resources that can be leveraged to develop managerial skills and capabilities, generate new knowledge or build valuable relationships that might facilitate counterpart's access to a new markets (Russo and Vurro, 2010), will be considered less attractive as an alliance partner. Other scholars point to the risks associated to the alliance as a deterrent for its formation. In particular, strategic alliances are considered as risky means of corporate development because of exchange related hazards, which are connected to the asymmetry of information in assessing ex-ante firm's resources and capabilities, and the risk of moral hazard, which is connected to the cost (or the impossibility) of monitoring a firm's contribution to the alliance (Gulati and Higgins, 2003). Previous work has emphasized that, *ceteris paribus*, limited or incomplete information when assessing the value of inter-firm collaborations reduce firm's likelihood to attract potential partners for an alliance (Hoenig and Henkel, 2015). Similarly, it has been found that the lack of trust in the counterpart increases the cost associated with the monitoring of opportunistic behaviors of the parties involved in the alliance (Das and Teng, 1998), reducing firm attractiveness.

The second perspective is related to the observation that some firms might be less able than others in forming and managing alliances. In particular, extant research points to the lack of alliance capability as a key factor that negatively affect a firm's propensity to ally (Wang and Rajagopalan, 2015). In fact, limited abilities to search, negotiate, manage, and terminate an alliance (Kale and Singh, 2007) are associated to a lower propensity of participating into an alliance. For instance, it has been observed that firms not endowed with this capability prefer alternative growth strategies, such as acquisitions or internal development (Villalonga and McGahan, 2005).

Several studies have investigated which factors could mitigate these negative effects. Some scholars have focused on the strategic decisions or on the investments that increase the resource endowment of a firm, which, in turn, might positively affect firm attractiveness as an alliance partner. For instance, it has been found that superior technological knowledge makes a firm more attractive as potential alliance partner, compared to firms with inferior technological knowledge (Ahuja, 2000). Similarly, having resources that might enable partner's understanding of non-market environments or provide access to decision and opinion makers increases a firm attractiveness (Lin and Darnall, 2015). Other scholars focus on the aspects that might mitigate the relational risk. For instance, it has been found that the existence of specific inter-organizational ties, such as those with highly reputed business partners or suppliers increase the perceived trust in the firm (Luo, 2007). Similarly, firm's status (Stuart, 2000), market identity (Russo *et al.*, 2019), reputation (Stern *et al.*, 2014), and investment to reduce its environmental impact (Norheim-Hansen, 2015) are considered as trust-enhancing mechanisms in the context of alliance formation.

By adopting a capability lens, research has also analyzed what contributes to the emergence of alliance-related skills (Wang and Rajagopalan, 2015). While a firm's previous experience in collaborating via alliances has been identified as one of the most important antecedents of the emergence of this capability, scholars have recently examined the role played by the dedicated alliance function (Russo and Vurro, 2019). This function is an organizational unit that contributes to the codification of the knowledge relative to the alliances and manages the activities that have to be performed (Kale and Singh, 2007). Similarly, it has been observed the existence of a spillover effect on alliance capability from performing activities that show similar features to those of the alliance in terms of knowledge domains, managerial tasks or counterpart's characteristics (Zollo and Reuer, 2010).

2.1 Sustainability orientation and alliance propensity

Despite the vast amount of research aimed at identifying which factors may foster or impede a firm's participation in alliances, we argue that a key neglected element that can also influence a firm attractiveness as an alliance partner, as well its ability to form and manage alliances, is a firm orientation towards sustainability. This orientation is rooted in the development of sustainability strategies consisting of the planning and implementation of corporate activities in response to social and environmental responsibilities. Accordingly, sustainability orientation implies a stronger involvement of stakeholders in firm's decision making processes and a greater attitude toward long-term value creation (Eccles *et al.*, 2014). As a consequence, sustainability-oriented firms display a greater ability in understanding stakeholders needs and expectations (Freeman *et al.*, 2007), which in turn elicits the emergence of relations based on mutual trust (Bridoux and Stoelhorst, 2014) and an increased propensity in measuring and disclosing non-financial information (Cui *et al.*, 2018). Indeed, firms with strong sustainability orientation have been observed to behave differently from others, in terms of the governance structure they adopt to take into account environmental and social issues (Eccles *et al.*, 2014), especially in the context of corporate development activities such as acquisitions (Russo *et al.*, 2018), or innovation (Cheng, 2020).

We wish to advance this stream of research by submitting that sustainability-oriented firms are also different in terms of attractiveness as an alliance partner, thus resulting in a higher propensity to ally. In particular, four main arguments point to a positive effect of firm orientation toward sustainability on in propensity of forming alliances. The first argument pertains the type and value of the resources and capabilities owned by a sustainability-oriented firms. In fact, sustainability orientation has been indicated as an important driver for the development of innovative capabilities within the firm. On the one hand, by engaging in sustainability firms are more aware of a wider set of need of their stakeholders, including social and economic ones (Adams *et al.*, 2016). This results in an increased ability to interpret external stimuli and in the continuous search for solutions that will enable the firm to integrate stakeholders' needs in the development of product and services (Cheng, 2020). On the other hand, the long term attitude of sustainable firms elicits the creation of relationships based on principles of fairness and mutual trust, which, in turn promote the utilization and dissemination of knowledge within the stakeholder network (Jiang *et al.*, 2019). In particular, the characteristics of the relationships and the continuous interactions between the parties promote the development of a shared perspective and a shared vocabularies between them, which are necessary elements for the transmission of tacit knowledge (Jones *et al.*, 2018). Further, these resources and capabilities are difficult to be imitated by an outside actor because of the complexity and the causal ambiguity related to their formation. The intrinsic characteristics of these resources, such as the complexity in assessing them or the fragility associated to the fact that they have been generated and are embedded within the firm stakeholder network, might increase the likelihood that a potential counterpart will seek them through an alliance (Carayannopoulos and Auster, 2010).

The second argument is rooted in the observation that sustainability orientation might be perceived as a signal of trustworthiness by potential counterparts because of the long-term attitude and expected fairness which emerge from developing an attitude towards stakeholders (Eccles *et al.*, 2014; Zander and Zander, 2005). In this sense, an higher level of sustainability orientation could represent a signal of trustworthiness for the firm possessing it, increasing its attractiveness to external audiences (Parmar *et al.*, 2010). In addition, firm's sustainability orientation reflects its tendency to build and manage relationships according to the principles of fairness and reciprocal trust (Bridoux and Stoelhorst, 2014). This suggest that if a potential partner makes an "outside-in" analysis to assess the focal firm (i.e. interviewing suppliers, customers, former employees and other stakeholders to collect information) the stakeholders involved in this process will be more likely to provide it with positive feedbacks about the firm under assessment and about its management (Chen *et al.*, 2018). These positive feedbacks, in turn, might positively influence the counterpart's perception about the focal firm trustworthiness, smoothing the negotiation process and increasing the likelihood of alliance formation.

The third argument pertains to the effect of sustainability orientation on information asymmetry. Recent developments in CSR literature indicate that firms with higher levels of sustainability orientation display lower level of information asymmetry, because of the higher propensity to disclose information about internal processes and outcomes, not only economic but also social and environmental (Cui *et al.*, 2018). Furthermore, devoting attention toward sustainability has been associated to a better social evaluation (King, 2008), which can, in turn, influence a firm's external visibility (Pollock *et al.*, 2010) and the likelihood of it being covered by analysts (Bowers and Prato, 2018). Taken together, these studies indicate that firms with strong sustainability orientation would convey a larger amount of information to external audiences because of their tendency to be transparent and a higher likelihood to be coveraged by analysist and specialized press. Overall, the increased availability of information can reduce the efforts potential counterparts have identify and assess the quality of the firm (Ozmel *et al.*, 2013), increasing its attractiveness as an alliance partner.

The fourth argument relates to the observation that sustainability orientation might increase firm ability to form and manage alliances by contributing to the emergence of alliance capability. It has been argued, in fact, that capabilities the development of a sustainability oriented approach, influence corporate development activities (Russo *et al.*, 2018). In particular, it has been argued that the capabilities developed in assessing and managing social and environmental issue might be redeployed in the context of target selection or during the negotiation phase, supporting the focal firm in successfully managing these complex tasks. Similar considerations might apply in the case of alliances. Sustainability-oriented firms might have a higher propensity to form alliances as the capabilities they have developed in the interactions with stakeholders might facilitate the assessment of counterpart's resources. In addition, sustainability orientation might predispose these firms to cope with situations in which there are higher risk of moral hazard (Lorenzoni and Lipparini, 1999) as firms make extensive use of relational contracts to access internal and external resources (Gibbons and Henderson, 2012). These contracts are more generic and open-ended compared to formalized contracts, which implies a higher risk of moral hazard in the relationships of sustainability-oriented firms. This may be related to two aspects that influence firm's alliance propensity: first, it might indicate that sustainability-oriented firms are more prone to cope with situations surrounded by uncertainty and, second, it might signal that firms have developed a capability to manage cooperative relationships under uncertainty (Garcia-Castro and Aguilera, 2015).

Taken together, these arguments point to a higher attractiveness of high sustainability-oriented firms, which depends on the resources owned, the lower perceived exchange hazards such as moral hazard and adverse selection, and stronger relational capabilities. These considerations will result in a higher likelihood of observing alliances that involve sustainability-oriented firms. Thus, we hypothesize*:*

Hypothesis 1: The more sustainability-oriented a firm is, the greater its tendency to form strategic alliances.

2.2 Boundary conditions and alternative mechanisms

In our baseline prediction we postulated that the sustainability orientation of firms will be positively associated to the likelihood of being involved in alliances, because they are more attractive, they will be perceived at lower risk of adverse selection, they will be considered as more trustworthy, and they will be more comfortable in collaborating. This effect could be mitigated under certain conditions, which posit the need for contextualization. We propose three conditions that have the potential to offset the positive impact of sustainability orientation on alliance formation.

The first mitigating factor we consider is the firm potential for value creation, which represents the external assessment of the value of the resources owned by a firm. The second factor relates to

an important governance device external to the firm, i.e., the number of analysts covering a given company. The third, which is an important antecedent of the development of a firm ability to form and manage alliances, is the firm's level of diversification. In the next sections, we discuss how these mechanisms provide useful boundary conditions to our baseline hypothesis about sustainability orientation and its effect on propensity to ally.

2.2.1 Firm potential value creation

Tobins'Q is the measure of the market perception about a firm value creation. In particular, this measure represents the market assessment about the value of firm resources (Villalonga, 2004), such as its human capital (Vomberg *et al.*, 2015), its technological knowledge (Bracker and Ramaya, 2011), or its ability to gain consensus from the market and the communities in which it operates (Dorobantu *et al.*, 2017). This variable has often been considered as a proxy for firm value creation (see, for example, Garcia-Castro and Francoeur, 2016; Huselid *et al.*, 1997; Kim and Bettis, 2014). In this sense, the degree to which a firm has resources that contribute to value creation might increase is attractiveness as an alliance partner because partnering with that firm can provide higher pay-offs, being them in term of knowledge creation or in term of access to resources or to valuable partners (Dyer, 2000; Hitt *et al.*, 2004; Jap, 1999).

This argument suggests that the higher the market assessment of firm value the higher the value attributed to firm resources. Thus, we expect the value creation potential to mitigate the value creation effect of firm sustainability orientation on alliance formation.

Hypothesis 2: Firm value creation potential weakens the positive influence of sustainability orientation on alliance propensity

2.2.2 Financial analyst coverage

Financial analysts are key for the correct functioning of financial markets. Given their extensive training in finance and industry-specific knowledge, financial analysts provide valuable information in the form of earnings forecasts and recommendations which are useful to investors, and stakeholders more broadly, in order to assess the financial conditions and prospects of firms (Lang and Lundholm, 1996). Analyst coverage has been shown to alleviate informational frictions in financing policies, making firms better able to obtain external financing from equity markets (Chang *et al.*, 2006). In addition, previous work has documented a positive correlation between the number of analysts following a firm and the likelihood to voluntarily disclosure financial information (Hutton, 2005). As such, the analysts covering a firm act both as information intermediaries and as stimuli for firms' transparency to the external markets as well as to potential partners.

In this context, we can expect the informational advantage that is associated to firms characterized by a high sustainability orientation to be upper bounded as the benefit deriving from increased information availability decreases marginally when the amount information that are available to an external audience reaches a certain threshold level. For instance, Pollock and Rindova (2003) found that the level of media coverage affect investors' decisions at a diminishing rate because the information conveyed through, and thanks to, the relational bonds with stakeholders becomes increasingly redundant. Thus, we posit:

Hypothesis 3: Financial analysts' coverage weakens the positive influence of sustainability orientation on alliance propensity.

2.2.3 Firm Diversification

The first strand of theoretical consideration pertains the firm diversification as a resource enhancing mechanism, which, in turn, might influence a firm propensity of making alliances (Krammer, 2016). Firms that span several knowledge domains develop superior coordinating routines and combinative capabilities that enable them to harness divergent knowledge streams within their boundaries (Kogut and Zander, 1992). The ability to manage internal diversity also enables the firm to handle and derive advantage from external diversity, i.e. the ability to engage with different types of external actors. Additionally, due to their ability to manage external diversity by engaging with different kinds of alliance partners (representing a potentially wide array of technologies and knowledge streams), firms that span different knowledge domains will be able to better predict and identify combinatorial opportunities that are novel and path-breaking, thereby enhancing the potential benefits that they can realize from knowledge-based alliances (Rosenkopf and Almeida, 2003). In this sense, diversified firms might have a higher ability to form and manage alliances as compared to firms that operate in a single sector.

Thus, we expect the firm diversification to mitigate the positive effect of firm sustainability orientation on alliance formation and hypothesize:

Hypothesis 4: Firm diversification weakens the positive influence of sustainability orientation on alliance propensity

3. Methodology

3.1 Sample selection and estimation procedure

We tested our hypothesis over a sample of US firms in the period 2003-2017. To build the dataset we initially collected data from Thomson Reuters Asset4 database, one of the most comprehensive databases providing data on ESG (Environmental, Social and Governance) factors for over 7,000 public companies from 2002. Asset4 analysts collect data from several public sources such as annual reports, NGO websites, and stock exchange filings. The data collection process is designed to maximize data quality and comprises automated checks, independent audits, and managerial reviews (Eccles *et al.*, 2014). Asset4 was preferred to other databases used in papers on stakeholder orientation such as the Kinder, Lydenberg, Domini & Co. (KLD) due to the detail and accuracy of the data which is ensured by rigorous processes of quality check and auditing. This choice follows recent trends in studies on CSR and inter-organizational relationships (Ioannou *et al.*, 2016). The first step in the sampling process was identifying the 2,888 US firms whose ESG performance had been assessed by ASSET4. Second, the Thomson Reuters Securities Data Company (SDC) Platinum database was used to collect data on alliances realized by these companies in the period 1997-20017. This choice follows an established practice in the existing alliance literature (Lavie and Rosenkopf, 2006). Of the 2,888 ASSET4 US firms, 1,270 have realized at least one alliance in the period 2003-2017, with a total number of alliances of 6,516 alliances. This data was used to compute the number of alliances carried out by each firm in each year between 2003 and 2017 and to identify in which years of the analysis period each firm carried out new alliances (if any). The thirds step in the sampling process was collecting data about control variables for each firm. This was done by using the Thomson Reuters Datastream database. Collected data was then merged with the stakeholder orientation data from ASSET4 and variables related to alliance activity computed based on SDC data. The 6-digit version of the CUSIP identifier was used throughout the entire sampling process as the linking field to merge the three different datasets and identify each firm. The risk of possible discrepancies in CUSIPs was minimized by using databases that all belong to Thomson Reuters (ASSET4, SDC, and Datastream) and should report the same CUSIP for each firm. In addition, manual checks were also performed to ensure

accuracy Finally, we retrieved information about industry concentration from the Hoberg-Philips data library. The final sample was reduced to 10,509 observations due missing data in Datastream and in the Hoberg Philips datasets.

To estimate the effect of firm sustainability orientation on the alliance propensity we ran population-averaged regression models and used a generalized estimating equation (GEE) to control for firm heterogeneity. Given the nature of our dependent variable, we used a negative binomial model. In each model, the independent and control variables were lagged by 1 year. This approach follows an established practice in alliance literature to mitigate reverse causality concerns (Russo *et al.*, 2019).

3.2 Dependent Variable

The dependent variable is the *propensity* of a firm to form alliances, measured as the number of alliances formed by a firm in a given year (Rothaermel, 2001).

3.3 Explanatory Variables

Firm sustainability orientation. To operationalize firm sustainability orientation, we took the Environmental, Social and Governance (ESG) scores assigned by Asset4 to each firm included in the sample. These scores reflect firms' decisions and investments aimed at reaching certain outcomes in term of social impact, environmental footprint, transparency and inclusiveness. Following previous research (see, for example, Cheng *et al.*, 2014), we constructed the variable sustainability orientation as an equally weighted average of the environmental social and governance (ESG) scores for the focal firm for every year in our dataset.

The second explanatory variable is firm *value creation potential*. To operationalize it, we adopted firm Tobin's Q which is the ratio of firm market value divided by the book value of its assets. This variable captures a firm's market-based performance, as well as the growth opportunities a firm can access through an alliance or an acquisition of the firm (Deng *et al.*, 2013).

The third explanatory variable is coverage by financial analysts. At the firm level, we operationalized this variable as the *number of analysts* covering a firm in a given year. Since the I/B/E/S database reports quarterly data, we used the average of four quarters' figures to obtain a yearly score.

The fourth explanatory variable is firm diversification. To operationalize it, we counted the number of segments (SIC codes) in which the firm operates (Rothaermel, 2001).

3.4 Control Variables

Several firm-specific control variables were introduced in the analysis to mitigate concerns for potential heterogeneity at the firm level in the tendency to form alliances. We controlled for *firm size* as previous research has shown its influence on the propensity to form alliances (Beckman *et al.*, 2004). Following an established practice in the alliance literature, this was measured as the log of the number of the employees. We accounted for the effect of previous experiences with alliances using the number of alliances the firm conducted in the previous three years (*Alliance experience*) (Kale and Singh, 2007). We included *firm financial solvency* which indicates the financial resources available to support alliance activities, and can reveal organizational slack which in turn can influence its alliance propensity (Lavie and Rosenkopf, 2006; Vurro and Russo, 2009). We operationalized the variable as the debt-to-asset ratio, following previous papers on alliances.

We included the intangible asset ratio which might positively influence the attractiveness of a firm as a partner for alliances (Bizzi, 2017). We included a control for *firm financial performance* as they can also have an influence on alliance-related decisions, for instance by facilitating reinforcement of existing routines and discouraging alliance formation (Lavie and Rosenkopf, 2006). This was included as control through earnings per share (EPS). To account for potential

heterogeneity based on experience, we included *firm age* as a control for the analysis, measured as logarithm of the difference between the focal year and the year in which the firm has been founded. Seventh, we included the *intensity of competition* within focal firm industry to control for industry dynamics (Caves, 1998). In order to estimate the extent of competition faced by a given firm, we adopted the formulation of the Herfindahl-Hirschman concentration index (HHI) proposed by Hoberg and Phillips according to whom the strength of competition between a pair of firms can be inferred from the degree of similarity with which each describes its products in their annual statements (2010). More specifically, since US public firms are legally required to provide accurate and updated product description in their annual statements, the two scholars rely on a text-based analysis of such descriptions to compute a pairwise similarity matrix – i.e. a matrix of the pairwise similarity score for any two given firms in the sample. Based on the similarity scores, the two scholars construct a Text-Based Industry Classification (TNIC-3) with the same degree of coarseness[1] as the SIC-3 and calculate the HHI index accordingly. Lastly, we controlled for industry effect using two-digit US Standard Industrial Classification codes (industry dummy variables), for temporal effects (year dummy variables). Table 1 reports the summary statistics and the pairwise correlations.

Tab. 1: Summary statistics and pairwise correlations

	Mean	Std Dev												
Alliance propensity	0.376	1.295	1.000											
Alliance experience	0.218	1.805	0.642	1.000										
Intangible Asset Ratio	0.225	0.212	0.041	0.013	1.000									
Industry Competition	0.242	0.235	-0.006	-0.014	0.183	1.000								
Age	0.365	1.040	0.050	0.054	0.035	0.202	1.000							
Debt/Asset	0.266	0.212	-0.015	-0.021	0.149	0.003	0.010	1.000						
Size	0.265	1.581	0.148	0.139	0.023	0.032	0.128	0.016	1.000					
EPS	2.539	5.948	0.003	-0.002	0.006	-0.006	-0.002	0.003	0.004	1.000				
Sustainability Orientation	0.066	0.997	0.170	0.178	-0.011	0.114	0.309	-0.055	0.264	0.060	1.000			
Tobins	1.252	1.270	0.036	0.032	0.052	0.059	-0.072	-0.021	-0.015	-0.003	-0.037	1.000		
Analyst	0.572	1.152	0.240	0.216	0.105	-0.045	0.156	-0.051	0.236	-0.006	0.219	0.063	1.000	
Diversification	2.773	1.503	0.048	0.041	-0.053	0.066	0.253	-0.016	0.143	-0.003	0.206	-0.087	0.163	1.000

Source: Our elaboration

4. Results

Table 2 reports the regression models used to test our hypothesis. Model 1 is the baseline model, including only control variables. Coefficient estimates for the control variables confirm results shown in previous research: alliance experience (p=0.000), firm size (p=0.000), intangible asset ratio (p=0.000) are all positively correlated with the likelihood of entering into an alliance.

The coefficient estimate for the effect of firm sustainability orientation on the propensity to ally (Model 2) is positive and statistically significant, which provides support for *hypothesis 1*. In particular, an increase in firm's stakeholder orientation by one standard deviation is associated to a 1.7% increase in the alliance propensity (p=0.000). Our second hypothesis submitted that the firm potential for value creation mitigates the positive effect of stakeholder orientation on the intensity of

[1] Coarseness refers to the likelihood that, chosen two firms at random in the sample, those firm result related according to the proposed classification

alliance activity. In Model 3 we report the coefficient associated to the interaction term between stakeholder orientation and Tobins'Q which is negative and significant (p=0.000). This result supports *hypotheses 2*.

In the third hypothesis, we predicted that the number of financial analysts covering the firm might mitigate the positive effect of firm stakeholder orientation on alliance intensity. Results reported in Model 4 provide support for the hypothesis. In fact, the coefficient estimate for the interaction term is negative and significant (p=0.000).

Model 5 presents the results of the analyses aimed at testing hypothesis 5. The interaction between sustainability orientation and firm diversification is positive and not statistically significant (p=0.378), which does not provide support for the mitigating effect of diversification.

Tab. 2: Results of main analyses

	GEE Negative Binomial Estimation				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Alliance Experience	0.687***	0.663***	0.657***	0.659***	0.655***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Intangible asset ratio	0.711***	0.708***	0.735***	0.651***	0.711***
	(0.118)	(0.118)	(0.119)	(0.119)	(0.117)
HHI	-0.031	-0.033	-0.090	-0.047	-0.044
	(0.111)	(0.110)	(0.112)	(0.111)	(0.110)
Age	0.011	-0.039	-0.035	-0.040	-0.029
	(0.029)	(0.030)	(0.031)	(0.031)	(0.030)
Debt Asset	-0.057	-0.044	0.025	-0.028	-0.026
	(0.118)	(0.123)	(0.122)	(0.121)	(0.121)
Size	0.037***	0.018*	0.017	0.021*	0.014
	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)
EPS	-0.006	-0.012*	-0.010	-0.014*	-0.012*
	(0.005)	(0.007)	(0.007)	(0.008)	(0.007)
Sustainability Orientation		0.166***	0.274***	0.220***	0.012
		(0.026)	(0.033)	(0.027)	(0.051)
Tobins'Q			0.031*		
			(0.019)		
Sustainability Orientation*Tobins'Q			-0.069***		
			(0.017)		
Analyst				0.059**	
				(0.024)	
Sustainability Orientation*Analyst				-0.088***	
				(0.017)	
Diversification					-0.060
					(0.022)
Sustainability Orientation*Diversification					-0.107
					(0.22838)
Constant	-1.926***	-1.794***	-1.825***	-1.918***	-1.634***
	(0.125)	(0.122)	(0.124)	(0.147)	(0.134)
Year	YES	YES	YES	YES	YES
Observations	10,509	10,509	10,339	10,509	10,509
Number of firms	2,056	2,056	2,016	2,056	2,056
Chi-Squared	3,131.06	3,217.11	3,192.59	3,244.24	3,241.46
Prob > Chi Squared	0	0	0	0	0
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1					

Source: our elaboration

Table 3 presents a set of additional analysis aimed at ensuring the robustness of our main result. In Model 6 we replicated the analyses using a random effect Poisson estimation. In Model 7, we dichotomized the dependent variable and we estimated the effect of sustainability orientation on alliance likelihood using a random effect Logit estimation, including a control for the sector in

which the firm operates (first 2 digits of the firm's primary SIC codes). Results do not differ from those reported in Table 2, confirming our findings.

Tab. 3: Robustness tests

	Model 6 **Random effect** **Poisson**	**Model 7** **Random effect** **Logit**
Alliance Experience	0.100**	2.475***
	(0.051)	(0.120)
Intangible asset ratio	1.061***	0.258
	(0.174)	(0.170)
HHI	-0.060	-0.340**
	(0.169)	(0.149)
Age	-0.119***	0.058*
	(0.042)	(0.032)
Debt Asset	-0.086	0.027
	(0.149)	(0.156)
Size	0.230***	0.017
	(0.082)	(0.017)
EPS	-0.007	-0.005
	(0.011)	(0.009)
Sustainability Orientation	0.249***	0.073*
	(0.064)	(0.038)
Constant	-1.926***	-1.794***
	(0.125)	(0.122)
Year	YES	YES
Sector	NO	YES
Observations	10,509	10,509
Number of firms	2,056	2,056
Chi-Squared	3,131.06	3,217.11
Prob > Chi Squared	0	0

Source: our elaboration

5. Discussion and conclusion

In this paper, we analyzed the influence of sustainability orientation on firm alliance propensity. Our results show that firm sustainability orientation positively influences its propensity to ally. We theorized that this relationship is attributable to the fact that sustainability-oriented firms are perceived as more attractive as an alliance partner, because of the resources they own and the lower relational risk they convey. Moreover, we predicted that these firms display a higher ability to form and manage alliances, because of the development of relational capabilities.

We showed that sustainability orientation particularly matters for firms that present characteristics that are commonly associated to lower attractiveness as an alliance partner. In particular, when the financial market does not acknowledge to the focal firm a potential for future value creation, the relational resources the firm has developed by collaborating with its stakeholders in the mainframe of corporate sustainability, still represent a source of valuable knowledge for potential partners. Further, in case of limited external information to assess potential partners, the sustainability orientation is associated with a lower perceived risk of adverse selection.

By bridging literature on the drivers of partner selection in strategic alliances and sustainability orientation, this paper makes contributions to two distinct streams of research. First, we advance our understanding of the antecedents of alliance formation by introducing the role of sustainability orientation. We extend alliance research that has examined, through different theoretical lenses, the factors that affect firm attractiveness in the alliance context, by theorizing on how a firm sustainability orientation shapes firm propensity to ally. Our arguments and findings, therefore, emphasize the critical role played by the way in which the firm integrates sustainability into its strategic decision-making processes, in addition to the considerations about the role of

entrepreneurial or market orientation emphasized in previous research. Second, we contribute to the corporate sustainability literature. In particular we advance existing knowledge on the relationship between sustainability orientation and corporate development activities (Cheng, 2020; Russo *et al*., 2018). Obtaining a deeper understanding of the benefits of a sustainability-oriented approach, in fact, remains fundamental to encourage managers to increase the integration of sustainability in their decision making. In the alliance context, as discussed in this paper, managers have several incentives to adopt a sustainability-oriented approach, as this approach can provide them with capabilities, routines and social capital which facilitate alliance formation, knowledge exchange and alliance management. More efforts are needed in this research area, since resulting insights could equip managers with a more profound knowledge of the mechanisms underlying alliance formation, partner selection and alliance management, improving their alliance capabilities and incentivizing them to adopt sustainability-oriented behavior.

Our work represents an initial attempt to investigate the role of firm sustainability orientation in explaining alliance propensity. In so doing, we adopted a firm level perspective assuming that the counterparts are homogeneous. Relaxing this assumption and analyzing the effect similarity\dissimilarity in partners sustainability orientation on alliance formation might contribute significantly to advance our understanding of the relation between stakeholder orientation and alliance behavior.

Additionally, future research should examine the potential effects of sustainability orientation on alliance performance, which have only been supposed. In fact, sustainability orientation is likely to have a relevant influence also on the management of alliances and, in turn, on their performance, as hypothesized in the previous section. This can happen, for instance, by influencing the development of firm capabilities and social capital, which can have an important impact on alliance management. Third, studies about the relationship between sustainability orientation and types of alliances might be integrated more deeply with concepts and theories from the exploration-exploitation alliance literature, like the balancing of exploration and exploitation across dimensions, time and organizational modes.

References

ADAMS R., JEANRENAUD S., BESSANT J., DENYER D., OVERY P. (2016), "Sustainability-Oriented Innovation: A Systematic Review", *International Journal of Management Reviews*, vol. 18, n. 2, pp. 180-205.

AHUJA G. (2000), "Collaboration Networks, Structural Holes and Innovation: A Longitudinal Study", *Administrative Science Quarterly*, vol. 45, n. 3, pp. 425-455.

BECKMAN C.M., HAUNSCHILD P.R., PHILLIPS D.J. (2004), "Friends or Strangers? Firm-Specific Uncertainty, Market Uncertainty, and Network Partner Selection", *Organization science*, vol. 15, n. 3, pp. 259-275.

BIZZI L. (2017), "The Strategic Role of Financial Slack on Alliance Formation", *Management Decision*, vol., n., pp.

BOWERS A., PRATO M. (2018), "The Structural Origins of Unearned Status: How Arbitrary Changes in Categories Affect Status Position and Market Impact", *Administrative Science Quarterly*, vol. 63, n. 3, pp. 668-699.

BRACKER K., RAMAYA K. (2011), "Examining the Impact of Research and Development Expenditures on Tobin's Q", *Academy of Strategic Management Journal*, vol. 10, n., pp. 63.

BRIDOUX F., STOELHORST J.W. (2014), "Microfoundations for Stakeholder Theory: Managing Stakeholders with Heterogeneous Motives", *Strategic management journal*, vol. 35, n. 1, pp. 107-125.

CARAYANNOPOULOS S., AUSTER E.R. (2010), "External Knowledge Sourcing in Biotechnology through Acquisition Versus Alliance: A Kbv Approach", *Research Policy*, vol. 39, n. 2, pp. 254-267.

CAVES R.E. (1998), "Industrial Organization and New Findings on the Turnover and Mobility of Firms", *Journal of economic literature*, vol. 36, n. 4, pp. 1947-1982.

CHANG X., DASGUPTA S., HILARY G. (2006), "Analyst Coverage and Financing Decisions", *The Journal of Finance*, vol. 61, n. 6, pp. 3009-3048.

CHEN Z., KALE P., HOSKISSON R.E. (2018), "Geographic Overlap and Acquisition Pairing", *Strategic Management Journal*, vol. 39, n. 2, pp. 329-355.

CHENG B., IOANNOU I., SERAFEIM G. (2014), "Corporate Social Responsibility and Access to Finance", *Strategic management journal*, vol. 35, n. 1, pp. 1-23.

CHENG C.C. (2020), "Sustainability Orientation, Green Supplier Involvement, and Green Innovation Performance: Evidence from Diversifying Green Entrants", *Journal of Business Ethics*, vol. 161, n. 2, pp. 393-414.

CHO S.Y., LEE C., PFEIFFER JR R.J. (2013), "Corporate Social Responsibility Performance and Information Asymmetry", *Journal of Accounting and Public Policy*, vol. 32, n. 1, pp. 71-83.

CUI J., JO H., NA H. (2018), "Does Corporate Social Responsibility Affect Information Asymmetry?", *Journal of Business Ethics*, vol. 148, n. 3, pp. 549-572.

DACIN M.T., OLIVER C., ROY J.P. (2007), "The Legitimacy of Strategic Alliances: An Institutional Perspective", *Strategic Management Journal*, vol. 28, n. 2, pp. 169-187.

DAS T.K., TENG B.-S. (1998), "Between Trust and Control: Developing Confidence in Partner Cooperation in Alliances", *Academy of management review*, vol. 23, n. 3, pp. 491-512.

DENG X., KANG J.-K., LOW B.S. (2013), "Corporate Social Responsibility and Stakeholder Value Maximization: Evidence from Mergers", *Journal of financial Economics*, vol. 110, n. 1, pp. 87-109.

DOROBANTU S., HENISZ W.J., NARTEY L. (2017), "Not All Sparks Light a Fire: Stakeholder and Shareholder Reactions to Critical Events in Contested Markets", *Administrative Science Quarterly*, vol. 62, n. 3, pp. 561-597.

DYER J.H. (2000), "Collaborative Advantage: Winning through Extended Enterprise Supplier Networks", Oxford University Press.

ECCLES R.G., IOANNOU I., SERAFEIM G. (2014), "The Impact of Corporate Sustainability on Organizational Processes and Performance", *Management Science*, vol. 60, n. 11, pp. 2835-2857.

FREEMAN E.R., MARTIN K., PARMAR B. (2007), "Stakeholder Capitalism", *Journal of Business Ethics*, vol. 74, n. 4, pp. 303-314.

GARCIA-CASTRO R., AGUILERA R.V. (2015), "Incremental Value Creation and Appropriation in a World with Multiple Stakeholders", *Strategic Management Journal*, vol. 36, n. 1, pp. 137-147.

GARCIA-CASTRO R., FRANCOEUR C. (2016), "When More Is Not Better: Complementarities, Costs and Contingencies in Stakeholder Management", *Strategic Management Journal*, vol. 37, n. 2, pp. 406-424.

GIBBONS R., HENDERSON R. (2012), "Relational Contracts and Organizational Capabilities", *Organization science*, vol. 23, n. 5, pp. 1350-1364.

GULATI R., HIGGINS M.C. (2003), "Which Ties Matter When? The Contingent Effects of Interorganizational Partnerships on Ipo Success", *Strategic Management Journal*, vol. 24, n. 2, pp. 127-144.

GULATI R., SINGH H. (1998), "The Architecture of Cooperation: Managing Coordination Costs and Appropriation Concerns in Strategic Alliances", *Administrative science quarterly*, vol., n., pp. 781-814.

HITT M.A., AHLSTROM D., DACIN M.T., LEVITAS E., SVOBODINA L. (2004), "The Institutional Effects on Strategic Alliance Partner Selection in Transition Economies: China Vs. Russia", *Organization science*, vol. 15, n. 2, pp. 173-185.

HITT M.A., DACIN M.T., LEVITAS E., ARREGLE J.L., BORZA A. (2000), "Partner Selection in Emerging and Developed Market Contexts: Resource-Based and Organizational Learning Perspectives", *Academy of Management journal*, vol. 43, n. 3, pp. 449-467.

HOBERG G., PHILLIPS G. (2010), "Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis", *The Review of Financial Studies*, vol. 23, n. 10, pp. 3773-3811.

HOENIG D., HENKEL J. (2015), "Quality Signals? The Role of Patents, Alliances, and Team Experience in Venture Capital Financing", *Research Policy*, vol. 44, n. 5, pp. 1049-1064.

HUSELID M.A., JACKSON S.E., SCHULER R.S. (1997), "Technical and Strategic Human Resources Management Effectiveness as Determinants of Firm Performance", *Academy of Management journal*, vol. 40, n. 1, pp. 171-188.

HUTTON A.P. (2005), "Determinants of Managerial Earnings Guidance Prior to Regulation Fair Disclosure and Bias in Analysts' Earnings Forecasts", *Contemporary Accounting Research*, vol. 22, n. 4, pp. 867-914.

IOANNOU I., LI S.X., SERAFEIM G. (2016), "The Effect of Target Difficulty on Target Completion: The Case of Reducing Carbon Emissions", *The Accounting Review*, vol. 91, n. 5, pp. 1467-1492.

JAP S.D. (1999), "Pie-Expansion Efforts: Collaboration Processes in Buyer–Supplier Relationships", *Journal of marketing Research*, vol. 36, n. 4, pp. 461-475.

JIANG W., WANG A.X., ZHOU K.Z., ZHANG C. (2019), "Stakeholder Relationship Capability and Firm Innovation: A Contingent Analysis", *Journal of Business Ethics*, vol., n., pp. 1-15.

JONES T.M., HARRISON J.S., FELPS W. (2018), "How Applying Instrumental Stakeholder Theory Can Provide Sustainable Competitive Advantage", *Academy of Management Review*, vol. 43, n. 3, pp. 371-391.

KALE P., SINGH H. (2007), "Building Firm Capabilities through Learning: The Role of the Alliance Learning Process in Alliance Capability and Firm-Level Success", *Strategic Management Journal*, vol. 28, n. 1, pp. 981-1000.

KIM C., BETTIS R.A. (2014), "Cash Is Surprisingly Valuable as a Strategic Asset", *Strategic Management Journal*, vol. 35, n. 13, pp. 2053-2063.

KING B.G. (2008), "A Political Mediation Model of Corporate Response to Social Movement Activism", *Administrative Science Quarterly*, vol. 53, n. 3, pp. 395-421.

KOGUT B., ZANDER U. (1992), "Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology", *Organization Science*, vol. 3, n. 3, pp. 383-397.

KRAMMER S.M. (2016), "The Role of Diversification Profiles and Dyadic Characteristics in the Formation of Technological Alliances: Differences between Exploitation and Exploration in a Low-Tech Industry", *Research Policy*, vol. 45, n. 2, pp. 517-532.

LANG M.H., LUNDHOLM R.J. (1996), "Corporate Disclosure Policy and Analyst Behavior", *Accounting review*, vol., n., pp. 467-492.

LAVIE D., ROSENKOPF L. (2006), "Balancing Exploration and Exploitation in Alliance Formation", *Academy of Management Journal*, vol. 49, n. 4, pp. 797-818.

LIN H., DARNALL N. (2015), "Strategic Alliance Formation and Structural Configuration", *Journal of Business Ethics*, vol. 127, n. 3, pp. 549-564.

LORENZONI G., LIPPARINI A. (1999), "The Leveraging of Interfirm Relationships as a Distinctive Organizational Capability: A Longitudinal Study", *Strategic Management Journal*, vol. 20, n. 4, pp. 317-338.

LUO Y. (2007), "The Independent and Interactive Roles of Procedural, Distributive, and Interactional Justice in Strategic Alliances", *Academy of Management journal*, vol. 50, n. 3, pp. 644-664.

MOWERY D.C., OXLEY J.E., SILVERMAN B.S. (1998), "Technological Overlap and Interfirm Cooperation: Implications for the Resource-Based View of the Firm", *Research policy*, vol. 27, n. 5, pp. 507-523.

NORHEIM-HANSEN A. (2015), "Are 'Green Brides' More Attractive? An Empirical Examination of How Prospective Partners' Environmental Reputation Affects the Trust-Based Mechanism in Alliance Formation", *Journal of Business Ethics*, vol. 132, n. 4, pp. 813-830.

OZMEL U., REUER J.J., GULATI R. (2013), "Signals across Multiple Networks: How Venture Capital and Alliance Networks Affect Interorganizational Collaboration", *Academy of Management Journal*, vol. 56, n. 3, pp. 852-866.

PARMAR B.L., FREEMAN R.E., HARRISON J.S., WICKS A.C., PURNELL L., DE COLLE S. (2010), "Stakeholder Theory: The State of the Art", *The academy of management annals*, vol. 4, n. 1, pp. 403-445.

POLLOCK T.G., CHEN G., JACKSON E.M., HAMBRICK D.C. (2010), "How Much Prestige Is Enough? Assessing the Value of Multiple Types of High-Status Affiliates for Young Firms", *Journal of Business Venturing*, vol. 25, n. 1, pp. 6-23.

POLLOCK T.G., RINDOVA V.P. (2003), "Media Legitimation Effects in the Market for Initial Public Offerings", *Academy of Management journal*, vol. 46, n. 5, pp. 631-642.

ROSENKOPF L., ALMEIDA P. (2003), "Overcoming Local Search through Alliances and Mobility", *Management Science*, vol. 49, n. 6, pp. 751-766.

ROTHAERMEL F.T. (2001), "Incumbent's Advantage through Exploiting Complementary Assets Via Interfirm Cooperation", *Strategic Management Journal*, vol. 22, n. 6-7, pp. 687-699.

ROXAS B., COETZER A. (2012), "Institutional Environment, Managerial Attitudes and Environmental Sustainability Orientation of Small Firms", *Journal of Business Ethics*, vol. 111, n. 4, pp. 461-476.

RUSSO A., VASTOLA V., VURRO C. (2018), "To Be or Not to Be Sustainable? Solving the Dilemma During the Acquisition Process", *Sinergie Italian Journal of Management*, vol. 36, n. 106, pp.127-140.

RUSSO A., VURRO C. (2010), "Cross-Boundary Ambidexterity: Balancing Exploration and Exploitation in the Fuel Cell Industry", *European Management Review*, vol. 7, n. 1, pp. 30-45.

RUSSO A., VURRO C. (2019), "Alliance Management Knowledge and Alliance Performance: Unveiling the Moderating Role of the Dedicated Alliance Function", *Industrial and Corporate Change*, vol. 28, n. 4, pp. 725-752.

RUSSO A., VURRO C., NAG R. (2019), "To Have or to Be? The Interplay between Knowledge Structure and Market Identity in Knowledge-Based Alliance Formation", *Research Policy*, vol. 48, n. 3, pp. 571-583.

STERN I., DUKERICH J.M., ZAJAC E. (2014), "Unmixed Signals: How Reputation and Status Affect Alliance Formation", *Strategic Management Journal*, vol. 35, n. 4, pp. 512-531.

STUART T.E. (2000), "Interorganizational Alliances and the Performance of Firms: A Study of Growth and Innovation Rates in a High-Technology Industry", *Strategic Management Journal*, vol. 21, n. 8, pp. 791-811.

VILLALONGA B. (2004), "Intangible Resources, Tobin'sq, and Sustainability of Performance Differences", *Journal of Economic Behavior & Organization*, vol. 54, n. 2, pp. 205-230.

VILLALONGA B., MCGAHAN A.M. (2005), "The Choice among Acquisitions, Alliances, and Divestitures", *Strategic management journal*, vol. 26, n. 13, pp. 1183-1208.

VOMBERG A., HOMBURG C., BORNEMANN T. (2015), "Talented People and Strong Brands: The Contribution of Human Capital and Brand Equity to Firm Value", *Strategic Management Journal*, vol. 36, n. 13, pp. 2122-2131.

VURRO C., RUSSO A. (2009), "Balancing Exploration and Exploitation across Firm Boundaries: Intra- and Interorganizational Learning in the Fuel Cell Industry", In POGUTZ S., RUSSO A., MIGLIAVACCA P.O., *Innovation, Markets and Sustainable Energy: The Challenge of Hydrogen and Fuel Cells*, Edward Elgar Publishing, Cheltenham, UK.

WANG Y., RAJAGOPALAN N. (2015), "Alliance Capabilities: Review and Research Agenda", *Journal of Management*, vol. 41, n. 1, pp. 236-260.

ZANDER I., ZANDER U. (2005), "The inside Track: On the Important (but Neglected) Role of Customers in the Resource-Based View of Strategy and Firm Growth", *Journal of Management Studies*, vol. 42, n. 8, pp. 1519-1548.

ZOLLO M., REUER J.J. (2010), "Experience Spillovers across Corporate Development Activities", *Organization Science*, vol. 21, n. 6, pp. 1195-1212.

ZOLLO M., REUER J.J., SINGH H. (2002), "Interorganizational Routines and Performance in Strategic Alliances", *Organization Science*, vol. 13, n. 6, pp. 701-713.

Orienting east Naples' new special economic zone (SEZ) towards circular economy (CE) and creative industry (CI) for sustainable economic development

RAYMOND SANER[*] LICHIA YIU[•] PIERO ACCARDO[♠]

Abstract

Objectives. *This paper proposes a post-covid-19 reconstruction strategy in the designated Special Economic Zone (SEZ) of East Naples by proposing a local economy oriented towards circular economy in combination with socio-economic activities that are part of the creative industry. The objective of this exploratory research is to provide alternative redevelopment strategies going beyond "business as usual" but are more aligned with sustainable development of tomorrow.*

Methodology. *Applying a policy analysis approach, the authors map and analyze the emerging SEZ policies of Naples and provide a review of concepts through a series of targeted literature reviews on circular economy and creative industry that are considered to have direct bearing on the objective of the paper as stated above.*

Findings. *The implementation of such an integrated three-prone development strategy and its potential contribution to sustainable development has not been undertaken so far. Therefore, the authors' elaborations remain at this stage theoretical. In view of the wealth destruction and downward economic pressure, innovative strategies, such as the one proposed, are bound to become part of the post-covid-19 reconstruction discourse and experimentation.*

Research limits. *The plan of setting up a SEZ in East Naples was only decided in late 2017 and no direct implementation of Circular Economy and Creative Industry policies in SEZs have been attempted so far in East Naples nor elsewhere in Italy. Therefore the policy proposal contained in this paper cannot be backed up with field evidence.*

Practical implications. *The authors' novel contribution to regional development scenarios can serve as information source and inspiration for implementation of development projects following similar inclusive, sustainable and participatory forms of regional development.*

Originality of the study. *Exploring the synergistic potential of simultaneously applying a three-prone urban development strategy that aligns SEZ policies with a creative industry and circular economy nexus has not been done so far.*

Key words: *Creative Industry, Circular Economy, Special Economic Zones, Naples SEZs, Sustainable Socio-Economic Policies, Creating Shared Value*

[*] Titular Professor in Economics Department - Basle University - Switzerland
e-mail: saner@csend.org

[•] President - Centre for Socio-Eco-Nomic Development (CSEND) - Geneva
e-mail: yiu@csend.org

[♠] Master's degree - Ca' Foscari University of Venice - Italy
e-mail: accardo@csend.org

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6

DOI 10.7433/SRECP.FP.2020.01

1. Introduction

Globally there have been 5.934.936 confirmed Covid-19 cases and 367.166 deaths as reported by the WHO dashboard on May the 31st 2020, including 232.664 cases and 33.340 deaths in Italy.[1] This pandemic has resulted in unprecedented loss of lives and related human suffering and is causing enormous disruption and slow-down of the economy in all countries, not only those societies directly impacted due to large number of infected residents.

More than 2.2 billion of workers live in countries where workplaces have been closed. According to ILO estimates, 436 million enterprises (including 389 million independent workers) are in high-risk sectors (manufacturing, food and lodging services, real estate, wholesale and retail trade). ILO estimates a total loss of 305 million jobs worldwide and most will not be recovered post COVID-19.

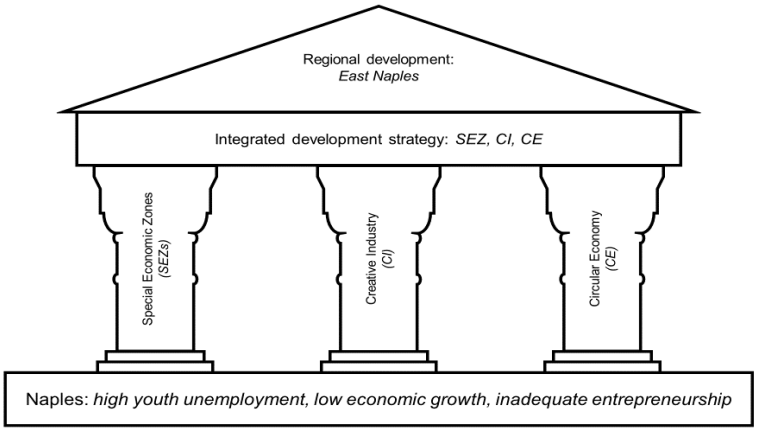
This situation clearly depicts the worst crisis, on a humanitarian, social and economic level since World War II. The key question now is, once the health emergency ends, do we want to return to the world before COVID-19? What future do we want? Things are not going to be the same anyhow; it will be up to us to find answers that will guide us to a world that offers all women and men, for many generations to come, a better future[2].

A number of economic actors call for a return to pre-covid-19 conditions but "business as usual" is considered by many others as unrealistic, not achievable, nor desirable. Instead, new forms of economic activities will be required offering basic services in a different way, recovering and creating decent employment through diverse and complementary organizational models of production.

A transformative vision following the Agenda 2030 appears more called for with a sustained reconstruction strategy requiring the adoption of a new paradigm of sustainable production and consumption as indicated by SDG 12 of the 2030 Agenda[3]. This paradigm must value issues such as the circular economy, social innovation, short circuits and food security (UNCTAD, 2013), innovative financial mechanisms (ILO, 2019) such as local currencies and the care for common goods. Public policies that aim to create and strengthen sustainable ecosystems are needed for the realization of such a transformative agenda.[4]

What follows are deliberations of key features of a regional (re-)development strategy composed of a Special Economic Zone (SEZs), Circular Economy (CE) and Creative Industries (CI). The three policy choices will be examined to show how the three policies are relevant and complementary to create a sustainable development in East Naples (see Figure 1).

Fig. 1: three-prong development strategy for East Naples



1 See WHO Dashboard available at https://covid19.who.int/, last accessed on May the 31st 2020
2 See http://unsse.org, last accessed on May 2020
3 See https://sustainabledevelopment.un.org/sdg12, last accessed on June the 1st 2020
4 See footnote 2

Circular economy requires imagining a design process that sustainably affects the product, services, production process and ultimately business models of a business ecosystem. Imbuing creativity in a local space could attract creative talents and enrich the locality with greater creative capital (creative class as described by Florida, 2002). Creative place making via clustering of features of creative industry is thus a new form of urban regeneration and constitute the third pillar in this strategic mapping of economic revival options after COVID-19.

In this context, East Naples was selected to test this three prone regional development strategy. The choice of focusing on the SEZ of East Naples was due to the following reasons. The first relates to the fact that government SEZ regulation gives priority to new forms of organizing productive interactions by creating circular relationships of economic actors thereby creating a circular economy. Secondly, data on the SEZ of East Naples were available and the SEZ administration were more easily accessible for follow-on inquiry. Thirdly, the territory of the East Naples SEZ which is characterized by abundant empty buildings due to de-industrialization makes it easier to imagine out of box thinking, such as applications of CE and CI concepts.

2. East Naples: overview

To help the less developed regions of Italy, the Italian government started to establish Special Economic Zones (SEZs) through the so-called "Decree for the South" (Decree n. 91 June the 20th 2017) converted into law in August 2017. According to EU Regulation No. 1315/2013 of the European Parliament and of the Council on December the 11th 2013 on Union Guidelines for the Development of the Trans-European Transport network and repealing No. 661/2010/EU, the only locations eligible for SEZ programmes are those nearby, or strongly connected to, port areas.

Campania was the first Italian Region to complete the procedure for the establishment of a SEZ in May 2018. It consists of four provinces (Avellino, Benevento, Caserta, Salerno) and one Metropolitan City (Naples) that is also the capital of Campania. Overall, 29 SEZs have been established within the region, and East Naples is one of them.

East Naples consists the neighborhoods of Barra and San Giovanni a Teduccio, accounting for an overall population of around 110.000 inhabitants. It has been set up as an Enterprise Zone (EZ)[5] with the precise aim to reinvigorate its depleted industrial and socio-economic fabric. Typically, the EZ is focused on increasing the productivity of the poorest zones/territories, through the start-up of new enterprises and the relocation or expansion of already operating firms within the country by offering favorable business conditions. Thus, the final scope is encouraging companies to employ more of both labor and capital in the zone, with the aim to eradicate high-rate unemployment or to bridge the developmental gap between rural and urban areas (Leslie E. Papke, 1993).

East Naples holds a strategic location advantage since it is relatively close to the historical city centre of Napoli (9,3 km), a seaport (8 km), an airport (6,7 km), a train station "Napoli Centrale" (6,3 km), and a modern business centre, "Centro Direzionale di Napoli" (CDN)[6] (5,7 km).

This district is characterized by large availability of unused spaces, particularly suitable for renewal or repurpose programmes. For example, in 2016, in the former industrial area of Cirio, the Federico II University Technology Campus had been inaugurated. This campus contributed significantly in kicking off the East Naples' urban rejuvenation, luring investments of renowned IT companies such as Apple, Cisco and Telecom Italia (TIM) to the adjacent areas in East Naples. Already before its official inauguration, the area witnessed a significant boom of collateral activities like bars, B&Bs, cafeterias, photocopy shops, markets. Thus, East Naples embodies a clear example

[5] Enterprise zones (EZs) aim to revitalize underdeveloped urban or rural areas through the provision of tax incentives and financial grants. These zones are primarily used in developed countries (United States, France and the United Kingdom) although even some developing countries are to adopt similar mechanisms (South Africa).

[6] CDN is a set of those modern skyscrapers, built in Poggioreale district, designed by the Japanese architect Kenzō Tange. The whole area has become an attractive nucleus towards companies that can effectively interface with each other in a single structure.

of how reuse programmes can contribute positively to the relaunching of an economy of a whole area, attracting investment for innovation and technology as well as stimulating a wide range of commercial activities.

Moreover, this area also sustains a strong cultural heritage. A good example could be *"La Festa Dei Gigli"* of Barra that, each year (in the last weekend of September), thousands of people gather from nearby districts. This festivity was inspired by the original Nola's, one that has been included (since December 2013) in the Oral and Intangible Heritage of UNESCO. "La Festa Dei Gigli" of Barra is slightly different from Nola. Deriving its origin from the Cibele and Attis' myth, it consists of a folkloristic parade of 25-meters-tall wooden structures adorned with colorful garments. Eventually, the event brings to end with the symbolic election of the best-dressed up "Giglio". Overall, this festival shows how its territory has much more to offer apart from its manufacturing vocation.

3. East Naples' new SEZ: actors, policies and objectives

SEZs are created for *zone users*. Investors are the direct beneficiaries of regulatory regimes instituted in these zones. Everything within SEZs is built to attract investments. Since the SEZ programme's objective is economic development, investors and entrepreneurs, together with their resources (capital and knowledge), fulfil a pivotal role.

A multitude of actors (public and private) are involved in the institutional set-up of SEZs. In the East Naples' case, the actors involved are:

- The national *government* is the lead-actor. It sets-up the economic development goals, pointing at the industrial policies that must be followed and implemented through the establishment of SEZs. To ensure reaching its targets, central government coordinates SEZ policies in compliance with its international obligations and allocating necessary resources. As already seen, East Naples SEZ has been created through the "Decree for the South". The government is also responsible for the overall administration of the SEZ regime, but it is not the only institutional stakeholder involved since regional and local governments may also play essential roles. The latter often have a better knowledge of local conditions, for example concerning the infrastructure, availability of land and utilities, and the specific geographical, or local investment needs. (UNCTAD, 2019)
- Cabina di regia per la strategia regionale, Comitato di indirizzo, Agenzia per la coesione territoriale, and Sportello unico regionale per le attività produttive (SURAP), embody the *local authorities.* They uphold the national government directives in the SEZ development programme. These authorities are physically present within the SEZs, through branches, representatives and specialized agencies. They are in charge of: 1) the strategic and operational planning; 2) proposing SEZ policy adjustments; 3) cooperating with local administrations, utility companies, tax officials and other entities to guarantee the correct functioning of SEZs. In particular, SURAP plays a critical role since it represents the local helpdesk that provides precious information to people interested in running new activities in SEZs. SURAP was established by regional law n. 11 dated October the 14th 2015 for the following purposes: 1) provide local administration with helpful hints to steer them to be more adaptive to investor's needs; 2) pursue the development of a more favorable enabling conditions for the establishment and development of businesses and business networks; 3) guarantee the right of companies to operate in a simplified regulatory framework, to ensure maximum transparency of the procedures, as well as to reduce bureaucratic times and eliminate any non-essential requirements; 4) encourage the attraction of investments on the regional territory; 5) provide information on settlement opportunities and promote the regional production system and business activity.
- East Naples municipalities and "Aree di Sviluppo Industriale" (ASIs) hold the leading *zone developers'* function. The latter are public benefit entities, established to promote new

industrial initiatives in a designed provincial district. Municipalities and ASIs are responsible for the arrangement and provision of infrastructure essential for the success of SEZs. In general, zone developers can be both public and private entities. They are responsible for the construction of infrastructures, utilities and facilities useful to connect zones users to the national fabric. Technical capacities and expertise of the private sector become critical, especially to bridge over the lack of public resources.

- Invitalia, *national agency for the attraction of investments and business development*, actively participates in attracting FDI into the SEZs. Invitalia is owned by the Ministry of the Economy. The latter named Invitalia as being responsible for the creation of a call for bids for SEZ development programmemes, such as "Concorso internazionale di idee per il disegno del nuovo paesaggio di bagnoli, compresa la definizione planivolumetrica del nuovo edificato di cui al programmema di risanamento ambientale e rigenerazione urbana" (International competition of ideas for the design of the new bagnoli landscape, including the planivolumetric definition of the new building referred to in the environmental remediation and urban regeneration programmeme) [7] and "Concorso internazionale di progettazione in unico grado per la realizzazione di interventi infrastrutturali con sistemazione aree verdi e realizzazione tram o riqualificazione Napoli Est 2.0" (International one-level design competition for the realization of infrastructural interventions with arrangement of green areas and construction of trams or redevelopment of Naples East 2.0).[8]

Overall, Campania's government, having better knowledge about issues that must be solved locally, prepared the Regional Strategic Development Plan (RSDP). The latter represents the operational plan that kicks off the establishment of SEZs in East Naples after the central government's approval. In 2018, East Naples' new SEZ was launched officially. To ensure its success, the regional government adopted different types of regulations. They consisted of the following:

- Bureaucratic simplifications
- Funds and incentives for investments
- Incentives for employment
- Incentives for energy efficiency improvement
- Tax credits

And after having finalized the institutional framework, Campania's government established the goals that it expects to achieve through SEZ programmes. These are:

a. Attracting big investment in sectors considered as strategic, given the regional vocation (aerospace, agriculture, automotive, tourism);
b. Increasing employment and re-qualify workers who are not engaged in the labor market;
c. Promoting circular economy and bio-economy principles in the following sectors: agriculture, zootechnics, fishing, aquaculture, forestry, packaging, chemicals, renewable energies;
d. Re-qualifying and modernizing infrastructure to uphold the development of productive activities;
e. Improving the energy efficiency of SEZ infrastructure
f. Upholding scientific research to empower knowledge and human capital. (Piano di Sviluppo della Regione Campania, 2018)

4. SEZ: more than an investment attractor

According to the latest UNCTAD definition (2019) "*SEZs are geographically delimited areas within which governments facilitate industrial activity through fiscal and bureaucratic incentives,*

[7] See *https://gareappalti.invitalia.it/tendering/tenders/000145-2019/view/detail/1*, last accessed on Janaury the 7th 2020
[8] See https://gareappalti.invitalia.it/tendering/tenders/000112-2019/view/detail/4, last accessed on March the 17th 2020

particular regulatory framework and infrastructure support, with the purpose to boost the economy." (p.128)

Traditionally SEZs were designed to enable countries to exploit more effectively their comparative advantages, mainly low-cost labor and greater availability of raw materials. Not surprisingly, SEZs have a well-established role in international trade (FIAS, 2008). Examples include Gibraltar (1704), Singapore (1819), Hong Kong (China; 1848), Hamburg (1888) and Copenhagen (1891).

Improving the domestic business climate and ecosystem seems essential to ensure economic development on a long run. (Meadows et al, 1992). When the business environment appears too complex, entrepreneurs are unlikely to invest their money in it. Entrepreneurs are always open to profitable opportunities; it is their job. Improving the business climate means clarifying all those legal aspects which make them hesitant, especially topics concerning how to start a business, get construction permits, employ workers, register property, get credit, pay taxes, trade across borders, close a business. Unsurprisingly, without the right policies, an attractive investment environment cannot be built up. Thus, the policy framework plays a fundamental role since it sets the rules of the game for all stakeholders involved and encourages investments.

Successful SEZ programmes make available short-term improvements but keep in mind the long-term developments as well. Critical to this process is the degree of integration of SEZs in the domestic socio-economic fabric. SEZ programmes' success is measured by the quality and quantity of benefits that the zone is eventually able to provide to zone operators. According to Farole Thomas & Akinci Gokhan (2011), those benefits are *static* if directly measurable (such as employment creation, income generation, FDI, revenues); *dynamic* if not quantitively measurable (such as skills upgrading and technology transfer).

The diffusion of both static and dynamic benefits requires policies that go beyond the scope of SEZ programmes (Farole Thomas & Akinci Gokhan, 2011). Employment creation is often a primary target and expected deliverables of a SEZ (UNCTAD, 2019). Sazzad Parwez, with its work on economic development in India (2018), highlighted how SEZs also has done well in terms of employment creation for large skilled workforce: between 2011 and 2014, SEZ employment increased more than 51 per cent, passing from 844.916 to 1.283.309 employed individuals.

Innovation and technology transfer appear also as targets of the highest importance. (Douglas Zhihua Zeng, 2011) Increasing domestic technological means boosting national firms' capabilities, making them able to produce goods more desirable on the global market. However, the assimilation process of new technologies is not so easy. It requires a first-rate learning ability, without which knowledge and technology cannot be either effectively absorbed or used domestically. (Fagerberg, Srholec & Verspagen, 2010) Training and education fulfill critical roles in enhancing the learning process at an individual level. Hence, upgrading the national education system can impact the overall skill level. A good example is linked to Campania NewSteel that is the only certified incubator in the Campania region. It is located in "Città della Scienza".[9] The incubator offers both logistical support with spaces dedicated to start-ups to incubate and co-working, but also business development services such as: networking events, tailored mentoring, support for internationalization through the European EBN network, and advanced prototyping laboratory on digital manufacturing and Industry 4.0, thanks to the presence of D.RE.AM FabLab of "Città della Scienza" and CESMA of Federico II.

However, in the last decade, sustainability has become one of SEZs' objectives worldwide. In 2001, China became the first country to establish a SEZ programme aimed to go beyond the mere economic development. The Ministry of Environmental Protection (MEP) launched the national demonstration programme for Circular Economy Pilot Zones (CEPZ), designing zones within which enterprises can run activities close to circular economy patterns. Although the global financial crisis, occurred in 2008, slowed down the programme (IISD, 2015), in the same year, the

[9] "Citta della Scienza" is an area of promotion and dissemination of science managed by the IDIS "Citta della Scienza" Foundation and located in the district of Bagnoli (Naples area).

Chinese government, extremely determined in pursuing its ecological development strategy, passed the Law for the Promotion of the Circular Economy, that came into effect on January the 1st 2009. Thanks to its persistence, China has been able to set up a consistent number of Eco-Industrial parks (EIPs), expressly designed to accelerate the circular economy transition. Indeed, at the first stage of its project (CEPZ) in 2005, China launched 13 EIPs, spread over ten provinces and involving 42 enterprises. In 2010, a programme established by the Ministry of Environment Protection, in conjunction with two other ministries, designated a total of 50 EIPs across the country (11 approved for completion and 39 approved for construction). (John A. Mathews & Hao Tan, 2011) Moreover, in 2014, the World Bank conceptualized a new economic zone as: Low-Carbon Zone. Such specialized zones expected to lower the carbon footprint of the industrial and related operations within the zone and provide a testing ground for pilot projects and policies for reducing the environmental footprint of industrial operations. (World Bank, 2014)

5. Circular Economy: a key driver for economic and sustainable development

The first conceptualization of Circular Economy (CE) dates back to the 1970s. Since then it has kept gaining momentum and mobilizing the attention of academia, business, civil society and public institutions. One of the first to sketch the circularity's backbone was Walter R. Stahel, who in the late 1970s started to develop a closed-loop approach to production processes. Afterwards, several other concepts have been developed including: Natural Capitalism (Paul Hawken, Amory B. Lovins & L. Hunter Lovins, 2003), Cradle to Cradle (William McDonough & Michael Braungart, 2003), Performance Economy (Walter R. Stahel, 2006), and the Blue Economy (Gunter Pauli, 2010).

CE and all those approaches, directly or indirectly, gravitate around the same principle: *self-sufficiency*. The best example of a self-reliant system is nature. CE takes inspiration from one of the well-known natural functioning mechanisms: the first principle of thermodynamics. This principle posits energy is neither created nor destroyed, but is transformed, passing from one form to another. So, by the latter, nature converts all resources into other forms of energy; similarly, the CE model does as well by turning goods at the end of their service-life into new outputs. Although, at first sight, it may look like a recycling-centered model, the CE model does not only aim to recycle old products and materials. It has more to do with an efficient management of resources; and to make it work, CE requires a radical change of mind. Each product represents a reserve of value that might be used again to produce new goods. It is a new paradigm, based upon preserving natural capital, optimizing resource yields and fostering system efficiency (Ellen MacArthur Foundation, 2015).

Ellen MacArthur Foundation, on its website, portrays CE as a system *"based on the principles of designing elimination of waste and pollution, keeping products and materials in use, and regenerating natural systems".*[10] Thus, the ultimate scope of the CE is to keep goods in the system for as long as possible and at their highest service-use. To do that, both consumers and producers need to change their behavior patterns. The former must re-think their consumption practice, while the latter must shape their business models to enable the reuse of resources already in the system, possibly infinitely. To create a joint commitment against unwise environmental exploitation is difficult but not impossible to achieve.

Since the direct beneficiaries of SEZ programmes are investors and entrepreneurs, they can also contribute to the CE transition starting from the SEZ. The best way they can do that, is to redesign their products**.** A circular-able design is crucially important to keep the values of goods high. In fact, without a design that makes goods (or their parts) eligible for re-usage, no circularity can be pursued due to the depletion may make impossible their re-introduction into the productive loop (Walter Stahel, 2019). And it is here that creativity comes into play.

[10] See https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy

6. Circular and Linear Economy: two opposite models

Circular economy concept in all its forms gravitates around the same fundamental principle: self-sufficiency. The question becomes: How?

Nature is a self-organized system, within which the majority of the organisms can live in symbiosis. There are two ways in achieving this self-sufficiency. Some species are equipped with bio-mechanisms that allow them to process resources and wastefulness coming out of other living beings, ensuring their survival; whereas, other species institute intimate relations with other organisms. This relation can assume two different connotations: 1*) commercialistic*, when only the guest takes advantage from the symbiosis, but without threatening the life of its host; 2) *mutualistic*, when both receive benefits from the cohabitation.

Example of the clownfish may help to explain the concepts. This species is particularly interesting due to its mutualistic relationship with the sea anemone (a solitary polyp shape, sometimes of considerable size, with an extreme variety of shapes and colors). The clownfish, dwelling among anemone tentacles, protects the anemone from predators, and in turn, the stinging anemone tentacles protect the clownfish from its hunters. This symbiosis is possible thanks to a special mucus on the clownfish's body that protects it from the stinging tentacles. But that is not all. For ages, scientists believed that the two partners were only a joint self-preservation entity. More recently, Joseph T. Szczebak et al (2013), from Auburn University in Alabama, showed that their relationship is more in-depth, due to the clownfish also fertilize the anemone with its ammonia-rich waste.

Overall, the circular economy model is founded precisely on this idea. It is a model in which all actors partner with each other to collect mutual benefits. A model in which specific features can serve to strengthen, improve and develop the features of others. A model in which everything produced, wasted and disposed of by someone can be re-used by someone else.

Looking at the Philips' business model, Circular Economy works by emulating the following motion of return-make-use-return-make-use-return.[11]

- Return

Procurement of all the resources necessary to produce goods and provide services, from waste, discarded and disposed of items, without abducting any new stock;

- Make

Processing and transforming these resources (inputs) into final products (outputs), through renewable energies with less environmentally impact;

- Use

A new way of consumption, where consumers look at goods as services useful to satisfy their needs rather than items to own.

In contrast the current economy model, which is linear, has run quite efficiently for centuries in the following fashion of take-make-waste:

- Take

Supply from nature all those materials necessary to produce goods and provide services;

- Make

Transform these resources (inputs) into final products (outputs) will be sold to consumers for the immediate satisfaction of their needs and desires;

- Waste

Dispose of damaged items, but even those that consumers do not need or want no longer to use.

Unfortunately, this model has a weak point. It needs infinite availability of resources to keep working. Due to heightened awareness of climate warming, it has become unequivocal a radical change is necessary. A new economic model which reduces the environmental impact of human doing. An alternative model that allows men to finally live in symbiosis with nature, instead of

[11] See https://www.philips.com/a-w/about/sustainability/circular-economy.html

acting as a parasite that receives sustenance out its host without giving anything in return is called for.

7. How to promote circularity

To arise collective commitment against environment exploitation is easier said than done. But it is possible.

Consumers can contribute to the circularity promotion the following way:

- Abandoning the idea of ownership and embracing the concept of leasing. Today, "ownership" refers to the legal right of possession. The "dominium ex iure Quiritium" is the oldest example of property right and was recognized only to the "cives" (roman citizens). It designated the full and exclusive belonging of a "res" (asset) to an individual, as a situation recognized and protected by law. (George Mousourakis, 2007) During the Renaissance, this concept was vigorously debated by Hobbes, Locke and Rousseau. With the passage from the "state of nature" to the "state of rights", men voluntarily accepted to lose part of their freedom, to enter in a society organized to guarantee security and peace among its members (citizens). The entrance is signed with a social contract, limiting the signatory's freedom, making him formally accepting rules established by a single or a group of individuals. However, according to Rousseau, the development of agriculture and metallurgy, and the consequent creation of private property and the division of labor, led to a growing mutual dependence of individuals and inequality among men. Putting aside all the juridical discourses and implications, the latter excursus makes clear a point: the evolutionary process the concept of property has gone through. The ultimate step is "leasing", that is the temporary possession or use of assets to another, behind a monetary compensation. The main leasing advantages comes out of the opportunity to frequently change assets, without causing premature waste. Consumers are just renters while producers become owners-providers of assets that, once got back, can be used again to produce new ones.
- Enjoying goods emotionally. Usually, enter in the grandparents' house makes a strange effect. It looks like clock hands stuck, and everything is in a good state of preservation. Talking with them makes clear why it happens, and why they love to surround themselves with old stuff instead of replacing them with the latest and better-performing items. The latter represents something more than just things. There is a story behind each of those objects, and they take care because they do not want to lose memories associated with them. Nowadays, people lost this emotional contact. They are continuously longing for the newest without considering that their story is, most of the time, connected with little objects. Thus, individuals need to learn from the older generations the take-caring aptitude for keeping the value of things high.

On the other hand, *producers* can do the following for the ascent of circular economy:

- Redesigning their products. A new design is crucially important to keep the values of goods (especially the value of resources used to produce them) high. Without a design that makes goods eligible for re-usage, no circularity can be pursued by their re-introduction into the productive loop. For example, a plausible solution might be designing products with components easy to be replaced. Overall, it might ensure to: 1) avoid accidental waste; 2) encourage and speed up the restoration; 3) enhance and standardize production.
- Adjusting marketing campaigns. Advertising and marketing play a central role in directing consumer choices to certain goods rather others. Moreover, they contribute to rising an unnatural desire for things that consumers do not need. If marketing campaigns begin to present, clearly, how circularity works, consumers might truly understand why it is so essential moving towards this model. The benefit would be mutual: consumers might have the freedom to change goods whenever they want, and producers might save significant amounts of money derived from reuse of resources. Overall, everything might occur without abducting new natural stocks.

8. Technology and e-waste

It is undeniable that innovation has been instrumental to the progressive improvement in goods manufacturing and services provision. Yet, adoption of new technologies impacts severely consumer habits, creating extra waste and making worse ecological spillovers. The linkages between technology, production and consumption if not mitigated could exasperate the negative externalities of the technology.

New technologies prompt men to improve their knowledge in the areas where it is inadequate, stimulate researchers, scientists, and engineers to strive for goals more and more ambitious. This expanded knowledge enables societies to organize more and more efficient production systems, ready to guarantee the fulfilment of a broader range of goods, more and more sophisticated, in a shorter and shorter time. Then, the increased productivity leads consumers to expect that more "needs" and desires (became now more sophisticated) are met through the purchase of the latest and better-performing goods at an ever-lowering price.

In other words, technological progress enables greater production capabilities, delivering faster and faster goods for the satisfaction of consumers' desires. The increasing availability and variety of products and services (made available by adopting new technologies resulting in increased productivity) raise the bar of consumer expectations higher and higher, with the consequence that search for new technologies becomes as essential to human well-being as air and water.

Today, however, consumers are witnessing a paradox. Technological innovation is gaining momentum, while service-life span of any goods are getting shorter than ever and becoming obsolete in ever quicker speed. On the other hand, every product exhausts its utility naturally after a specific time, ultimately zeroing its performance.

In the past, grandparent's generation tended to take care of the objects they bought, using them up to the point of their full exhaustion or repairing them in case of damages; current generations instead tend to substitute still-working items with new ones early before the natural end of their service life. Consequently, the introduction of new technologies, often supported by marketing campaigns flawlessly projected to push consumers to purchase these new gadgets with higher performance, anticipates the disposal of goods which instead might be still used. In addition to this, many producers have begun to design products that wear out or become outmoded after limited use, to stimulate consumer demand even more (planned obsolescence). (Serge Latouche, 2015) The extra disposal of still-working goods comes to add to the natural displacement of devices that have already exhausted their utility, eventually fastening the environmental deterioration seriously from exploitation of resources to soil pollution (electronic waste or e-waste). This marketing strategy influences costumers to think they need more performing products to satisfy their needs and desires, thus generating a significant amount of waste which would not exist if companies would not have influenced their choices. According to ITU (International Telecommunication Union), in 2016, the global quantity of e-waste generation was around 44,7 million metric tons (Mt), and it is expected to grow to 52,2 Mt in 2021, with an annual growth rate of 3 to 4%.

The table below (table 1) shows the regional e-waste distribution in 2016 around the world.

Tab. 1: E-waste regional distribution in 2016

REGION	% of world e-waste generation	Million metric tonnes (Mt)	Documented to be collected and recycled (Mt)	Number of countries	Inhabitants (billions)
	40,70%	18,2	2,7	49	4,4
Americas	25,30%	11,3	1,9	35	1
Africa	5,00%	2,2	0,004	53	1,2
Europe	27,50%	12,3	4,3	40	0,7
Oceania	1,50%	0,7	0,04	13	0,4
WORLD	**100%**	**44,7**	**8,9**	**190**	**7,7**

Source: Global E-waste Monitor 2017 (ITU, 2017), p. 60-79

Notably, only 19,9% (8,9 out 44,7Mt) of e-waste was recycled globally. If this harmful mindset and corresponding behavior patterns are not modified, the next generations will keep perpetuating and spreading this wrong attitude to consumption and production, pushing humankind to the point of no return.

Consumer habits and choices also drives how companies produce their goods. Thus, humans have to be conscious how their behavior impacts the ecosystem in which they are living in. Technologies can promote human development, but it also needs to be carefully examined. As tools, if not used wisely, technology could heavily jeopardize human existence.

Circular transformation needs to deploy advanced scientific knowledge and technological capabilities. A SEZ with its innovation mandate could be a pioneering space to experiment with the purposeful design of circularity within chosen sector or sub-sectors. Lessons learned can then be replicated in other spaces when re-juvenation of the local economy is called for.

The crucial role of urban landscapes in promoting Sustainable Development (SD) is recognized in the 2030 Agenda for Sustainable Development identifying culture and creativity as one of the essential levers for action in this context. A good example thereof is the Creative Cities Network set up by UNESCO to promote cooperation among cities that have identified creativity as a strategic factor for sustainable urban development (Francois Duconseille & Raymond Saner, 2020)

Creation of circular economy requires also thinking out of box and innovative breakthroughs. Diversity of world perspectives as well as visioning promote a rich field in specific domains. Cross-fertilization due to dense social networks and social capital formation enhance the innovation capacity of a region and generate a positive feedback loop in terms of economic and social returns. East Naples with its presence of the Federico II University Technology and other renown high tech companies is particularly endowed with the potential for creative practices and economic dynamism.

9. Creative Industry: key vehicle for economic and sustainable development

According to Hans d'Orville (2019), *"creativity is at the heart of sustainability".* Creativity concerns the ability to sort out knowledge and information to deliver new ideas aimed to find a remedy to complex problems, as well as to implement already existing solutions, simplifying or empowering them. Robert J. Sternberg (1999) sees creativity as relevant for the economic development since it allows humans to come up with new products and services that, eventually, create jobs.

John Howkins (2001) was the first to theorize about the link between creativity and economic development in his famous work titled *"The Creative Economy: How people make money from ideas".* According to him, the latter is a system in which knowledge-based skills represent assets to run economically profitable activities. The output of those activities can take the shape both goods and services. In 2019, UNCTAD classified creative goods into the following categories (table 2).

Tab. 2: Creative goods classification

Creative activities	Goods
Art crafts	Carpets, Celebration, Other art crafts, Paper-ware, Wicker-ware, Yarn
Audio-visual	CDs, DVDs, E-broadcasting, Film, Sound-production, Tapes
Design	Architecture, Fashion, Glassware, Interior, Jewellery, Toys
Digital fabrication	3D printers, 3D scanners, Laser cutters, CNC* milling, CNC* bots, Control boards
New media	Recorded media, Video games
Performing arts	Musical instruments, Printed music
Publishing	Books, Newspaper, Other printed matter
Visual arts	Antiques, Painting, Photography, Sculpture

Source: UNCTADstat platform, last accessed on March the 30th 2020

However, whereas goods can be considered as material outputs resulting from a creative (intellectual) process, the notion of service is linked to intangibility since it entails the performance of a particular task, rather than the provision of material goods. These tasks take the shape of all those outcomes of intellectual effort based on reasoning, data analysis, elaboration of information, or particular-skill-based activities. In 2018, UNCTAD carried out a useful creative services categorization (table 3).

Tab. 3: Creative services classification

Creative activities	**Services**
Advertising and marketing	Advertising, Market research, Polling services
Consultancy	Business analysis, management and orientation
Craft	Restoring antiques and handcrafts
Culture and heritage	Art (lessons, exhibitions), Event organization, Theatre manifestations, Tour guide
Design	Architecture, Digital content (apps, blogs, websites), Engineering, Fashion, Interior, Jewelry, Toys, Websites
IT and computer	Internet-based services (cloud, cybersecurity, server), IT equipment maintenance services, Software development
Media	Entertainment format (series, shows, radio programs)
Personal and recreational services	Mental coaching, Personal training, Performance-based activities (singers, actors, dancers)
R&D	Scientific research findings
Other services	All other services connected to intellectual efforts (reasoning, data analysis, elaboration of information), or technical knowledge applications

Source: Creative Economy Outlook: rends in international trade in creative industries 2002–2015 (UNCTAD, 2018)

A well-designed combination of SEZ, creativity and circularity could contribute to a brighter future and deliver tangible results in terms of jobs creation, sustainability promotion, and return on investment for investors. (Ellen MacArthur, 2015)

According to John Newbigin (2014), Chair of British Council Arts and Creative Economy Advisory Group members, policy makers generally think in terms of national policies, but the creative economy proliferates better with initiatives at a smaller scale level, that take the shape of creative hubs, clusters or districts. By this, what Newbigin meant that,

- *Hubs* are very specific locations, usually, a building or group of buildings, that provide affordable workspace, support, exhibition or sales space for creative entrepreneurs.
- *Clusters* describe a group of related or mutually dependent businesses and resources that are grouped together in a neighborhood or part of a city. A cluster creates a critical mass of skilled people, who exchange different ideas and techniques. The most famous example is Silicon Valley in the United States where a small group of digital technology businesses attracted talented individuals and other related companies until it grew to a cluster of world-class significance.
- *Arts or cultural districts* are demarcated urban areas intended to create a concentration of places for cultural consumption such as art galleries, dance clubs, theaters, art cinemas, music venues, and public squares for performances. Usually, in these districts, it is not to so difficult to find cafes, restaurants, printers, fashion outlets, traditional craft shops.[12]

In the last decades, manufacturing companies have increasingly started relocating to places often overseas where labor was cheap and the costs of taxation, energy and environmental regulation were low. However, the same has not been true for creative industries because their success is mainly linked to human talent. It means the social and cultural environment in which creative industries are located fulfills a vital role in attracting the new type of industries, much more than the fiscal incentives.

[12] See https://creativeeconomy.britishcouncil.org/guide/hubs-clusters-and-regions/

Creative businesses and entrepreneurs, especially those with limited resources at the early stage of business development, tend to locate where work and living spaces are inexpensive and affordable. Disused industrial areas fit this selection criterion. If gathered in declining industrial districts, creative people, artists and entrepreneurs, bring with them an avant-garde mindset, may give birth to low-cost solutions for re-using abandoned buildings and deserted districts. These initiatives could overtime transform such places into neighborhoods both more desirable even fashionable to work and live. A good example comes from the city of Dundee. Dundee houses two world-class universities, University of Dundee that boasts Jordan-Stone School of Art and Design and Abertay University that is specialized in digital design and a world leader in computer games related teaching and research. Not surprisingly, Dundee is seen by many as the home of gaming, since one of the most famous videogames like Grand Theft Auto (GTA) was created there. According to the reporting of UNESCO Creative Cities Network (UCCN)[13], game developers in Dundee are unlikely to move elsewhere since they know they have the higher chance of finding other comparable work or establishing their own businesses without relocating in another city. Dundee's story tells the success of university based creative capital in driving economic activities and knowledge-based employment.

10. SEZ policies supporting creative practices and activities in East Naples

In 2015, the Ellen MacArthur Foundation carried out a study to evaluate the Danish policy landscape aimed to trigger CE. It compared several policy interventions (i.e., business support schemes, public infrastructures, regulatory and fiscal frameworks) with existing ones, such as: 1) Fund for Green Business Development (EUR 27m 2013–2018) to support innovation and new business models; 2) Government Strategy on Intelligent Public Procurement contains initiatives to support circular procurement practices; 3) Strategy on waste prevention also contains an initiative to develop guidelines for circular public procurement; 4) Ambitious targets for recycling/incineration/landfill, updated every 6 years, e.g. recycle 50% of household waste by 2022; 5) Engagement at EU level to adapt existing or introduce new regulations relevant to the circular economy, e.g. product policy; 6) Taskforce for increased resource efficiency to review existing regulations affecting circular economy practices.

From this study, it has emerged that central government, thanks to its policies, is helping out Denmark to fulfil a leading role in biotechnological research and innovation, both in academia and in companies.

Naples is recognized worldwide as the place where pizza was first invented, and its people as the best pizza artisans. But this description is reductive and incomplete. Naples nurtured many great artists in the past. It gave birth to some of the most renowned Italian personalities in the art history, such as Luigi Vanvitelli, Giordano Bruno, Giambattista Vico, Torquato Tasso, Salvatore Di Giacomo and Salvator Rosa and warmly welcomed many others such as Giovanni Boccaccio, Caravaggio, Benedetto Croce, Giacomo Leopardi, Gabriele D'Annunzio and Pier Paolo Pasolini, just to name a few.

With its mild weather, beautiful scenery, open sea, friendly and open-minded people and savoir vivre, all conditions contributing to the creation of an environment in which creative ideas can proliferate are present. Neapolitans (especially whom belonging to the lowest classes) are also entrepreneurial and resilient who had to learn how to survive with extremely limited resources. A famous Italian movie, "L'arte di arrangiarsi" (Luigi Zampa, 1954) shows the people's ability to adapt to different circumstances even though sometimes their attitude verging on mere opportunism than longer terms thinking. Overall, this movie goes beyond this negative aspect and captures other important

[13] UCCN was created in 2004 to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development.

virtues such as people's capacity to innovate and be creative and adaptive even when faced with extreme adversity.

The enabling conditions and framework that often created by intentional policies of the government can also be seen in East Naples. An initial mapping and analysis of existing policies in East Naples SEZ, the following policies were found favorable for the incubation of creative industries either as a hub, cluster or districts (see table 4). It is also foreseeable that these policies could also help steer the launching of circular economy where social capital will be essential in developing a collaborative relationship between firms in order to foster this eternal motion of return-make-use-return-make-use-return cycle of economic activities.

Tab. 1: SEZ policies supporting creative activities and contributing to the formation of circular economy

Policies	**Creative activities**
Regional law August the 8th 2016 n. 22	○ Crafts
ROP ESF 2014-2020 (Regional Operative Programme of European Social Fund 2014-2020)	○ Consultancy ○ IT ○ R&D
ROP ERDF 2014-2020 (Regional Operative Programme of European Regional Development Fund 2014-2020)	○ Crafts ○ IT
Law September the 14th 2004 n. 26	○ Advertising & Marketing ○ Consultancy ○ Crafts ○ Culture & Heritage
Law May the 15th 1989 n. 181	○ Advertising & Marketing ○ Consultancy ○ Culture & Heritage
Development Contracts	○ Consultancy ○ Culture & Heritage ○ IT ○ R&D

Source: realized by authors after an in-depth analysis of Piano di Sviluppo della Regione Campania (2018)

11. Creative activities that support transition towards a Circular Economy

The contribution that business, and in particular creative business, can offer to the CE transition could be invaluable.

Creative Industries also includes alternative ways to organize platform related enterprises such as for instance cooperative platform companies which are not exploitative as are mainstream platform companies like Uber or Airbnb. (Raymond Saner, Lichia Yiu & Melanie Nguyen, 2019)

Overall, these creative industry enterprises embody activities that could be successfully reproduced within East Naples SEZ.

Table 5 below shows how they can trigger CE.

Tab. 2: Creative industry contribution to CE

Creative activities	**Creative services**	**Major contributions to CE**
Advertising & Marketing	○ Marketing and advertising campaign in promoting an alternative consumption patterns	• Help people to pass from the ownership to leasing concept • Spread knowledge about and desire for sustainability
Consultancy	○ Business services in management, organization and communication for developing local supply and value chains that co-evolve into circular economy domain	• Adjust marketing campaigns • Develop eco-friendly business models and business plans • Propose and catalyst new partnerships and collaborative networks
Crafts	○ Handicraft customized products ○ Restoring antiques ○ Sustainable materials ○ Energy efficiency ○ Environmentally friendly packaging	• Develop a sense of caring • Increase the quality of human capital and human centered working conditions • Maintain high value and efficiency of goods • Regenerate and reuse materials and items • Engage in a cicular production system
Culture & Heritage	○ Art exhibitions ○ Local events and manifestations ○ Tourism ○ Community building especially after COVID-19 ○ Waste recycling and reduction ○ Cultural story telling that supports mindful living	• Develop a sense of belonging • Maintain high value and efficiency of cultural legacy and heritage memorabilia's • Empower recycling • Support mindset shift and alternative storytelling • Produce new artifacts that are aligned to the circular lifestyle
Design	○ Eco-design patterns ○ New ways of using wasted or sorted materials ○ Design thinking as a methodology and a way of working	• Redesign products • Empower recycling • Inclusive public spaces • Co-design and mutual engagement for public service delivery
IT	○ Digital platforms (websites, apps) supportive of collaborative teamwork, cross-organizational boundary planning and place making	• Enhance sharing systems and platforms • Empower recycling • Data visualization and mapping for accountability and learning • Knowledge management for transformative projects
Media	○ TV spots ○ Advertising ○ Radio programs ○ Newspaper article ○ Interactive communications ○ Media events	• Spread knowledge about sustainability • Reinforcing change • Storytelling of the "heroes", the frontline change makers and the everyday innovations
R&D	○ Research applied industry ○ New materials ○ New tools ○ New measurements ○ New technology	• Investigate new solutions • Empower recycling and reuse • Empower knowledge about sustainability • Enable new learning

Source: realized by authors

East Naples SEZ's laws and policies that encourage creative activities (table 4) are linked to the potential contributions to CE that could be brought to the mix by the creative industries (table 5). Table 6 draws the "fil rouge" (red threads) that could support East Naples economic and sustainable

development by reviewing policies pertaining to both creative industries and circular economy. In other words, table 6 aims to show how creative activities and circular economy transition can be empowered by existing SEZ polices, such as funds, business incentives and tax reliefs.

Tab. 3: SEZ policies, creative activities and CE contributions

SEZ policies	**Creative activities**	**CE contributions**
Regional law August the 8th 2016 n. 22	○ Crafts	• Develop a sense of caring • Engage in a cicular production system • Increase the quality of human capital and human centered working conditions • Maintain high value and efficiency of goods • Regenerate and reuse materials and items
ROP ESF 2014-2020 (Regional Operative Programme of European Social Fund 2014-2020)	○ Consultancy ○ IT ○ R&D	• Adjust marketing campaigns • Data visualization and mapping for accountability and learning • Develop eco-friendly business models and business plans • Empower knowledge about sustainability • Empower recycling • Empower recycling and reuse • Enable new learning • Enhance sharing systems and platforms • Investigate new solutions • Knowledge management for transformative projects • Propose and catalyst new partnerships and collaborative networks
ROP ERDF 2014-2020 (Regional Operative Programme of European Regional Development Fund 2014-2020)	○ Crafts ○ IT	• Data visualization and mapping for accountability and learning • Develop a sense of caring • Empower recycling • Engage in a cicular production system • Enhance sharing systems and platforms • Increase the quality of human capital and human centered working conditions • Knowledge management for transformative projects • Maintain high value and efficiency of goods • Regenerate and reuse materials and items
Law September the 14th 2004 n. 26	○ Advertising & Marketing ○ Consultancy ○ Craft ○ Culture & Heritage	• Adjust marketing campaigns • Develop a sense of belonging • Develop a sense of caring • Develop eco-friendly business models and business plans • Empower recycling • Engage in a cicular production system • Help people to pass from the ownership to leasing concept • Increase the quality of human capital and human centered working conditions • Maintain high value and efficiency of cultural legacy and heritage memorabilia's • Maintain high value and efficiency of goods • Produce new artifacts that are aligned to the circular lifestyle • Propose and catalyst new partnerships and collaborative networks • Regenerate and reuse materials and items • Spread knowledge about and desire for sustainability • Support mindset shift and alternative storytelling
Law May the 15th 1989 n. 181	○ Advertising & Marketing ○ Consultancy ○ Culture & Heritage	• Adjust marketing campaigns • Develop a sense of belonging • Develop eco-friendly business models and business plans • Empower recycling • Help people to pass from the ownership to leasing concept

SEZ policies	Creative activities	CE contributions
		• Maintain high value and efficiency of cultural legacy and heritage memorabilia's • Produce new artifacts that are aligned to the circular lifestyle • Propose and catalyst new partnerships and collaborative networks • Spread knowledge about and desire for sustainability • Support mindset shift and alternative storytelling
Development Contracts	○ Consultancy ○ Culture & Heritage ○ IT ○ R&D	• Adjust marketing campaigns • Develop eco-friendly business models and business plans • Propose and catalyst new partnerships and collaborative networks • Develop a sense of belonging • Maintain high value and efficiency of cultural legacy and heritage memorabilia's • Empower recycling • Support mindset shift and alternative storytelling • Produce new artifacts that are aligned to the circular lifestyle • Enhance sharing systems and platforms • Empower recycling • Data visualization and mapping for accountability and learning • Knowledge management for transformative projects • Investigate new solutions • Empower recycling and reuse • Empower knowledge about sustainability • Enable new learning

Source: realized by authors

A central location, the presence of Federico II University Technology Campus, big-tech companies' investments, fair and supportive SEZ polices and existing human capital and infrastructure, all provide East Naples with a real chance to benefit from favorable conditions offered through the establishment of a SEZ. While the world economy is realigning itself to lead into the post-COVID recovery, East Naples SEZ with its three prone policy strategy could lead the way in regenerating an alternative economic model that would be sustainable and inclusive in the next future.

12. Limitations and future research

The decision to create SEZ is very recent (2018) and implementation has not yet fully started. Hence the analysis given and the suggestions given for adopting creative industry and circular economy to the SEZ of East Naples is exploratory. Implementation of such proposals, if accepted by the authorities, can only be started the earliest in 2021 and evaluated in the coming 4-5 years.

Organizational growth of new forms of entrepreneurial activities will be different than conventional growth of private sector companies. Lessons could for instance be applied from growth patterns of cooperatives for new creative industry organizations (Raymond Saner & Lichia Yiu, 2017) in other parts of Italy which are also faced with economic stagnation, environmental threats and ageing population.

A natural continuation of this paper could be an in-depth study on what may generate the most beneficial effects, in terms of sustainable development, for the SEZ of East Naples and, more generally, how such a novel tri-policy development strategy could be applied to other SEZs.

13. Conclusion

The goal of this paper was to show why it is relevant to integrate the policies of Special Economic Zone (SEZ) with Creative Industries (CI) and Circular Economy (CE).

East Naples is one of the 29 SEZs which were established after the approval in 2018 by the central Italian government. This district has been selected by the authors for an in-depth analysis because the district offers several important features like strategic geographical position, high availability of free spaces for re-use programmes, presence of both tech companies and university campus, and strong local cultural heritage.

Key concepts of SEZ, CI and CE have been presented and applied to the East Naples SEZ in the form of a hypothetical case study. The authors explain how an integration and joint application of the three policies can work and generate quality jobs, offer opportunities for sustainable growth and a return on investment for investors. In order to provide a solid base to validate the hypothesis, a detailed analysis of already existing SEZ policies (tax reliefs, bureaucratic simplifications and financial tools) were undertaken. The purpose was to show that creative entrepreneurs investing in the East Naples SEZ could find ample opportunities to create environmentally sustainable, economically viable and socially beneficial forms of investment.

Table 5 visualizes how SEZ policies can enable creative industry and attract creative capital and talents. Finally, table 6 show the linkage between such policies, creativity and circularity and propose possible benefits from such synergy.

References

DUCONSEILLE F., SANER, R. (2020), "Creative Placemaking for Inclusive Urban Landscapes", *The journal of arts management law and society,* Routledge Francis & Taylor Group, p. 1-18

D'ORVILLE H. (2019), "The Relationship between Sustainability and Creativity", *Cadmus: Promoting Leadership in Thoughts that Leads to Action, Volume 4, Issue 1,* p. 68-70

ELLEN MACARTHUR FOUNDATION (2015), *Delivering the circular economy: a toolkit for policymakers*, p. 22-47

FAGERBERG J., SRHOLEC M., VERSPAGEN, B. (2010), "The Role of Innovation in Development", *Review of Economics and Institutions, Perugia University, Vol. 1, n. 2,* p. 19-20

FAROLE T., AKINCI G. (2011), *Special economic zones: progress, emerging challenges, and future directions,* Washington, DC: World Bank, p. 36-96

FIAS (2008), *Special Economic Zones: performance, lessons learned, and implications for zone development,* Washington, DC: World Bank, p. 2-16

HAWKEN P., LOVINS, A.B., LOVINS, L.H. (2003), *Natural Capitalism: Creating the Next Industrial Revolution***,** Back Bay Books

HOWKINS J. (2001), *The Creative Economy: How People Make Money from Ideas,* Penguin, UK

IISD (2015), *Greening China's Financial System*, Olso: THE FRIDTJ OF NANSEN INSTITUTE (FNI)**,** p. 68-70

ILO (2019), *Financial Mechanisms for Innovative Social and Solidarity Economy Ecosystems*, Geneva: ILO

ILO (2020), *ILO Monitor: COVID-19 and the world of work. Third edition. Updated estimates and analysis*, p. 1-3

LATOUCHE S. (2015), *Usa e getta. Le follie dell'obsolescenza programmata*, Bollati Boringhieri, p. 114-115

MATHEWS J.A., TAN, H. (2011), "Progress Toward a Circular Economy in China, *Journal of Industrial Ecology, Vol. 15, Issue 3,* p. 435-457

McDONOUGH W., BRAUNGART, M. (2003), *Cradle to Cradle: Remaking the Way We Make Things*, North Point PR

MEADOWS D.H. et al (1992), *The Limits to Growth,* Universe Books, New York

MOUSOURAKIS G. (2007), *A Legal History of Rome*, Routledge Taylor & Francis Group, p. 5-7

PAULI G. (2010), *Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs*, Paradigm Pubns

PAPKE L.E. (1993), "What do we know about enterprise zones?", *National Bureau of Economic Research, Tax Policy and the Economy, Vol. 7*, p. 37-44

PARWEZ S. (2018), "Enterprising SEZ Enclaves and Economic Development in India", *Journal of International Business and Economy, 19(1),* p. 19-21

REGIONE CAMPANIA (2018), *Piano di Sviluppo della Regione Campania*, Bollettino Ufficiale della Regione Campania, n. 26

SANER R. YIU, L. (2017) "A literature analysis of organisational growth challenges of Cooperatives and their potential contribution to developing countries' development: an assessment and suggestions for future research", *Sinergie Italian Journal of Management, FONDAZIONE CUEIM, Verona, Italy*

SANER R., YIU L., NGUYEN M. (2019), *Platform Cooperatives: the social and solidarity economy and the future of work*, Geneva: UNTFSSE
STAHEL W.R. (2006), *The Performance Economy*, Palgrave, UK-USA
STAHEL W.R. (2019), *The Circular Economy: A User's Guide*, Routledge, London
STERNBERG R.J. (1999), *Handbook of creativity*, Cambridge University Press, Cambridge
SZCZEBAK J.T. et al (2013), "Anemonefish oxygenate their anemone hosts at night", *The Journal of Experimental Biology*, n. 216, p. 970-976
UNCTAD (2013), *Trade and environmental review 2013: Wake up before it is too late*, Geneva: UN, p. 7-9
UNCTAD (2018), *Creative Economy Outlook: rends in international trade in creative industries 2002–2015*, Geneva: UN, p. 11-14
UNCTAD (2019), *World Investment Report 2019*, Geneva: UN, p. 128-175
WORLD BANK (2014), *Low-Carbon Zones: A Practitioner's Handbook*, Washington, DC: World Bank, p. 8-11
ZENG D.Z. (2011), "How Do Special Economic Zones and Industrial Clusters Drive China's Rapid Development?", *World Bank, Policy Research Working Paper, 5583*, p. 7-10

Websites

http://advancedenglishb.pbworks.com/f/A_Legal_History_Rome.pdf
http://burc.regione.campania.it/eBurcWeb/directServlet?DOCUMENT_ID=113617&ATTACH_ID=16956
http://documents.worldbank.org/curated/en/343901468330977533/pdf/458690WP0Box331s0April200801PUBLIC1.pdf
http://documents.worldbank.org/curated/en/343901468330977533/pdf/458690WP0Box331s0April200801PUBLIC1.pdf
http://documents.worldbank.org/curated/en/406281468149388758/pdf/905110WP0Box380arbon0Zones0Handbook.pdf
http://documents.worldbank.org/curated/en/752011468203980987/pdf/638440PUB0Exto00Box0361527B0PUBLIC0.pdf
http://unsse.org/knowledge-hub/platform-cooperatives-the-social-and-solidarity-economy-and-the-future-of-work/
http://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf
https://cadmusjournal.org/article/volume-4/issue-1/relationship-between-sustainability-and-creativity
https://circulareconomy.europa.eu/platform/sites/default/files/100storie_def_web_pag_singole_25-05-18_1527247969.pdf
https://core.ac.uk/download/pdf/6838319.pdf
https://covid19.who.int
https://creativeconomy.britishcouncil.org/guide/hubs-clusters-and-regions/
https://doi.org/10.1080/10632921.2020.1754985
https://gareappalti.invitalia.it/tendering/tenders/000112-2019/view/detail/4
https://gareappalti.invitalia.it/tendering/tenders/000145-2019/view/detail/1
https://jeb.biologists.org/content/jexbio/216/6/970.full.pdf
https://jeb.biologists.org/content/jexbio/216/6/970.full.pdf
https://openknowledge.worldbank.org/bitstream/handle/10986/2341/638440PUB0Exto00Box0361527B0PUBLIC0.pdf?sequence=1&isAllowed=y
https://sustainabledevelopment.un.org/sdg12
https://unctad.org/en/PublicationsLibrary/ditcted2012d3_en.pdf
https://unctad.org/en/PublicationsLibrary/ditcted2018d3_en.pdf
https://unctad.org/en/PublicationsLibrary/wir2019_en.pdf
https://unctadstat.unctad.org/EN/Classifications/DimCreativeProducts_Creatives_Hierarchy.pdf
https://www.ellenmacarthurfoundation.org/assets/downloads/20151113_DenmarkCaseStudy_FINALv02.pdf
https://www.ellenmacarthurfoundation.org/assets/downloads/publications/EllenMacArthurFoundation_PolicymakerToolkit.pdf
https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy
https://www.gazzettaufficiale.it/eli/id/2017/06/20/17G00110/sg
https://www.iisd.org/sites/default/files/publications/greening-chinas-financial-system.pdf
https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---coop/documents/publication/wcms_728374.pdf
https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_743146.pdf
https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_743146.pdf
https://www.overshootday.org/newsroom/past-earth-overshoot-days/
https://www.overshootday.org/newsroom/press-release-june-2019-english/
https://www.philips.com/a-w/about/sustainability/circular-economy.html
https://www.researchgate.net/publication/47443847_The_Role_of_Innovation_in_Development

Something old, something green! A study on the relationship between vintage marketing and sustainability in the Italian agri-food sector♦

ANNUNZIATA TARULLI* DOMENICO MORRONE• PIERLUIGI TOMA♠

Abstract

Objectives. *This research aims to find out the possible relationship between the "nostalgia effect" (related to Vintage Marketing topic) and sustainability applications (declined in its environment, social and economic way) in the Italian Agri-food sector. In particular, the analysis is focused on organic food products in order to detect their acceptance among consumers, evaluating the pros and cons.*

Methodology. *In order to answer research questions, the data were collected through the diffusion of an online questionnaire, shaping a stratified (even if little) sample. Two exploratory factor analyses were carried out to identify latent factors.*

Findings. *The data elaboration shows interesting results. In fact, the relationship between Vintage and Sustainability is discovered as positive, implying that memories of past consumption are capable to influence future consumers' food purchasing choices.*

Research limits. *Data collection and analysis were limited from two fronts: first, they are related only to Italian consumers and, second, the sample is not large in number. Therefore, future researches should include a bigger dataset, collected from different countries and regions.*

Practical implications. *Observing the results and their managerial implications, valid information is provided for practitioners and researchers, to highlight a marketing opportunity in influencing consumers' behaviours, where all the potentials have not yet been expressed.*

Originality of the study. *The research represents a fresh new theme that does not find much evidence in the managerial literature. This favourable condition allowed us to study the possible relationships existing in these unrelated topics, in order to fill its literature knowledge gap.*

Key words: *vintage; sustainability; Agri-food; marketing; nostalgia; green*

♦ Authors' contributions: Annunziata Tarulli wrote the Literature review, and Data and Sample section. Domenico Morrone contributed to the Introduction, the Research objectives, and Questionnaire Development and Instrument sections. Pierluigi Toma is responsible for Results. All the authors wrote the Discussion and conclusion section and the body of the paper, read and approved the final manuscript.

* Ph.D. student in Economics and Management of Sustainability and Innovation - LUM "Jean Monnet" University, Casamassima (BA) - Italy
e-mail: tarulli.phdstudent@lum.it

• Associate professor in Management - LUM "Jean Monnet" University, Casamassima (BA) - Italy
e-mail: morrone@lum.it

♠ Assistant professor in Econometrics - University of Salento - Italy
e-mail: pierluigi.toma@unisalento.it

Sinergie-SIMA 2020 Conference
Grand challenges: companies and universities working for a better society
7-8 September 2020 - University of Pisa-Sant'Anna School of Advanced Studies Pisa (Italy) - Online Conference

Referred Electronic Conference Proceedings
ISBN 97888943937-3-6

DOI 10.7433/SRECP.FP.2020.01

1. Introduction

This work is focused on two popular topics in the marketing field, that are *Vintage Marketing* and *Sustainable Marketing*. The goal of the present work is to verify the existence of an interest, evaluating consumers' behaviour, in value propositions characterized by vintage elements and sustainable features.

The birth of this research, that is an explorative analysis, is related to understand the real value of production systems used in past times, above all when these systems were adopted, successfully, in association with products/brands that have become famous.

Many times, these operations were far from an intensive approach, without a heavy burden on the natural ecosystem and it is also the right direction for a new relationship between the economic system and the natural environment.

Therefore, the rediscovery of such experience in a modern perspective, connected with the paradigm of sustainability, could open a new way in the marketing field, both theoretically and for managerial implications.

An "old" vision that could be a concrete opportunity to review the sustainability in a different way, fishing in the past good practices linked to well-known offers.

In particular, handmade or limited productions, when they are realized through simple and not industrialized steps, or without the intensive use of artificial/chemical raw materials, could just hit the target of "sustainable" propositions.

When these features are connected with a positive experience, linked to a product or to a brand lived in the past, there could be an improved way to enlarge market acceptance.

It is clear as this concept could not be totally clear at first sight, since it is a different perspective in promoting sustainability when the latter is associated with a "nostalgia" effect.

However, this path deserves to be explored, presenting promising potentialities.

The attempt made in this research is focused on agri-food products, specifically in organic products, where the topics above mentioned could be all collected.

Section 2, related to the literature review, is focused on *Vintage Marketing*, to understand whether its nostalgic component affects consumers purchasing decisions making and how. As far as *Sustainability* and *Green Marketing*, a theoretical framework of sustainable consumption was provided, such as the guidelines of Sustainable Development Goals (SDG), focusing on the Italian situation.

Although these topics seem unrelated, it is possible to create a first theoretical link between the nostalgic sentiment typical of Vintage Marketing strategies, Sustainability, and the Italian Agri-food sector. Using the consumers' point of view, a review of their behaviour at purchasing time is proposed, analyzing the internal and external factors that influence them. In fact, through neuromarketing theories, the importance of emotions in purchasing decision-making processes is described, especially in the case of Agri-food products. In addition, consumers' behavioral approaches and the review of quality attributes (i.e. *experience*, *convenience*, and *credence*) related to the food sector are deeply analyzed in order to better understand its mechanisms and predict future scenarios.

The aim of the research was to identify, through an empirical investigation, a possible relationship between the nostalgic feeling of Vintage Marketing strategies (specifically, the *repro marketing*) and Sustainability (environmental, social, economic), and the influence that this relationship may have in food purchasing decisions. For these reasons, in Section 3, data were collected through an online questionnaire and were analyzed as follow: at first, through the analysis of descriptive statistics, were detected the socio-demographic characteristics of the sample and the first empirical evidence; secondly, the econometric analyses clearly defined whether the concepts of nostalgia and sustainability were actually perceived by consumers in Agri-food sector. In fact, through exploratory factor analyses, present in Section 3, were identified the latent factors among variables, which conducted us to predict possible managerial and future strategies.

Even if the study is still in its embryonic phase, it is able to provide new ideas to researchers and companies, guiding them towards future strategies, as represented in the last section.

2. Literature review

The analysis of the literature review focused on the following topics: Vintage Marketing and its "nostalgia effect"; Sustainable consumption as strategic sales driver; and the role of nostalgia and sustainability in consumers' decision-making process. Through the review of these topics, it will be possible to understand the factors that drive consumer behaviour in their purchasing choices. Moreover, this background will make easier to interpret the results carried out by exploratory factor analyses, explained in the next sections.

2.1 Nostalgia and Retro Marketing

Nostalgia is a sentiment for the past, typically for a period or place with happy personal associations (Boyms, 2008). The term has its origins from a Greek compound, consisting of νόστος (meaning "homecoming") and άλγος (meaning "pain" or "ache"), so "pain of homecoming". It represents an emotional state - a form of melancholy - characterized by a sense of sadness and regret in relation to the distance from loved ones, or places, or for an event that occurred in the past that a person would like to relive (Treccani).

Many scholars have tried to define and classify nostalgia and its various forms, and apply it to several research areas, from sociology to philosophy and, in recent years, also to marketing. As regards philosophical production, there exist numerous contributions on the subject. Kant (1798) defines nostalgia as a mere representation of reality created by the individual on his own sensory perception basis. In sociology, Fred Davis (1979) expressed nostalgia in two ways: *personal*, which associates nostalgia with the individual's life cycle, and *communal*, which refers to a sentiment that involves a large number of subjects within society through significant changes (such as revolutions, wars, etc..).

Marketing introduced the so-called "*nostalgic link*" between consumers and products (Schindler et al, 2003). It identifies a process in which output is a personal relationship between consumer and product during a specific stage of life, called "*preference age peak*", corresponding at the age of 24. As a consequence, according to Holbrook and Schindler (2003), nostalgia can be defined as "*the preference for objects* (people, places, or things) *that were more common* (popular, fashionable, or widely distributed) *when we were younger* (in adulthood, in adolescence, as children or even before we were born)".

While Holbrook and Shindler can be considered the precursors of scientific studies concerning the nostalgia role in purchasing behaviors and decisions, however, it must also refer to others: *Holak and Havlena* (1992, 1998), *Goudling* (2001), *Fairey* (2003), *Muehling and Sprott* (2004), *Reisenwitz, Iyer and Cutler* (2004) and others. According to these studies, there is a close relationship between consumer, product, and nostalgia. Davis (1979) stated that nostalgia can be divided into three orders, as summarized as follow:

- First order (or *Simple*) nostalgia: it is based on the belief that individuals consider past objects or events as better;
- Second order (or *Reflexive*) nostalgia: it is based on the belief that past eras are better than the present ones;
- Third order (or *Interpreted*) nostalgia: people compare the current situation with the emotions that nostalgia causes, with the aim of improving the present.

In order to unleash a psychological state focused on nostalgia, individuals must necessarily seek it in memory (which has to be both experienced firsthand and acquired externally) (Braun, 2002). In fact, only through the availability and reliability of their recollections, they act and make purchasing decisions recalling past experiences.

In marketing, nostalgia has the aim of bringing the history of a brand, its historical evolution, and all the events of individuals' personal life related to that specific brand to the mind of consumers. In other words, it is useful for developing consumer-brand engagement in a given context.

Here are located the concepts of *Retro* and *Vintage Marketing*. Even if there is still no clear definition, *Retro Marketing* can be defined in relation to its categories: *Repro*, *Retro*, and *Repro-Retro*. In this work, we focused on the *Retro* one, in which the nostalgic dimension explains the consumers' continuous search for authenticity towards certain brands, both from an individual and collective point of view. In addition, the revival of old brands allows us to create a connection between the consumer, the past, and the community, which is functional from a strategic side. Hence, the growing attention to products related to the past. Definitively marketing could be able to transform in a real opportunity a content, nostalgia, considered initially only with negative aspects, above all when, evaluating the literal meaning, it was defined as the suffering caused by the yearning to return to one's place of origin (Wildschut et al., 2006).

2.2 Sustainable consumption as sales strategies driver

The latest profound environmental changes and the uncertainty that remains on the current economy have raised several questions that involve, in different ways, both businesses and consumers. Since the global crisis of 2008, the entire capitalist system has been questioned, leading to a focus shift from profit (Porter et al., 2007) to principles relating to ethics, environmental protection, the fight against pollution, and social progress. For this reason, companies have started to consider their stakeholders in a new light, integrating sustainable development issues with their strategies (Grant, 2008).

In fact, over time, consumer behavior has changed: from being mainly compulsive and environmental impact's careless, it becomes more reflective and attentive, especially from an ecological and social point of view. This demonstrates the centrality of the role of consumption (Grant et. al, 2009), so it is essential to understand in which direction the way in which individuals consume moves. Moreover, an increasing number of consumers are looking for alternative spending proposals than current ones.

In this perspective, the role of responsible consumption assumes considerable importance as consumers' attention on concepts such as saving, recycling, and reusing products grows. Thus, consumers become creators of their own experiences of sustainable consumption (Carù, 2009). Thanks to the awareness and creation of autonomous consumer experiences, individuals are looking for their own identity and distinctiveness, which are no longer affected by the brand's reputation, but linked to autonomous choices (Carù, 2009).

In response to this increased consumer awareness, also international institutions have paid greater attention to the environment and sustainable development issues. In particular, the United Nations have identified the 17 objectives, the so-called Sustainable Development Goals (SDG), placed in the Agenda 2030 for Sustainable Development. These objectives have, as a common denominator, the awareness of sustainable development that must be the basis of every economic and social choice, both by governments and by individual citizens.

In the last decades marketing adopted entirely the paradigm of sustainability, going from an answer to an ecological problem, during the '70s, to a process that actually incorporates ethical and social aspects as futurity and equity (Morrone, 2012).

Regarding the development and sustainable consumption issues, current literature highlights the consideration that individuals can have a better life only if they undertake to build a better society (Sardar, 2007). In their transition to more sustainable consumption, consumers can count on Green Marketing applications. In fact, this new shade of Marketing acts as a means of spreading conscious and sustainable consumer practices.

2.3 The role of nostalgia and sustainability in consumers' decision-making process

The study of consumer behavior is a topic widely treated in the literature, which purpose is to provide answers about the possible actions and reactions of individuals or groups, inherent to the use, purchase and spatial location of products in a specific area.

Thanks to the development and implementation of behavioral models, it was possible to provide plausible explanations regarding phenomena that previously were considered inexplicable (David et al., 2016). Furthermore, this allows for understanding the reasons why, in modern society, acting through effective Retro Marketing strategies allows us to obtain excellent results in terms of sales volumes and brand awareness.

The analysis and understanding of the stimuli that daily affect consumers must necessarily consider how individuals react to internal and external stimuli in purchasing behavior. Therefore, numerous Neuromarketing studies highlight that the stimulus (the so-called *trigger*) is a fundamental element since, if well addressed, it can be capable of triggering a series of brain mechanisms that lead consumers to buy one product rather than another (Gallucci, 2019).

Consumers' purchasing choices are influenced by various and complex emotions. Consequently, the ability of businesses to unleash emotions (positive or negative) in consumers' minds is closely related to the stimulation of some specific areas of the brain. In particular, in the human brain, there is a particular area, called the *Central purchasing decision*, capable to activate neurons when a consumer is about to buy or not to buy a specific product. Its activation, although it seems to start randomly, follows a clear and recognizable pattern that allows forecasting future choices of a potential buyer (Gallucci, 2019). In marketing, particularly in Vintage Marketing, emotions are capable of making the purchasing time more or less attractive in relation to variables that have nothing to do with the characteristics of the product (for example, influenced by past experiences, or related to a particular emotional phenomenon called *somatic marker*).

In the Agri-food sector, the implications deriving from the study and understanding of neurological phenomena and the conscious and unconscious motivations that push consumers towards a particular purchase play a decisive role, enough to substantially modify the current perception of food. Modern consumers pay more attention to the consumption experience's value of a product and not to the product itself (Meo, 2019). As a result, communication and marketing strategies are no longer directed towards enhancing products but towards individuals, considering their habits, lifestyles, emotions, and perceptions they have in relation to the consumption of food products. In other words, individuals are irrational because, in the elaboration of purchasing decision-making processes, emotions and memory have a leading role.

Emotionality in purchasing choices is widely affirmed in the literature (Gallucci, 2019; Lindstorm, 2013) as in the food products sector. Various factors influence consumers' perception of food products such as design, packaging, brand image, positioning on shelves, sensory involvement, and memories. As regards memories, they are related to the vintage concept. In particular, "*vintage foods*" means all those products that evoke, intentionally and consciously, a past culture more or less distant from the current era in which they are consumed. In recent years, the vintage concept applied to the Agri-food sector has received considerable interest both from the scientific community and from consumers. As regards consumers, they look to the past in order to recover the awareness of a more authentic and genuine food style, characterized by greater attention to quality and purity attributes of food products, which is totally in contrast to contemporary consumption styles. Therefore, nostalgia in the food sector seeks for authentic, traditional, and genuine flavours that postpone attention towards a rural world and its related values.

The sustainable development issue interests also the Agri-food sector. In fact, empirical evidence shows that the way in which food products are consumed has a decisive impact both on individuals' environment, economic and social sphere (Seuneke et al., 2013; Morgan et al., 2009; Goodman and Watts, 2007; Sage, 2014). Therefore, the systems of production and consumption of food products play a decisive role in the fight against waste and more appropriate and sustainable use of the planet's resources (Carolan, 2018). These concerns push companies to seek new food

production, distribution, and consumption strategies aimed at creating an innovative model of integrated economic development, which origin lies in the individual local territories.

Regarding consumers' behaviour in the Agri-food sector, some research (Cristini et al., 2015; Davies et al., 1995; Zanoli et al., 2002) highlights the growing interest in consuming organic food and local products. Like organic food, consumers associate both aspects relating to food safety, physical well-being, and other aspects such as protection of the environment, landscape, and well-being animal. As local foods, consumers value them with features such as greater freshness, food safety, and greater healthiness of the product (Lombardi et al., 2015; Bagdonis et al., 2009; DeLind, 2002). In addition, consumers figure the purchase of local products as a way to safeguard and protect the social and environmental aspects typical of local agriculture, contributing to the maintenance and well-being of rural communities.

A further line of research highlights that the interest shown by consumers for local food is linked to a different way of perceiving the quality of food (Migliore et al., 2015). In this sense, quality is perceived by consumers, as well as with attributes such as taste and safety, also with elements characterized by a greater degree of subjectivity, particularly linked to the social and environmental aspects represented by the products.

The information represents the fundamental elements for consumers when they have to choose the type of product to buy, especially in the food sector. From this consideration, the attributes of quality *experience* (i.e. taste, freshness, etc...), *convenience* (i.e. simplicity and convenience of consumption) and *credence* (i.e. organic products, environmental and social sustainability, the origin of the product and ethics) play a fundamental role since they represent all the typical characteristics of a food product (Ophuis et al., 1995; Andersen and Philipsen, 1998; Deshmukh and Mohan, 2015).

Organic products belong to *credence* attributes. Its term defines the way in which the production process is carried out (i.e. no chemical use, natural time flow in cultivation, etc...). In relation to the ways in which consumers approach organic product purchase and consumption, many scholars have carried out studies on the topic. They concluded that consumers associate the term "organic" with elements such as naturalness, health and well-being, respect for man, the environment and nature, quality, and the concept of "unprocessed" (Cristini and Bellini, 2015). Moreover, Davies et al. (1995) highlighted that the interest in organics stems from reasons related to health and environmental protection, even if a low disposable income represents a limiting factor in their purchase. Demographic variables (i.e. age, education, income, etc...) also influence (in a positive or negative way) the purchase of organic products.

An interesting result was one of Haghner et al. (2007). They highlighted that there is a relationship between consumers of organic products and "nostalgic" consumers, who attribute to these products the ability to recall the past and old traditions.

From these considerations, arise the two hypotheses, studied in the following empirical work:

H1: Is there a relationship of mutual influence between the nostalgic feeling deriving from Vintage Marketing and the awareness of purchasing a sustainable food product?

H2: If such a relationship exists, what is its effect and intensity on the influence on Agri-food products?

3. Method

3.1 Research objectives

The current research has two aims. The first one is to find out the relationship between *Sustainability* (i.e. environmental, social and economic) and *Vintage Marketing* (and its related nostalgia effect) in the Italian Agri-food sector. The second one, directly linked to the first, aims to find out whether exists a correlation (and its intensity) between sustainability and nostalgia, analyzed both in general and in the Italian Agri-food sector.

On the basis of the previous literature review, a questionnaire was built in order to detect which attributes impact consumers at purchase time (such as price, quality, packaging, point of sale, taste, availability, saving, advertising, promotion, environment, and workers' protection).

From the analysis of these attributes will be possible to understand the nature of consumers' behaviour at food-purchasing time, and understand whether there exists Schindler's "nostalgic link" between consumers and Agri-food products. Consequently, it will be interesting to know whether, at the managerial level, retro marketing strategies are effective in selling food products in the Italian market.

As regards sustainability, this study investigated its knowledge level among consumers, whether they adopt sustainable actions and, particularly, if they adopt sustainable food consumption. In addition, it wanted to find out if exists an emotional association between the implementation of sustainable practices in food consumption and the return to the "good flavours of the past" and to the healthy habits these recall.

A further topic is organic products' purchasing orientation. More specifically, this study investigated whether consumers associate with organic products a higher quality, a lower level of chemical treatments for cultivation and conservation, or associate these products to an event or a memory of the past, making them more genuine.

Finally, this study analyzed the reasons that hinder the organic food products' purchase, such as high cost, lack of confidence in the organic supply chain, or lack of interest.

3.2 Questionnaire Development and Instrument

The data has been collected through a structured questionnaire, based on research objectives. To reach a significant sample in a short time, without geographical limits, the Google Form platform has been used. In particular, this investigation covered all Italian territory and it lasted approximately a month (from September to October 2019). The counted questionnaires were only those with complete answers.

The survey included 28 questions divided into three sections: *purchasing attributes of food and sustainability*, *vintage*, and *demography*. *Purchasing attributes of food and sustainability* section investigated the consumers' attention and knowledge-level about sustainability, their daily sustainable practices, its importance at purchasing time, and their food consumption. *Vintage* section analyzed the consumers' behaviour at the food-purchasing time in order to demonstrate Schindler's theory (i.e. nostalgia effect, its incidence at purchasing time, its link with organic and genuineness). Lastly, the *demography* section explored a few but essential demographic items such as gender, age, income, education, qualification, and job.

As regards items' measures, some questions provided a five-point Likert scale evaluation (where '1' and '5' signified a least and great orientation) while others included multiple-choice answers. Likert scale is a type of psychometric response scale used to measure responders' level of agreement, attitude, or opinion to a statement or question. It represents an important tool capable of measure respondents' attitudes by measuring the extent to which they agree or disagree with a particular topic (Preedy, 2010). The most common scales use five to seven items. In this work, authors decided to use the five-point one because it is easier to understand and it provides better distribution of data (Matell & Jacoby, 1972). It consists of five answer options with two extreme poles (low and high) and a neutral option in the middle. Multiple-choice answers, instead, are used to understand which factors have the greatest influence on scenarios involving consumer behaviour or demographic aspects (such as education, income, etc…). Only the "AGE" variable differs from the previous measurement, which required an open numerical response. Table 1 summarizes variables and their measurement methods.

Tab. 1: Measures

Measures	*Variables*
Five-point Likert scale evaluation	*InfoSust, SustPract, Pdt_COST, Pdt_AVAI, Pdt_QUAL, Pdt_PACK, Pdt_INGR, Pdt_TAST, Pdt_SAV, Pdt_ADV, Pdt_PROMO, Pdt_STORE, Pdt_ENVprot, Pdt_WORKprot, Pdt_OTH, PurcSUSTinfl, PurcENVprot, PurcVINT, VintEFCT, VintAUT,* and *VintSUST*
Multiple-choice answers	*PdtBIO, No_BIO, GENDER, QUALIF, OCCUP,* and *INCOME*
Open numerical answer	*AGE*

Source: our elaboration

3.3 Data and Sample

The online survey reached 450 people. Participants were 65% female and 35% male with an average age of 44 years old. Regarding education, most of the sample analyzed had a high school education (59%), followed by college or university with 34% and postgraduate with only 7%. As regards the profession, the majority of the sample was a worker (45%), followed by students (18%), self-employers (13%), and so on. The average monthly income was below Euro 1999,00. Therefore, it could be considered a well-stratified sample. Table 2 summarizes the information about the sample composition analyzed.

Tab. 2: Sample composition (in percentage, %)

Gender	Age (years)	Education	Profession	Monthly income (€)
Female, 65	18-25, 21	High school or below, 59	Student, 18	< 999, 41
Male, 35	26-40, 25	College or university, 34	Employed, 45	1.000-1.999, 38
	41-55, 34	Postgraduate, 7	Entrepreneur, 6	2.000-2.999, 14
	56-65, 16		Self-employed, 13	> 3.000, 7
	> 65, 4		Unemployed, 8	
			Retired, 10	

Source: our elaboration

3.3.1 Purchasing attributes of food and Sustainability

Regarding the *purchasing attributes of the food and sustainability* section, these variables varied from 1 to 5 according to a five-point Likert scale evaluation. A first analysis revealed that most of the respondents have a medium knowledge-level of sustainability (45%) and have a very good level of sustainable practices' adoption (such as attention to wastes, recycling, use of the bike instead of the car, etc...) (35%) (Table 3).

Furthermore, the analysis of the attributes *search* (i.e. price, appearance, colour), *experience* (i.e. freshness and taste), and *credence* (i.e. the type of animal breeding or feeding administered) stated that they influence the food purchasing process thus introducing an initial relationship between food and sustainability. Specifically, the attributes that had a medium-low relevance expressed as a cumulative percentage (i.e. with a value between 1 and 3) are related to advertising (96%), packaging (86%), point of sale (86%), worker protection (80%), availability (79%), environmental protection (76%) and price (70%). On the other hand, the attributes that achieved a score between 3 and 5, meaning a medium-high relevance expressed in terms of cumulative percentage, are those that refer to the quality (88%), the ingredients (79%), and the taste (83%). The attributes related to savings and promotions deserve different considerations. As regards savings, the sample indicated a fairly homogeneous frequency distribution around the values 2 (29%), 3 (33%), and 4 (20%). Moreover, in relation to promotions, the distribution of frequencies assumed an equally homogeneous trend around the values 1 (17%) and 4 (18%) and the values 2 (28%) and 3 (31%). These results show that there is both a share of consumers who consider the saving attribute of little relevance - and therefore pay attention to other types of attributes (for example, quality) - and there is a share of consumers for whom it assumes clearly higher importance. For the

promotions attribute, however, a separation of consumer preferences is also observed but, in this case, this separation is clearer than the previous one because for some it takes on discrete importance, for others, it has little relevance.

On that note, the study investigated whether there is a possible relationship between the purchasing of food and sustainability, analyzed both in general terms and with particular reference to environmental protection. As regards the generic relationship, it is observed that 42% of the sample declares to be quite influenced by sustainability at purchase time, 24% is fairly influenced and 13% is highly influenced, demonstrating a growing interest in purchasing food products geared toward sustainable consumption (only 6,4% of the sample are not affected at all) (Table 3).

This trend is also confirmed by the perspective of the attention to environmental sustainability (in this context, referring to the purchase of organic goods or from particular areas), which obtains higher percentage scores as attention increases.

In Table 3, the detailed results of the questions related to the first section.

Tab. 3: Purchasing attributes of food and sustainability (in percentage, %)

Likert's scale	Knowledge-level of sustainability	Sustainable practices	Sustainable influence in purchasing food products	Attention to environmental sustainability
1	4	2	6	8
2	19	11	15	14
3	45	32	42	28
4	25	35	24	31
5	7	20	13	19

Source: our elaboration

3.3.2 Vintage in Agri-food sector

Continuing, the study focused on the analysis of Vintage and its possible implications in the Agri-food sector. By analyzing the results, it was possible to detect the existence of the attraction towards food products that evoke the past in consumer's minds (for example, foods consumed during childhood and/or adolescence).

Table 4 shows the detailed results of the questions related to the second section of the questionnaire. More specifically, the second column of the table highlights a positive relationship between Agri-food products and issues relating to vintage because more than half of the sample is substantially influenced by vintage recall elements at the purchasing time (values from 4 to 5). The rest of the sample differs according to the influence level of past memories (i.e. no influence, little and medium influence).

With regard to the incidence of nostalgia effect at Agri-food products' purchasing time, its importance was partially confirmed by the percentage of subjects who declared a high incidence of nostalgia effects in their Agri-food purchases (33%, sum of values from 4 to 5), while the rest of the sample reported a medium (30%), low (26%) or absent (11%) incidence.

In addition, the present study analyzed the possible association between a food product characterized by a high psychological component (i.e. nostalgia for the foods consumed during infant or adolescence time) and the attribute of authenticity, expressed as a greater naturalness of the "Vintage" food product compared to a "non-Vintage" one. Results show that 54% (sum of values from 4 to 5) of respondents associate a greater genuineness to a nostalgic food product, while the rest of the sample identifies an intermediate (23%), low (13%), or absent (10%) relationship.

Another topic analyzed is whether there is a link between Vintage or "nostalgic" food products and sustainability from the consumers' point of view. In this study, respondents expressed a medium (41%), a discrete (21%) and a high (8%) positive opinion (while the remaining 30% have a low or absent consideration of these issues).

Tab. 4: Vintage (in percentage, %)

Likert's scale	Food products and nostalgia effect	Incidence of nostalgia effect at purchasing time	Vintage food and genuineness	Vintage food and sustainability
1	8	11	10	9
2	16	26	13	21
3	25	30	23	41
4	31	21	24	21
5	20	12	30	8

Source: our elaboration

A final question regarded the consumers' idea of organic products. The study revealed that: 72% of the subjects consider them less chemically treated and less processed; following, 20% think they are healthier than non-organic food products; 6% associate them with a vintage product that expresses the "return to good food of the past" and only 1% believe that they are tastier. Furthermore, as regards the reasons why organic food products are not purchased, respondents identified the following: excessive cost (66%); lack of confidence in organic products, both in terms of production and regulation (24%); and the disinterest in this category of food (9%).

The analysis of the descriptive statistics enables some reflections. The female gender is more attentive and predisposed towards sustainability and vintage in the Agri-food sector, compared to the male gender. Moreover, there seems to be growing attention of consumers towards responsible use and consumption of food, which is associated with a positive relationship with the "nostalgia effect", since consumers connect the attribute of authenticity to the "vintage food product". Consequently, it generates a meeting point between sustainability and vintage.

Furthermore, if, on one hand, authenticity is a key element in being able to connect the two themes, on the other hand, other attributes seem to influence the purchase of foodstuffs such as quality, ingredients, and taste. Other elements (such as advertising, packaging, store, worker protection, availability, protection of the environment, and price) seem to have little influence on food purchase decisions. On the contrary, promotions and savings have a medium role in influencing purchases.

Finally, as regards organic food products, it is possible to affirm that the majority of consumers understand and appreciate these products. However, the biggest obstacle organic has to overcome is its price, which is still considered too high for consumers.

4. Results

4.1 Description of model and variables

In order to analyze the information obtained through questionnaires, the proposed groups of variables were studied through exploratory factor analyses. Table 5 summarizes the description of the variables used in the multivariate analysis.

Tab. 5: Variable description table

Name	*Description*
Variables related to sustainability	
InfoSust	Expresses the degree of information perceived by the respondent about environmental, social and economic sustainability.
SustPract	Indicates the respondent's implementation of sustainable consumption practices.
PurcSUSTinfl	Aims to understand whether, at purchasing time, the consumer pays attention to sustainability aspects.
PurcENVprot	Indicates how much a consumer pays attention to environmental protection in purchases decisions making.
Variables that influence food purchasing	
Pdt_COST	Refers to the price of food products.
Pdt_AVAI	Refers to the availability of the product.
Pdt_QUAL	Concerns the quality of food.
Pdt_PACK	Refers to the packaging.
Pdt_INGR	Refers to the ingredients.
Pdt_TAST	Refers to the taste.
Pdt_SAV	Refers to saving.
Pdt_ADV	Refers to advertising.
Pdt_PROMO	Refers to the presence of promotions in stores.
Pdt_STORE	Refers to the store.
Pdt_ENVprot	Refers to the attention, at purchasing time, on products designed and produced with respect for the environment.
Pdt_WORKprot	Refers to the attention, at purchasing time, on products designed and produced with respect for workers protection.
Pdt_OTH	Refers to the presence of additional attributes (different from the previous ones) that influence consumers at purchasing time.
Variables related to Vintage Marketing	
PurcVINT	Indicates whether the consumer is attracted to food products that remind of the past.
VintEFCT	Aims to quantify the incidence of past memories in food purchasing choices.
VintAUT	Refers to consumers' association between the concept of "food of the past" and the authenticity of the product itself.
VintSUST	Indicates and quantifies the existence of a relationship between the concept of sustainability and vintage food products.
Variables related to organic Agri-food sector	
PdtBIO	Refers to organic food products and, in particular, to the idea that consumers have of these.
No_BIO	Refers to the reasons why consumers do not buy and consume organic food products.
Demographic variables	
GENDER	Refers to sexual gender.
EDUC	Refers to educational qualification.
OCCUP	Refers to the occupation.
AGE	Refers to age.
INCOME	Refers to income

Source: our elaboration

4.2 Factor analysis: Consumers' purchase intention

Once the variables were defined, the first exploratory factor analysis was carried out using variables relating to the attributes that influence the *purchase intention of consumers*. We run the twelve variables influencing food purchasing and analyzed the correlations among them. Table 6 shows three main degrees of correlation:

- a *high* correlation between the price of food products and savings (0.778), the quality of the food products and its ingredients (0.714) and its taste (0.736), and between the attention on environment and workers protection during purchasing (0.799);
- a *medium* correlation among the price of food products and its availability (0.547), and the presence of promotions in store (0.572); the taste of the products and their ingredients (0.613), availability (0.521), and price (0.503); savings and the quality of food (0.503), its taste (0.503), and promotions in store (0.596); finally, between both environment and workers protection and quality (0.595 and 0.546), and ingredients (0.638 and 0.580);

- a *good* correlation among the other variables.

All variables are positively correlated to each other, confirming the importance of all of the attributes analyzed when it comes to purchasing.

Tab. 6: Correlation Matrix

		Pdt_COST	Pdt_AVAI	Pdt_QUAL	Pdt_PACK	Pdt_INGR	Pdt_TAST	Pdt_SAV	Pdt_ADV	Pdt_PROMO	Pdt_STORE	Pdt_ENVprot	Pdt_WORKprot
Correlation	Pdt_COST	1,000	,547	,492	,267	,314	,503	,778	,338	,572	,253	,299	,252
	Pdt_AVAI	,547	1,000	,490	,362	,429	,521	,527	,412	,406	,480	,443	,398
	Pdt_QUAL	,492	,490	1,000	,443	,714	,736	,503	,371	,408	,317	,595	,546
	Pdt_PACK	,267	,362	,443	1,000	,480	,424	,306	,386	,293	,410	,493	,402
	Pdt_INGR	,314	,429	,714	,480	1,000	,613	,338	,315	,280	,319	,638	,580
	Pdt_TAST	,503	,521	,736	,424	,613	1,000	,503	,336	,455	,370	,499	,488
	Pdt_SAV	,778	,527	,503	,306	,338	,503	1,000	,396	,596	,325	,352	,293
	Pdt_ADV	,338	,412	,371	,386	,315	,336	,396	1,000	,478	,433	,298	,278
	Pdt_PROMO	,572	,406	,408	,293	,280	,455	,596	,478	1,000	,399	,240	,180
	Pdt_STORE	,253	,480	,317	,410	,319	,370	,325	,433	,399	1,000	,361	,351
	Pdt_ENVprot	,299	,443	,595	,493	,638	,499	,352	,298	,240	,361	1,000	,799
	Pdt_WORKprot	,252	,398	,546	,402	,580	,488	,293	,278	,180	,351	,799	1,000

Source: our elaboration with IBM SPSS Statistics

In order to perform a robust analysis, two tests were performed to understand whether the sample was adequate for the development of the model: the first one is the *Kaiser-Meyer-Olkin Measurement* (*KMO Test*); the second is the *Test of Sphericity* by Bartlett. Both measures were significant (Table 7) as Kaiser suggests that KMO Test values above 0,7 are to be considered satisfactory, so we proceeded with the elaboration of the factor analysis.

Tab. 7: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,881
Bartlett's Test of Sphericity	Approx. Chi-Square	3060,707
	df	66
	Sig.	,000

Source: our elaboration with IBM SPSS Statistics

The next step was the study of *Communalities* (Table 8) which indicates how much the variance of each considered variable is explained by common factors. It is a measure that varies between 0 (common factors explain nothing of the variability of the considered variable) and 1 (all variability is explained by common factors). Since in the final solution a physiological loss of information must be considered, the final communalities are less than 1 but greater than 0.40 so the extracted values are significant.

Tab. 8: Communalities

	Initial	Extraction
Pdt_COST	1,000	,821
Pdt_AVAI	1,000	,555
Pdt_QUAL	1,000	,761
Pdt_PACK	1,000	,545
Pdt_INGR	1,000	,720
Pdt_TAST	1,000	,681
Pdt_SAV	1,000	,788
Pdt_ADV	1,000	,633
Pdt_PROMO	1,000	,675
Pdt_STORE	1,000	,703
Pdt_ENVprot	1,000	,775
Pdt_WORKprot	1,000	,730

Extraction Method: Principal Component Analysis.

Source: our elaboration with IBM SPSS Statistics

Furthermore, in Table 9, the *Total Variance Explained* shows that the factors to be extracted are three because, at the level of the cumulative percentage, they are the ones capable of explaining more than half of the total variance of the phenomenon under study (69,9%).

Tab. 9: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,789	48,239	48,239	5,789	48,239	48,239	3,477	28,977	28,977
2	1,580	13,165	61,404	1,580	13,165	61,404	2,937	24,476	53,452
3	1,018	8,486	69,890	1,018	8,486	69,890	1,973	16,438	69,890
4	,673	5,607	75,497						
5	,584	4,864	80,361						
6	,563	4,693	85,054						
7	,499	4,161	89,216						
8	,343	2,856	92,071						
9	,332	2,764	94,835						
10	,226	1,883	96,718						
11	,214	1,780	98,498						
12	,180	1,502	100,000						

Extraction Method: Principal Component Analysis.

Source: our elaboration with IBM SPSS Statistics

The *Rotated Component Matrix* below (Table 10) is useful for interpreting and understanding the latent factors among the analyzed variables.

Tab. 10: Rotated Component Matrix

	Component		
	1	2	3
Pdt_ENVprot	,843		
Pdt_WORKprot	,829		
Pdt_INGR	,808		
Pdt_QUAL	,727	,470	
Pdt_TAST	,623	,522	
Pdt_COST		,884	
Pdt_SAV		,846	
Pdt_PROMO		,704	,421
Pdt_AVAI	,363	,516	,396
Pdt_STORE			,798
Pdt_ADV		,313	,721
Pdt_PACK	,492		,544

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: our elaboration with IBM SPSS Statistics

As previously highlighted, the components extracted from the analysis are three. The first includes the variables *Pdt_ENVprot*, *Pdt_WORKprot*, *Pdt_INGR*, *Pdt_QUAL*, and *Pdt_TAST*, which identifies the component that combines sustainability with product quality (Sustainability and Quality). The second takes as reference the variables *Pdt_COST*, *Pdt_SAV*, *Pdt_PROMO*, and *Pdt_AVAI* and is defined as the economic component that considers the relevance of the price, savings, and promotions, which is associated with the importance of availability (Price and Availability). The third component is detected by the variables *Pdt_STORE*, *Pdt_ADV*, and *Pdt_PACK*, which relates to marketing considering the influence of the store type, advertising, and packaging (Marketing).

4.3 Factor analysis: Sustainability and "nostalgia effect" in Agri-food sector

Subsequently, it was examined the presence of latent relationships and factors between the concept of sustainability and the "*nostalgia effect*" in the Agri-food. The *Correlation Matrix* (Table 11) shows, this time, different results:

- a *negative* correlation among the link "*food of the past – the authenticity of the product itself*" and the degree of perceived information about food's sustainability (0.015), and consumers' sustainable practices (-0.005), and between the attraction versus food products that remind of the past and the age variable (-0.086). These results show negative – but close to zero – correlations among the abovementioned variables;
- a *medium* correlation between whether, at food purchasing time, consumers pay attention to sustainability aspects both with the respondents' implementation of sustainable consumption practices (0.460), and the attention on products designed and produced with respect for the environment (0.608). Also, the existence of a relationship between the concept of sustainability and vintage with the incidence of past memories in food purchasing choices is mediumly correlated to each other (0.468).
- a *high* correlation between the incidence of past memories in food purchasing choices and whether consumers are attracted to food products that remind of the past (0.748).
- a *lower* correlation among the other variables.

Tab. 11: Correlation Matrix

		InfoSust	SustPract	PurcSUSTinfl	PurcENVprot	PurcVINT	VintEFCT	VintAUT	VintSUST	AGE
Correlation	InfoSust	1,000	,351	,359	,293	,060	,061	-,015	,051	,073
	SustPract	,351	1,000	,460	,346	,018	,057	-,005	,108	,165
	PurcSUSTinfl	,359	,460	1,000	,608	,110	,177	,049	,239	,196
	PurcENVprot	,293	,346	,608	1,000	,105	,158	,099	,203	,158
	PurcVINT	,060	,018	,110	,105	1,000	,748	,272	,396	-,086
	VintEFCT	,061	,057	,177	,158	,748	1,000	,319	,468	,006
	VintAUT	-,015	-,005	,049	,099	,272	,319	1,000	,408	,204
	VintSUST	,051	,108	,239	,203	,396	,468	,408	1,000	,075
	AGE	,073	,165	,196	,158	-,086	,006	,204	,075	1,000

Source: our elaboration with IBM SPSS Statistics

As the previous Factor Analysis, at first, the adequacy of the sampling was verified through the KMO and the Bartlett's Test, both significant (Table 12).

Tab. 12: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,698
Bartlett's Test of Sphericity	Approx. Chi-Square	1067,617
	df	36
	Sig.	,000

Source: our elaboration with IBM SPSS Statistics

Following, the analysis of *Communalities* has shown that the common factors manage to explain a relevant part of the total variance of the extracted variables, since the final communalities assume values between 0.4 and 1 (Table 13).

Tab. 13: Communalities

	Initial	Extraction
InfoSust	1,000	,461
SustPract	1,000	,531
PurcSUSTinfl	1,000	,703
PurcENVprot	1,000	,582
PurcVINT	1,000	,788
VintEFCT	1,000	,790
VintAUT	1,000	,649
VintSUST	1,000	,566
AGE	1,000	,718

Extraction Method: Principal Component Analysis.

Source: our elaboration with IBM SPSS Statistics

The analysis of the *Total Variance Explained*, also in this case, shows a satisfactory cumulative percentage of explained variance (64,30%), therefore the factors capable of explaining more than half of the total variance are three (Table 14).

Tab. 14: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,727	30,302	30,302	2,727	30,302	30,302	2,292	25,467	25,467
2	1,934	21,494	51,796	1,934	21,494	51,796	2,245	24,946	50,414
3	1,125	12,503	64,299	1,125	12,503	64,299	1,250	13,886	64,299
4	,756	8,397	72,697						
5	,693	7,700	80,396						
6	,633	7,034	87,431						
7	,527	5,857	93,288						
8	,363	4,028	97,315						
9	,242	2,685	100,000						

Extraction Method: Principal Component Analysis.

Source: our elaboration with IBM SPSS Statistics

Finally, thanks to the examination of the *Rotated Component Matrix* (Table 15), the variables that constitute each factor and the meaning of the latent components were defined. Specifically, the first component is the resultant of the variables *VintEFCT*, *PurcVINT*, and *VintSUST* (i.e. the attraction towards food products that remind of the past, the incidence of the memory of past in food purchasing choices, and the existence of a relationship between the concept of sustainability and vintage food products). Therefore, the first component demonstrates the existence of a relationship between the value and importance of vintage in the food sector and sustainability (Vintage and Sustainability).

The second rotated component contains the *PurcSUSTinfl*, *PurcENVprot*, *SustPract*, and *InfoSust* variables, which relate to the growing influence that sustainability has in Agri-food products purchasing and, in particular, to the increasingly substantial role of knowledge and implementation of sustainable practices (Knowledge and Influence of Sustainability). The third component incorporates the *AGE* and *VintAUT* variables. It confirms what has already been detected with the first component, however highlighting a totally different aspect related to the age of the sample. In this sense, the positive relationship between past purchasing experiences, the perception of authenticity of vintage Agri-food products, and sustainability are demonstrated. It is interesting to emphasize the consideration that past purchases, with a strong nostalgic component, not only influence future purchases but manage to significantly evoke the feeling of a healthy, genuine and sustainable product (Past experience).

Tab. 15: Rotated Component Matrix

	Component		
	1	2	3
VintEFCT	,884		
PurcVINT	,875		
VintSUST	,672		,311
PurcSUSTinfl		,816	
PurcENVprot		,734	
SustPract		,725	
InfoSust		,665	
AGE			,816
VintAUT	,487		,634

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Source: our elaboration with IBM SPSS Statistics

5. Discussion and conclusion

The Factor Analysis results confirmed the preliminary considerations proposed in the descriptive analysis of the questionnaire: both the existence of the growing attention of consumers towards a more responsible use and consumption of food products, as well as a positive relationship between the knowledge of sustainability and the nostalgic sentiment. Therefore, even in this first explorative stage, the analyzed sample links the attribute of authenticity to "vintage food products", thus generating a meeting point between sustainability and vintage.

In particular, the first of the latent components demonstrate the existence of a relationship between the greater value that consumers give to the vintage food product and the consequent importance that it has in influencing food purchases and sustainability.

In addition, the role of knowledge of environmental, social, and economic sustainability is fundamental in the dissemination of best practices (in terms of sustainable consumption), both for businesses and for consumers. In fact, by exploiting the greater value perceived by customers towards vintage food products, companies can maximize their revenues by changing their offer toward a more authentic and sustainable one. It should also be noted that past purchases, with a strong nostalgic component, not only influence future purchases but manage to significantly evoke the feeling of a healthy, genuine, and sustainable product. Furthermore, the relationship between the vintage food product and the perception of the importance of sustainability by consumers could push Agri-food companies to modify their production processes in a more sustainable perspective, thus bringing greater quality to the corporate image.

However, if, in one hand, authenticity is a key element in being able to connect the two themes, on the other hand, there are also other attributes that influence the food purchase which is linked to vintage and sustainable food products (thus they shall be taken into account).

As for economic attributes (such as price, savings, and promotions), it is highlighted that there is an association with availability. Consequently, consumers tend to buy in-store where he knows he has the chance of finding sustainable and convenient food products (such as large-scale distribution).

A further managerial consideration regards the relationship that binds the point of sale, advertising, and packaging of Agri-food products: in this sense, it is important to set up an advertising strategy that includes both the enhancement of the product (packaging) and the creation of an attractive store for consumers.

Finally, as regards organic foods, most consumers have understood its production and quality (related to a healthier product). However, the relationship between organic and vintage in the Agri-food sector appears almost non-existent. Nonetheless, the main obstacle to the diffusion of these products is the price, which is still too high for consumers. So, in order to facilitate the first

approach towards the organic food supply chain, it would be more useful to use healthy components as a driver of marketing campaigns, promoting information on the health benefits related to the consumption of organic food.

In conclusion, the present study aimed to give a concrete answer to the research questions proposed:

H1: Is there a relationship of mutual influence between the nostalgic feeling deriving from Vintage Marketing and the awareness of purchasing a sustainable food product?

H2: If such a relationship exists, what is its effect and intensity on the influence on Agri-food products?

Through the dissemination of the online questionnaire and the processing of its data with the IBM SPSS Statistics software, it was possible to give a (positive) answer to the previous research questions. In fact, exploratory factor analyses highlighted that the relationship between nostalgic sentiment and sustainable food product exists, it is positive and consumers are aware of it.

In addition, Vintage Marketing can be used not only in influencing future purchases related to the Agri-food sector, but also in management as a starting point to align the interests of the various stakeholders (such as producers, consumers, institutions) in order to achieve the Sustainable Development Goals (SDG).

Data collection and analyses were limited from two fronts: first, it related only to Italian consumers, and second, the sample is not large in number. These limitations are the direct consequence of the novelty of the covered topic in the academic field. In fact, studies exploring both these themes are limited, so the present study can be considered as exploratory. Through the first sample of 450 Italian respondents, we started investigating the topic in order to better understand how to address and shape the study before move on to a wider audience in the future. Therefore, further research should include a bigger dataset, collected from a wider and diversified sample, from different countries and regions. This study will provide a preliminary understanding of the research area. In particular, through its results, the authors expect to find out a new perspective between the topics, which will be fundamental to convey companies toward more consumer-oriented strategies. This way of doing will benefit both companies and consumers: companies because they will reach the desired sales level and increase their reputation, consumers because they will find and purchase products in line with their desires.

References

ANDERSEN E.S., PHILIPSEN K. (1998), "The evolution of credence goods in customer markets: exchanging "pigs in pokes"", *DRUID Winter Seminar, Middelfart*, vol. 10.

BAGDONIS J.M., HINRICHS C.C., SCHAFFT K.A. (2009), "The emergence and framing of farm-to-school initiatives: civic engagement, health and local agriculture", *Agriculture and Human Values*, vol. 26, n. 1-2, pp. 107-119.

BOYM S. (2008), *The future of nostalgia*, Basic books.

BRAUN K.A., ELLIS R., LOFTUS E.F. (2002), "Make my memory: How advertising can change our memories of the past", *Psychology & Marketing*, vol. 19 n. 1, pp. 1-23.

CAROLAN M. (2018), *The Real Cost of Cheap Food*, Routledge.

CRISTINI G., BELLINI S. (2015), "Le dimensioni fiduciarie nell'acquisto dei prodotti biologici: un'analisi esplorativa", *Micro & Macro Marketing*, vol. 24, n. 1, pp. 21-40.

DAVIES A., TITTERINGTON A.J., COCHRANE C. (1995), "Who buys organic food? A profile of the purchasers of organic food in Northern Ireland", *British Food Journal*, vol. 97, n. 10, pp. 17-23.

DAVIS F. (1979), *Yearning for yesterday: A sociology of nostalgia*, Free Press.

DELIND L.B. (2002), "Place, work, and civic agriculture: Common fields for cultivation", *Agriculture and Human values*, vol. 19, n. 3, pp. 217-224.

DESHMUKH A.K., MOHAN A. (2015), "Exploring consumer preferred food attributes in India". *Business review (gbr)*, vol. 54.

GALLUCCI F. (2019), *Neuromarketing*, Egea, Seconda edizione, pp. 10-20, 86-98.

GOULDING C. (2001), "Romancing the past: heritage visiting and the nostalgic consumer", *Psychology & Marketing*, vol. 18, n. 6, pp. 565-592.

GRANT J. (2008), "Green marketing", *Strategic direction*. vol. 24, n. 6, pp. 25-27.

GRANT J., CARÙ A., PEROGGI M., DE MARINIS A. (2009), *Green Marketing: Il Manifesto*, Francesco Brioschi Editore, pp. 7-14, 98-111, 266-272.
HOLAK S.L., HAVLENA W.J. (1992), "Nostalgia: An exploratory study of themes and emotions in the nostalgic experience", *ACR North American Advances*.
HOLAK S.L., HAVLENA W.J. (1998), "Feelings, fantasies, and memories: An examination of the emotional components of nostalgia", *Journal of Business Research*, vol. 42 n. 3, pp. 217-226.
HOLBROOK M.B. (2003), "Nostalgic bonding: exploring the role of nostalgia in the consumption experience", *Journal of Consumer Behaviour*, vol. 3, n. 2, Henry Stewart Publications 1479-1838, pp. 107–127.
HOLBROOK M.B., SCHINDLER R.M. (1989), "Some Exploratory Findings on the Development of Musical Tastes", *Journal of Consumer Research*, vol. 16, n. 1, pp. 119-24.
HOLBROOK M.B., SCHINDLER R.M. (1991), "Echoes of the Dear Departed Past: Some Work in Progress On Nostalgia", *Advances in Consumer Research*, vol. 18, n. 1, pp. 330-333.
LINDSTROM M. (2013), *Neuromarketing, Attività cerebrale e comportamenti d'acquisto*, Apogeo Education, pp. 133-147.
MATELL M.S., JACOBY J. (1972), "Is there an optimal number of alternatives for Likert-scale items? Effects of testing time and scale properties", *Journal of Applied Psychology*, vol. 56, n. 6, p. 506.
MEO C. (2019), *Food Marketing2: Il food conquista la città*, HOEPLI EDITORE.
MIGLIORE G., SCHIFANI G., GUCCIONE G.D., CEMBALO L. (2014), "Food community networks as leverage for social embeddedness", *Journal of Agricultural and Environmental Ethics*, vol. 27, n. 4, pp. 549-567.
MORGAN K., MARSDEN T., MURDOCH J. (2009), *Worlds of Food: Place, Power, and Provenance in the Food Chain*, Oxford University Press.
MORRONE D. (2012), "The influence of Sustainable Sevelopment on Marketing Theory", *Megatrend Review*, vol. 9, n. 4.
MUEHLING D.D., SPROTT D.E., SPROTT D.E. (2004), "The power of reflection: An empirical examination of nostalgia advertising effects", *Journal of Advertising*, vol. 33 n. 3, pp. 25-35.
OPHUIS P.A.O., VAN TRIJP H.C. (1995), "Perceived quality: A market driven and consumer-oriented approach", *Food quality and Preference*, vol. 6, n. 3, pp. 177-183.
PORTER M.E., KRAMER M.R. (2007), "Strategia e società. Il punto d'incontro tra il vantaggio competitivo e la Corporate Social Responsibility", *Harvard Business Review Italia*, vol. 14, n. 1/2, pp. 1-18.
PREEDY V.R. (2010). *Handbook of disease burdens and quality of life measures*, R. R. Watson (Ed.). New York: Springer, pp. 4271-4272.
REISENWITZ T.H., IYER R., CUTLER B. (2004), "Nostalgia Advertising and the Influence of Nostalgia Proneness", *Marketing Management Journal*, vol. 14 n. 2.
SAGE C. (2015), "Food and Sustainable Development: How should we feed the world?". *Routledge International Handbook of Sustainable Development, Abingdon, UK, Routledge*.
SARDAR Z. (2007), "Beyond the troubled relationship", *Nature*, vol. 448, n. 7150, pp. 131-133.
SCHINDLER R.M., HOLBROOK M.B. (2003), "Nostalgia for early experience as a determinant of consumer preferences", *Psychology & Marketing*, vol. 20, n. 4, pp. 275-302.
SEUNEKE P., LANS T., WISKERKE J.S. (2013), "Moving beyond entrepreneurial skills: Key factors driving entrepreneurial learning in multifunctional agriculture", *Journal of Rural Studies*, vol. 32, pp. 208-219.
WILDSCHUT, T., SEDIKIDES, C., ARNDT, J., & ROUTLEDGE, C. (2006), "Nostalgia: content, triggers, functions", *Journal of personality and social psychology*, vol. 91, n. 5, p. 975.
ZANOLI R., NASPETTI S. (2002), "Consumer motivations in the purchase of organic food", *British food journal*.

Websites

http://www.treccani.it/

The attachment to a social purpose as leverage for change: the case of the first Certified B Corp in Spain

ALFONSO VARGAS-SÁNCHEZ*

Abstract

Objectives. *To present the case of two young rural entrepreneurs who gave birth to a company known today as Alma Natura Social S.L., certified in 2013 as the first B Corporation in Spain, an international movement aimed to transform the way of doing business and the metric of corporate success, making economic and social returns compatible.*

Methodology. *This case study has been elaborated based on secondary data, semi-structured interviews with the entrepreneurs and direct observation.*

Findings. *The company defines itself as a social enterprise that acts as a change-maker in rural areas. Since decisions are mainly made based on purpose, the creation of strategic alliances, with both public and private partners, becomes essential for the reactivation of rural life via empowering people who live in these environments. This point leads to the hybrid character of its business model and relates to its dual mission.*

Research limits. *Lack of generalization of the findings gathered from a single case study.*

Practical implications. *The abovementioned entrepreneurs have been able to make their company grow, earn their living without abandoning their roots, and help many others all over Spain consistently with a purpose that has proven to provide the necessary focus and motivation to create a significant social impact: set population in the rural areas through the creation of opportunities and more favourable living conditions.*

Originality of the study. *To the best of our knowledge, this is the first case study written about a certified B Corporation in Spain.*

Key words: *B Corp; Corporate Social Responsibility; Sustainable Development Goals; Rural Development; Purpose; Entrepreneurship*

* Full Professor of Strategic Management - University of Huelva (Spain)
e-mail: vargas@uhu.es

ISBN 97888943937-3-6
DOI 10.7433/SRECP.FP.2020.01

1. Introduction

A small and peripheral company, known as Alma Natura, that in 2018 was awarded in Spain for its contribution to the achievement of the United Nations' Sustainable Development Goal number 11 (sustainable cities and communities), and that has been guided by the purpose of enhancing rural life and prevent depopulation in rural areas long before the Sustainable Development Goals were established, might be a source of inspiration through the investigation of the 'pains' and 'gains' found in its way. But before going into its evolution and dilemmas, the general context of this case study is presented first.

In terms of strategic planning, the concept of purpose goes beyond others (vision, mission and values) used to describe the company's corporate identity. As explained by Kenny (2014), purpose differs from other labels that try to provide organizational direction because, quoting Greg Ellis, former CEO and managing director of REA Group: 'This is what we're doing for someone else'. Thus, the main difference resides in its motivational strength, 'because it connects with the heart as well as the head'.

Additionally, in the 21st century, it is increasingly evident that, as Kjaer (2015) pointed out with regard to lifestyle choices, the purpose has an increasingly important role in the transition towards responsible consumption and a more sustainable economy. In this regard, rural communities, with their natural and cultural heritage, are suffering a sharp decline as a result of the rapid process of urbanisation throughout the world. This fact limits the opportunities for those still living in these communities to access basic services, such as health and education, as well as fundamental resources such as new technologies, by restricting their personal development and, professionally, their ways to earn a living. The dilemma for them is, therefore, if resist or abandon, which has caused alarm and even reached the United Nations' 2030 Agenda.

Certainly, rural development issues are closely connected with the UN's 2030 Agenda for sustainable development. More specifically, some of its Sustainable Development Goals (SDGs) refer to the problems of depopulation of rural areas, the progressive ageing of these communities, the increase in the number of forest fires with their corresponding environmental damage (loss of forest and capacity to offset the carbon footprint), etc.

According to Archondo *et al.* (2018), 'Spain presents a more advanced process of urbanisation than the average in Europe since urban areas occupy 23% of the national territory, representing more than 60% of the population and employment, which produce nearly 70% of the GDP. Thus, Spain is characterised as being a country with a relatively concentrated population in large metropolitan areas, unlike other countries where the population distribution is more homogeneous across the territory'. At the same time, small towns are losing people every day. This was the start of the case we have here: the story of two young rural entrepreneurs who gave birth to a company known today as 'Alma Natura Social, S.L.', certified in 2013 as the first Spanish B Corporation, becoming part of a booming international movement that seeks to transform the way of doing business and corporate success metrics, making economic performance compatible with social performance.

On the basis of their attachment to their small hometown (Arroyomolinos de León, located in a remote part of the province of Huelva, in the southwest of Spain, and with around 1,000 inhabitants), the concern shared by the future of rural areas, and their willingness to do something to support their sustainable development, they have been able to expand their business, earn a living without leaving their roots, and help many others across Spain in harmony with a purpose that has provided the focus and motivation needed to create a significant social impact: help to ensure a population in rural areas by creating opportunities and better living conditions.

Alma Natura is defined as 'a social enterprise that designs public and private projects for rural communities. We build ideas that cover needs, where firms live alongside people. The team creates new ideas that cover the social needs of rural areas'[1]. In general, promoters of social enterprises

[1] RedCreActiva, http://www.redcreactiva.org/directorio/alma-natura (26-02-2019).

believe profits and social good can be produced in tandem and wish to form organizations that will pursue this dual mission (Reiser, 2011), and this case is an example of this belief.

Its activities are currently organised across four areas of intervention (employment, education, health and technology), in which they design transformative learning experiences, that is, with the potential to transform people, and therefore the rural environments in which they live. As a certified B Corporation, their impact has earned them one of the highest ratings among this group of companies worldwide (specific details will be provided below).

To play the role of an agent of change in rural areas, intrinsic to its purpose, the articulation of alliances with public and private partners has been essential in its strategy, aimed at reviving rural life by empowering the people living in these environments. This aspect is reflected in the hybrid character of its business model, close to what is known in the literature as the Third Sector or Social Economy Sector (Vargas-Sánchez, 1998).

As a company with a clear sense of purpose, pursued even obsessively, the evolution of Alma Natura will be analysed, since its inception in 1997 as an Association (a non-profit formula deemed unsustainable due to its total dependence on public subsidies) to its current legal form as a private company, with new projects, but also with challenges, as the limit to its own growth. Although Parker *et al.* (2019) identified in North American certified B Corporations, over the period 2011–2014, a short-term growth slowdown arising from that private certification, even more pronounced for the smallest and youngest firms, Alma Natura hasn't experienced this impact. In fact, managing its dual mission and keeping the company under control has become a concern, which has led to consider the self-limitation of growth.

To frame this case, we will proceed to make some references to three aspects surrounding it: firstly, the SDGs that comprise the United Nations' 2030 Agenda; secondly, the concept of 'B Corp'; and finally, the connection between B Corporations and sustainability is explored.

2. Theoretical background

2.1 The United Nations' 2030 Agenda for Sustainable Development and its 17 goals: their relationship with rural development

Following the Millennium Development Goals for the 2000-2015 period, the United Nations launched the 2030 Agenda for Sustainable Development, with 17 new goals, which, from 1 January 2016, aim to universally align individual and collective efforts.

In that Agenda, there are several references to rural environment/development set out in the statements, key data and targets of these SDGs. Thus, goal 11 (sustainable cities and communities) has the following target (among others): 'Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning' (11.A). As we will see, the social purpose of Alma Natura and its achievements in relation to it are aligned with this SDG, under the premise that the depopulation of rural areas is a problem that affects society as a whole.

The concern to achieve a sustainable world also reaches business organisations, which try to gain social legitimacy by using their strategies to respond to this priority, widely established at the institutional level in a context where citizens are increasingly aware and demanding with regard to business behaviour. The coercive, normative and mimetic mechanisms that institutional theory (neo-institutionalism) gives us to approach organisational change (Di Maggio and Powell, 1983) are very useful for understanding these business movements in favour of more sustainable behaviours.

These movements, in addition to trying to tune in to increasingly rooted values in society, seek a differentiating effect that strengthens the competitive position of those companies that are more decisively committed to incorporating sustainability criteria (economic, social and ecological) into their strategies. So that this differentiation is perceived to the greatest possible extent, the appearance of labels or certifications has been one of the tools used, not only to gain visibility but

also as a guarantee to customers or consumers. It is from this perspective that we will now tackle the so-called 'B Corporations'.

2.2 The B Corporation

In the current market economy, directors all over the world are questioning whether corporations should exist solely to maximize shareholder profit. Indeed, as Mickels (2009) argues, many corporate directors no longer abide by Milton Friedman's famous declaration that a corporation's only social responsibility is to provide a profit for its owners. Thus, these days, companies must decide whether they are in business just to make money, or to change people's lives.

The strength of private corporations as agents of change for addressing the economic, social and environmental problems affecting our planet is potentially enormous, and increasingly aware citizens demand more decisive action from them in this regard, which impacts on their reputation. In this vein, Corporate Social Responsibility (CSR) is an area that has been gaining momentum, to the point that it is now at the strategic level in these organisations.

In reality, it is increasingly clear that taking the path of socially responsible behaviour is no longer optional. In the words of Lorna Davis (CEO of Danone Wave), 'In ten years, the idea that a company is only concerned about profits will be seen as out of fashion and irresponsible' (Roots for Sustainability, 2018, pp. 3-4). The consumer increasingly embraces companies that run on the basis of an ethical and sustainability commitment, in the same way that attracting and retaining talent is linked more and more to the ability to incorporate a deeper meaning into work.

In this line, 'B-Corps are a growing group of social enterprises with a high level of commitment to maintaining a balance between the profit motive and corporate social responsibility' (Chen and Kelly, 2015), which is considered implicit in their business models. They are therefore characterised by combining economic and social returns within a community of companies that compete to be the best for the planet. As pointed out by Pablo Sánchez, a B Corp country partner in Spain, these are companies that prove that 'the stronger and more authentic their social purpose, the better their capacity to generate a competitive advantage'[2].

This movement, in which companies are a tool for change and profits are considered a means to achieve social ends (Stubbs, 2017), began in 2006 when three friends left their careers in the business world to create an organisation dedicated to supporting companies driven by a purpose of common good (generating value for all stakeholders, not just for shareholders), that is, to protecting and improving their positive impact on society over time. A year later (2007), the first B Corps (19) were certified. The current figures for the number of companies, industries, countries (frequently updated) can be checked at https://bcorporation.net/. In spite that some early movers have chosen to de-certify or not re-certify, this pro-social business community is certainly vast (heterogeneous over space and time of certification), with global figures showing that it has grown over the years.

In summary, this is a movement aimed to contribute to solving social and environmental problems through the action of companies that not only pursue economic ends but also achieve high (and verified) levels of social and environmental performance, with public transparency and a commitment to the generation of a positive impact on their communities. In this sense, Stubbs (2017) refers to it as sustainable entrepreneurship; and Moroz *et al.* (2018) as a movement that has already significantly transformed entrepreneurial practice.

Consistent with a way of doing business aimed around creating a space of balance between all stakeholders, the B Corp paradigm transforms the metrics for measuring success. Its metrics, the 'B Impact Assessment' (carried out by the B Lab), is focused on five areas of impact: governance, workers, community, the environment and customers.

After completing the evaluation, obtaining certification as a B Corp requires a minimum score of 80/200. Furthermore, the company bylaws must be amended to require the consideration of all

[2] Source: https://diarioresponsable.com/noticias/25265-empresas-bcorp-espana (26-02-2019).

stakeholders, and the so-called 'Declaration of Interdependence' must be signed, which includes the core values of this type of company as a force for good (this declaration can be found at https://bcorporation.net/about-b-corps). Qualifying entities can use the B Corp label to market themselves to consumers, investors, and others (Reiser, 2011).

It is important to note that 'a business that is a (certified) B Corp is not a different legal entity, but a member of a voluntary association subject to an assessment and ratings standard' (Hiller, 2013). Nevertheless, in some countries (USA, Italy) the legal status of 'Benefit Corporation' has been introduced. Therefore, it has to be clear that, although certified B Corporations (or B Corps) and Benefit Corporations share much in common, there are a few significant differences between both figures. Thus, a Benefit Corporation is a judicial entity that voluntarily meets higher standards of corporate purpose, accountability and transparency, while a B Corp is a company that has been certified by B Lab and proves to have met rigorous standards of social and environmental performance, accountability, and transparency (Michelini et al, 2016). Consequently, B Corps represent future potential Benefit Corporations, especially in contexts where there is no specific regulation yet (as in the case of Spain).

As pointed out by Rawhouser et al (2015), isolated attempts by individual firms or entrepreneurs to combine profit and purpose are as old as business itself. But, in recent years, the number of hybrid organizations that systematically integrate social and economic goals, combining some of the properties of both for-profit and non-profit organizations, has grown. In response, new legal forms for social hybrids have begun to emerge, including Benefit Corporations.

As a matter of fact, Benefit Corporations are hybrid forms of companies, in the sense that they are obligated to pursue public benefit in addition to the responsibility to return profits to shareholders, which represents 'an ethical step toward empowering socially committed commercial entities' (Hiller, 2013); a paradigm shift that bridges the for-profit and not-for-profit models (Nigri and Del Baldo, 2018). This traditional dichotomy has been considered insufficient to enforcing such dual missions: non-profit forms bar profit distribution and for-profit forms will create practical, if not legal, pressure to favour profit maximization over social good when the two come into conflict. In short, the Benefit Corporation form is effective in allowing a social enterprise formally to articulate its dual mission, although 'the delegation to third-party standard-setters to vet this public benefit and the lack of a statutory floor for what counts as public benefit make low standards and greenwashing particular concerns' (Reiser 2011).

A 'public benefit' is defined by Hiller (2013) as a 'material positive impact on society and the environment, taken as a whole, assessed against a third-party standard', which must be independent.

To sum up, the distinctive features of a Benefit Corporation are: (1) it has a corporate purpose to create a material positive impact on society and the environment; (2) the duties of its directors are expanded to require consideration of interests in addition to the financial interest of its shareholders; and (3) it is required to report each year on its overall social and environmental performance using a comprehensive, credible, independent, and transparent third-party standard (Clark and Babson, 2011).

2.3 B Corporations and Sustainability

Undoubtedly, companies operate nowadays in a context in which addressing sustainability issues is gaining increasing importance, having reached a strategic level. Therefore, since, according to Weismann (2017), Benefit Corporations were legally created to accommodate two potentially conflicting ethical obligations (the fiduciary duty to shareholders and the social responsibility to the stakeholders), they (and by extension certified B Corps) are best understood within the broader context Corporate Social Responsibility (Resor, 2012), because, as social enterprises, they host social and environmental purposes. In other words, due to their reinforced commitment to CSR practices and a mission bound to generate a public benefit, such organizations are a clear example of the convergence of for-profit companies and a strong CSR focus (Nigri and Del Baldo, 2018).

This feature, by definition, positions them as a natural contributor to sustainability and a player to be aligned more easily with the SDGs. As stated by Hiller (2013), these organizational forms 'provide the possibility for a unique kind of socially responsible business with great potential for sustainable practices', beyond shareholder primacy and wealth maximization duties. Consequently, in this category of firms, the main difference is found in the way in which profits are made, that is, 'through the conduct of business in a socially and environmentally responsible way', meeting the needs and expectations of increasingly conscious and demanding stakeholders (Clark and Babson, 2011).

As an example, Fischer et al (2019) deal with the issue of large pharmaceutical companies and the provision of affordable gene therapy activities for social reasons, proposing the incentivisation among those companies for the creation of subsidiaries with a B Corporation status able to implement pricing policies for their gene therapies as a result of a credible alignment of the industry, patients and payers' interests. In doing so, they would follow the example of Unilever with Ben & Jerry's or Danone with multiple subsidiaries.

All this kind of policies, related to health and other essential matters, are particularly sensible in rural areas, usually more fragile settings from an economic perspective and with higher obstacles to access basic social services for people wellbeing and development.

3. Methodology

- This case study has been elaborated based on secondary data (financial and commercial reports, interviews and news in the media, pieces of information available on the Internet), semi-structured interviews with both entrepreneurs (with open-ended questions and informal conversations) and direct observation in their headquarter (even with personal participation in some of their activities).
- The aim was to know how and why the company was born, its evolution over time, with the main stages that have led to its current configuration (with particular attention to its pioneering character as the first certified B Corporation in Spain), together with their challenges and strategies. Besides, addressing the intimate interrelation between their personal and professional lives was essential for a better understanding of their business motivations and decisions: family origins, personalities and aspirations as individuals and other personal features.

Following Michelini et al (2016), among the main areas of analysis in the literature on Benefit Corporations, the issues related to the need to manage the dual mission have emerged. This area, linked to the challenge of growth, has been taken as a particular focus in the case under study, which is displayed in the next section.

4. Case study

4.1 Geographical context: Arroyomolinos de León

Arroyomolinos de León is a Spanish municipality in the province of Huelva (autonomous community of Andalusia), located in the 'Sierra de Aracena and Picos de Aroche' Natural Park (see map).

It is a typical mountain village, where today its economy is mainly based on olive groves (olive oil extraction), cork oak (cork harvesting) and livestock (goat milk production sector). We should also mention the late-season potato and pear as part of their agricultural production.

Since 1950, when Arroyomolinos de León had 2,398 inhabitants, the population has been declining, amounting to 981 in 2017 (a 41% only). In the last ten years, the relative population decrease has been 5.85%. The regressive demographic trend is as evident as it is acute.

More serious still is that this situation is becoming increasingly common throughout Spain. According to the Depopulation Commission of the Spanish Federation of Municipalities and Provinces (2017), approximately 50% of Spanish municipalities are in danger of extinction. Specifically: 'There are already more than 4,000 (out of a total of 8,125) Spanish municipalities that are at a very high, high or moderate risk of extinction: 1,286 that subsist with less than 100 inhabitants, 2,652 with less than 501 registered inhabitants, and a significant part of more than one thousand municipalities with between 501 and 1,000 inhabitants.' (p. 11). As a result of this deep and increasingly more pronounced imbalance, only 3.15% of the population lives in 61% of municipalities.

4.2 Human context: two young rural entrepreneurs

Israel and Juanjo Manzano wanted a purpose in their lives. They wondered what they could do to give them meaning, positively influencing other people. They were born and raised in a rural environment. They did not want to abandon their roots, as so many other young people had been forced to do, and they wondered how they could generate opportunities that would prevent depopulation and the cascade of negative consequences that this entails, which they knew first hand. Essentially, they were working to find out how to channel their inner strength to influence the social problems of their environment and change it.

They lived in the countryside since their childhoods, in a small mountain village (see the previous section), and were able to clearly discern the vulnerability and lack of resources suffered by the people in that environment. The resilience they saw in their own family to maintain their agricultural/livestock activity and continue living in their village, motivated them to create an organisation that revalued rural life in order to keep a population in that environment. This was the trigger that gave rise to Alma Natura: to give people who do not want to leave their village work and leisure opportunities so they can stay there.

But why this name? Alma (Spanish for 'soul') because they put great intensity into what they do; and Natura because they seek to maintain a population in the rural (natural) environment. Family values (effort, strength, respect for others, and love of nature) were transferred into the organisation that these social entrepreneurs promoted, as part of their culture.

4.3 First steps: the 'Alma Natura' Association

Alma Natura was founded in 1997, as a result of the concerns harboured by the Manzano brothers (Juanjo was 19 years old; Israel just 17), and the support of a group of friends, in the absence of opportunities for young people in their hometown: 'We are rebelling against the situation of having to leave the village and go to the city to work', says Juanjo Manzano[3]. It started out as just an informal group, which had a range of names, until the Alma Natura Cultural Association was formally constituted in 2000, understood as a dynamic agent for the territory. To this end, they organised environmental education activities, active leisure activities, guided tours of the surroundings, entertainment programmes with sports events, cultural events, and more. It is relevant to point out the possibilities that, very early, they were able to recognize locally, whereas others only were seeing a lack of them.

The following words of Juanjo allow for a better appreciation of their aforementioned concerns: 'I remember when my friends from the city left at the end of every August. Those of us from the village really understand this feeling. When your friends leave and you're left with the few young people who live in your village, leisure activities diminish. This was a feeling that tormented me each summer. Now, with the passage of time, our organisation has been able to give meaning to people who live in a village, creating opportunities for employment, leisure, better health, education, etc.'[4].

During this period, both brothers were immersed in their studies. Juanjo had completed his advanced professional training in Environmental Health and had started his university studies in primary education, although he did not complete them. Israel successfully completed his Diploma in Teaching, specialising in physical education. Neither of them wanted to devote themselves to the public sector (although their family encouraged them to prepare for one of the exams for this), and at the same time, they felt that what really appealed to them was working with people, just like they did in the Association.

Finding their path, they continued studying in areas such as ethics and entrepreneurship. Although for various reasons, some partners left the Association, the Manzano brothers continued forward, with their convictions intact and with a firm commitment to devote all their energy to the purpose that moved them. And they did this emphatically, even leading them to make radical personal decisions (such as not having children whilst this would interfere with their commitment).

In this first stage (1997-2002), apart from some subsidies, the Association, which worked mainly for Town Councils, found it difficult to bill for their services. To do so, Juanjo registered as self-employed for a while. This situation began to make them think that, without undermining their social purpose, they should look for another legal form to continue developing their activities. This corporate transformation came in 2004, as explained in the following section. However, the Association continued to exist until 2007, when it was legally dissolved.

In summary, since its origins as a non-profit association dedicated to organising social invigoration activities at a local and district level, now, after an 'innovative' evolution (as its protagonists define it), we find ourselves with a company that offers its social empowerment services throughout rural Spain. The following section describes this evolution.

4.4 The company was born: Alma Natura Social, S.L.

The Association's activities evolved according to the demands they detected, although they depended entirely on the public funds (grants, etc.) they could raise, which was not financially sustainable. For this reason, on 18 November 2004, Alma Natura was turned into a private company with the legal form of an employee-owned limited liability company (Alma Natura Educación, Ocio

[3] Source: https://diarioresponsable.com/opinion/26050-alma-natura-bcorp-spain (27-02-2019).

[4] Source: https://medium.com/@BCorpSpain/entrevistas-b-j-manzano-si-queremos-conseguir-los-ods-debemos-revalorizar-la-vida-rural-103a74518fef (27-02-2019).

y Tiempo Libre, S.L.L.), with a share capital of 3,006 euros. As well as Israel and Juan José, acting as joint directors, there was a third partner: Laura, who had studied medicine.

They tried to combine the best of both worlds, social purpose and economic sustainability, but they had to stop thinking like a non-profit organisation and re-situate themselves into a business logic.

In 2006, following Laura's departure for professional reasons, the company transformed its legal form into a private limited company (Alma Natura Educación, Ocio y Tiempo Libre, S.L.), with only two partners: the Manzano brothers. In this transition, Concepción Macías (Conce) joined the company as an employee; a graduate in Environmental Sciences, which ultimately played an important role in the direction the company took.

In this corporate chronology, the company adopted its current name in 2016: Alma Natura Social, S.L. In their own process of learning, after several form changes, they finally found its definitive legal status.

During its first years of operation (2005-2008), the company's turnover volume and the number of employees increased, whilst their field of activity (products and geographical markets) expanded, although not always fully consistent with its original purpose.

In 2009-10, in addition to a very severe economic crisis in the country, which reduced its portfolio of public customers dramatically (from about 500 to just 32), there were also some family events that marked a turning point: the Manzano brothers' grandmother and father died, and Juanjo had an accident in the company car (in which he was, fortunately, unharmed), on one of his many comings and goings for work. This all resulted in a personal crisis that led them to rethink the meaning of their lives. In this context, they started searching for a new way of understanding the company, and, almost by chance, they stumbled across the 'Team Academy'. This was an international school of entrepreneurs originating in Finland, with methodologies that differed from tradition, and whose expansion to Spain was 'Team Academy Euskadi', established in Bilbao, more than 800 kilometres away. In its training options, they found a part-time programme that gave them high expectations, called 'Leadership Experience'. They decided to do it, not only Israel and Juanjo, as partners of the company, but also Conce, an employee whose role was highly valued: in fact, despite her employment status, she was given a voice and vote in corporate decisions.

This was in 2011, with all the weight of the economic crisis. The cost was not small for them, nor was the effort involved (including travelling by car), but they were persuaded that this would help them align the meaning of their lives with the purpose of their business. Again, this exercise of commitment and coherence led them to another radical decision: Conce and Juanjo, who were at a couple by this point, decided to not buy furniture for their home in order to pay for the course.

This experience and those that it led to resulted in the reinvention of Alma Natura. Its purpose was redefined as follows, seeking a greater focus[5]: 'We reactivate the rural environment. We avoid depopulation by designing public/private partnerships to empower people'. Its catalogue of services was reorganised, incorporating a new axis: health, in addition to employment, education and technology. And their search for clients understood as allies for achieving their purpose, is reoriented towards private corporations, diversifying their portfolio and moving away from dependence on public funds: they begin to knock on the doors of large organisations, such as Vodafone Foundation, Coca-Cola Foundation, etc., always from the alignment of working with allies that do not conflict with their values and social purpose. All in all, this is in line with the findings of Sharma *et al.* (2018), in the sense that social enterprises re-organize for impact by updating their configuration of practices over time.

Their business model was corroborated by their contact with the global B-Corporations movement, which they reached through Change.org (probably the world's most popular platform for change). They reaffirmed that this was the model with which they identified themselves, in which the market economy is used to achieve social objectives. They abandoned other certifications

[5] 'The more focused we are on our purpose, the better our returns', said Juanjo Manzano. Source: https://diarioresponsable.com/opinion/26050-alma-natura-bcorp-spain (12-03-2019).

they had but which were not fully in line with their business philosophy (ISO 9000 and ISO 14000), and, in 2013, they were certified for the first time as a B Corporation; the first in Spain, paving the way to many others that followed (the current list of B Corps in Spain can be found at https://bcorporation.net/directory). Without knowing it, Alma Natura was born as a B venture.

Their coherence in following this model has led them to acquire a series of commitments, including the selection of responsible suppliers; the presentation of a triple bottom line report (economic, environmental and social); minimal salary differences; no distribution of dividends, applying all profits to the fulfilment of the company's social purpose; devoting part of their time to corporate volunteer actions aligned with this purpose; offsetting the carbon footprint generated by their activity; using renewable energy sources; offering free training in universities and business centres on this logic of managing businesses. In brief, a whole set of actions that raise their score in their B Corp impact evaluations.

As such, Alma Natura is defined as a company whose social purpose is the reactivation of villages in Spain, allowing it to focus its actions and give itself meaning. In the words of Juanjo Manzano: '...although for many people living in the city is the present and future, if we really want to change the world and make the Sustainable Development Goals a new opportunity to rethink our lifestyle, we must revalue life in the rural world and more people must choose to do so in these spaces (to be carbon sinks, make our forests sustainable, generate healthy food, etc.)'[6]. Luis González de Canales, project manager in the company, expresses it this way: 'By keeping the villages alive, we can do our bit towards the Sustainable Development Goals'[7], mitigating the high environmental cost (desertification, loss of biodiversity, increased pollution in cities), social cost (loss of cultural diversity and sustainable production, public services that collapse in cities and disappear in villages, territorial deregulation) and economic cost (loss of value of the primary sector, increase in the cost of public services, real estate bubble) of depopulation.

In Alma Natura, the concept of the customer is assimilated to that of an ally, which implies harmony and commitment with the purpose that unites them. They understand that the consolidation of a company of this nature depends fundamentally on finding these allies, both in private companies and in public administrations. In summary, there are three segments of customer-allies:

A.-In the private sector, large corporations and foundations (though they can also be SMEs), whose CSR policies are aligned with the services offered by Alma Natura.

B.-In the public sector, town councils and government agencies at the different levels of administration, which are provided with training events and activities related to empowering rural citizens.

C.-Individual people with interest in its experiential learning programmes, who are offered mentoring-style learning activities that they pay for directly.

It is, therefore, a business model with public and private funding. Now, the public administration does not grant subsidies, but pays for the services provided (sometimes in kind, providing staff and space); and they have private companies that participate financially in the projects. More details about Alma Natura's business model are displayed in the appendix, using the CANVAS technique (Osterwalder and Pigneur, 2010).

4.5 The first Spanish company certified as a B Corp

Alma Natura was the pioneering company of the B Corp movement in Spain, with an activity focused in the field of rural development and social innovation. In the words of Juanjo Manzano: 'Forming part of the solution is what gives meaning to our professional lives, and, I would say, to our personal lives too. What would this world be if we weren't working for a better world?'[8]. That is a struggle for rediscovering rurally the meaning of life.

[6] Source: https://medium.com/@BCorpSpain/entrevistas-b-j-manzano-si-queremos-conseguir-los-ods-debemos-revalorizar-la-vida-rural-103a74518fef (27-02-2019).

[7] Source: http://almanatura.com/2019/02/coste-ambiental-social-economico-despoblacion/ (27-02-2019).

[8] Source: https://diarioresponsable.com/opinion/26643-b-corp-de-certificado-a-movimiento-para-el-cambio (26-02-2019).

In this case, the road towards a better world entails empowering rural citizens, in its abovementioned four areas of intervention (more details in the appendix), as a way to maintain the population and even repopulate rural areas (a more recent line of work through the HolaPueblo.com project[9]). To achieve this, coherence (they offer what they themselves have done, i.e. live and work from a small village) and empathy (through direct knowledge of the needs of those who live in a rural setting) have been two differentiating factors in the construction of their own path.

But, why B Corp? In Alma Natura, they recognised that they were tired of certificates that neither their clients, their workers or themselves valued (for example, from the point of view of CSR, in 2006 they joined the United Nations Global Compact). However, B Corp offered them a process of evaluation and improvement aligned with their values, both personal and organisational (and at a good price). They believed that another business logic is possible, with a different meaning (and measurement) of success, to build a more humane and sustainable world. And this is what they found in the B Corporation movement. In addition, to bring about the economic change that they aspire to, the actions of each company in isolation are insufficient, so being part of a global organisation reinforced their purpose.

In the impact report for 2018, Alma Natura achieved (on a scale of 0 to 200) a rating of 153.8 (128 in 2017), which has led to it being included in the list of best companies for the world in terms of global impact (as in 2017 and 2016) and for the community. The increase experienced has been very remarkable, from the 89.7 points it started with in 2013. Its B Impact Report can be found at https://bcorporation.net/directory/alma-natura-social-sl

At Alma Natura, they believe that this figure brings a series of benefits: protecting the company's mission, helping it not to lose its focus; the B evaluation as a management and improvement tool; being part of a global community; getting new clients and investors; changing the way of doing business; having support plans through communities of B Corporations; a communication kit and a profile on the Certified B Corporation site.

Finally, the main magnitudes relating to the social results achieved by the company in the last six years are summarised below (Table 1).

Tab. 1: Main social results

YEAR	No. of people empowered (total)	No. of people empowered in relation to the purpose to maintain the rural population through its four areas of involvement (employment, education, health and technology).
2014	2,767	1,523 (55%)
2015	2,860	419 (15%)
2016	3,150	2,634 (84%)
2017	5,926	5,090 (86%)
2018*	5,602	4,687 (84%)
2019*	4,502	3,033 (67%)

(*) In 2018, a corporate volunteering programme was set up for its workforce, resulting in the following figures: 34 activities, 181 hours, 243 people (mentoring to entrepreneurs, social events, etc.). In 2019, these figures were: 34 activities, 126 hours, 164 people (environmental volunteering, social events, mentoring with entrepreneurs, etc.).

Source: Alma Natura.

4.6 New projects and challenges

Although these continue to pertain to their contribution to changing the business paradigm, redefining the meaning of success and revaluing rural life, growth management has become a dilemma, what contrasts with the findings gathered by Parker *et al.* (2019). As Juanjo Manzano points out: 'a small social enterprise that, although it doesn't stop growing, reaches a point where it doesn't want to anymore. We don't want to open branches across Spain, nor do we want a franchise

[9] This is an online platform, still in construction, to attract entrepreneurs looking for a village to live in. This impulse towards a new kind of rural environment is supported by the 'ByeByeCiudad' research project (http://h2iinstitute.com/proyecto/bye-bye-ciudad), with Alma Natura as one of its 'travel companions'.

system or anything like it'[10].

At the same time, the creation of the Alma Natura Foundation is its most immediate project, through which it channels all its volunteering and philanthropic activities that reinforce its core purpose. They are also working on building a new metric of business performance that can show progress towards this goal more comprehensively.

The consolidation of the Rural Innovation Lab launched in 2018, together with Impact Hub Madrid[11] and the Spanish Rural Development Network[12], is another of its projects, along the lines of creating the necessary rural-urban conversations that help to revalue rural life in Spain and thus prevent its depopulation in the rural areas.

5. Conclusion

In 2018, the Spanish Network of the United Nations Global Compact and the Rafael del Pino Foundation awarded Alma Natura 'go! ODS Recognition' for its contribution to achieving goal 11 of the 2030 Agenda, on sustainable cities and communities. Alma Natura's alignment with this goal (referred to in section 1.1), and the contribution it has made to it with its social innovation project in rural areas, have thus received decisive support on a national scale.

In a more general sense, this fact and the case as a whole can be seen as a sign that rural Spain refuses to die. The youngest residents, with radical and innovative proposals, are fighting for it. If they achieve it, it will be a huge contribution to achieving the SDGs. In any case, the effort is more than plausible.

The basic dilemma for Alma Natura and their creators is how to keep going making compatible their business and personal ambitions. According to Nigri and Del Baldo (2018): 'A key issue in the emerging debate on small- and medium-sized Benefit Corporations concerns how these companies-with limited reach and considerable financial and human resource constraints-can effectively absorb their added social responsibility. In particular, such firms need to manage their dual mission, integrate social and environmental goals in their business model, and incorporate accountability mechanisms, all while scaling up and garnering the necessary resources to be economically competitive'.

From the very beginning, the company has been conceived as a tool to achieve a social purpose aligned with the need for change in rural settings, while at the same time provides a way of living for them. Growth has been the lever for increasing the social impact of the company. But from a certain threshold, business growth generates some tensions with their personal aspirations. The findings obtained by Conger *et al.* (2018, 180) could help to frame this dilemma, since 'joining a pro-social category (B Corporation in this case) catalyzes identity-driven reflexivity…, potentially altering the firm's engagement in pro-social activity. This identity-driven process occurs in tandem with evaluations of opportunity viability and attractiveness, the potential for intra-organizational conflict, and the relative power and position that category legitimacy affords the firm'. The evaluation of the three proposed tandems and their dynamic within Alma Natura could anticipate a way out to this trouble.

About the B Corp certification, in spite of its steady growth and global scope of this pro-social business movement, as Moroz *et al.* (2018, 127) recognize, 'yet, empirically, we still know little about it'. Hopefully, this case study can contribute some pieces of evidence to a better understanding of the implications of this model. At this early stage, qualitative and inductive methodologies are necessary to create a corpus of knowledge able to shed some light.

In this line, the findings obtained by Parker *et al.* (2019) highlight the need for management

[10] Source: http://almanatura.com/2016/10/como-puedes-ayudarnos-eactivar-comarcas-rurales/ (27-02-2019).

[11] This organization forms part of the 'International Impact Hub' network, and manages coworking spaces for entrepreneurs in Madrid.

[12] This is a non-profit association founded in 1995 with a general view to promote a comprehensive and sustainable rural development model.

theorists to pay greater attention to internal re-organization costs and external benefits flowing from B Lab certification. To this respect, what this case has shown us is that the approach to this phenomenon has to be contingent, as the growth of Alma Natura contradicts the results found by Parker *et al.* (2019) on North American certified B Corporations. Consequently, others variables should be taken into consideration by researchers to explain the impacts of this certification and its trade-off (such as general and specific business environment, portfolio of resources and capabilities, competitive strategy…). Obviously, this has important practical implications for organizations contemplating this option. Therefore, the challenge for researchers in this field is served, overcoming the obvious limitation of this paper, which is backed on a single case. The analysis of other cases with a similar focus would be advisable for better understanding the role of B Corps for sustainable development and the achievement of SDGs, especially in rural settings.

But the covid-19 arrived and, suddenly, everything stopped. Now, the big question mark is how to adapt the company to the new social and economic scenario, full of uncertainties. How will its purpose and strategy be affected?

Appendix

In more detail, here is a list of some of the services that the company currently offers for rural reactivation: advice and mentoring for rural entrepreneurs; participatory and community activation of public facilities in rural environments; projects aimed at attracting young talent; creation of rural co-working spaces; basic digital literacy workshops for the elderly; projects aimed at modernising local (rural) businesses; innovative methodologies to generate new alternatives to people's needs; study, design and implementation of a smart specialisation strategy to help strengthen the territorial economy; training for the promotion of health and healthy habits; innovative sessions to strengthen the school community; territorial diagnoses and customised projects; personalised and group attention to the emotional needs and improved self-esteem of the rural population; agro-therapy for people with mental illness; socio-labour guidance for young people.

In 2019, its turnover reached € 705,375, with 27 employees (7 of them working in its headquarters of Arroyomolinos de León and 20 spread all over Spain).

CANVAS BUSINESS MODEL

WHO
1.-CUSTOMER SEGMENTS
We create value for rural communities by working with: - Private companies (particularly large corporations and foundations) with CSR policies consistent with the purpose and values of AN. - Public administrations (city councils and other governmental instances) with incidence in rural areas. - Individuals.
2.-CHANNELS
We communicate with our clients and the end users of our services via: - Our blog and active presence in social networks (Facebook, Twitter, Linkedin, Youtube). - The organization and participation in events. - The global community of B Corporations.
3.-CUSTOMER RELATIONSHIPS
Based on: - Our professionalism, involvement and passion for work. - The ability to help our customers to achieve social sustainability targets in the rural environment.
WHAT
4.-VALUE PROPOSITION
- We help solve the problem of depopulation in rural areas by creating opportunities and more favorable living conditions for the people who live there. To empower them, we target four categories of needs, which shape the four axes of our service portfolio: employment, education, health and technology. With them, we contribute so that our clients can join the collective effort to reactivate rural areas.
HOW
5. KEY RESOURCES
- Direct knowledge of the needs of those who reside in rural areas, which reinforces our ability for empathy. - The credibility derived from the coherence of working for the rural environment from the rural environment. - A team of collaborators in tune with the purpose and values of AN. - The certification as a B Corporation (the first in Spain).
6.-KEY ACTIVITIES
- Quality management and effectiveness of the services provided. - Human relations, both within the company (to stimulate internal cohesion) and with customers (to favour their loyalty). - Communication, both internal (that contributes to the alignment of our team with the vision of the company) and external (that projects and consolidates an image consistent with the profile of a social business). - A metric of success consistent with the purpose of the company. - The management of the commitments acquired as a B Corporation, which allows the company to maintain its status as one of the best companies for the world.
7.-KEY PARTNERSHIPS
- Customers, both public and private, understood as allies for the realization of the company's purpose. - Alliances with other organizations with which, through their complementarities, more ambitious projects can be developed (such as the 'ByeByeCiudad' research project, origin of the innovative project 'HolaPueblo.com'; or the alliance that has given rise to a Lab of Rural Innovation).
HOW MUCH
8.-COSTS STRUCTURE
- Personnel expenses, fundamentally.
9.-REVENUE STREAMS
- Income derived from the provision of services to its clients.

Source: Own elaboration.

References

ARCHONDO I., BARANDIARAN J., CARDOSO M., CARTA G., POU V., RUIZ P., SUÁREZ A. (2018), "Tendencias en la urbanización: Riesgos y oportunidades", *BBVA Research Observatory*, November 5th. Retrieved from https://www.bbvaresearch.com/wp-content/uploads/2018/11/Observatorio-Futuro-de-las-Ciudades.pdf (27-02-2019).

CHEN X., KELLY T.F. (2015), "B-Corps-A Growing Form of Social Enterprise: Tracing Their Progress and Assessing Their Performance", *Journal of Leadership & Organizational Studies*, vol. 22, n. 1, pp. 102-114.

CLARK JR W.H., BABSON E.K. (2011), "How benefit corporations are redefining the purpose of business corporations", *William Mitchell Law Review*, vol. 38, n. 2, pp. 817-851.

CONGER M., MCMULLEN J.S., BERGMAN B.J., YORK J.G. (2018), "Category membership, identity control, and the reevaluation of pro-social opportunities", *Journal of Business Venturing*, vol. 33, n. 2, pp. 179-206.

DIMAGGIO P.J., POWELL W.W. (1983), "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields", *American Sociological Review*, vol. 48, n. 2, pp. 147-160.

FISCHER A., DEWATRIPONT M., GOLDMAN M. (2019), "Benefit Corporation: a path to affordable gene therapies?", *Nature Medicine*, Vol. 25, n. 12, pp. 1813-1814.

HILLER J.S. (2013), "The benefit corporation and corporate social responsibility", *Journal of Business Ethics*, vol. 118, n. 2, pp. 287-301.

LIGHT S.E. (2019), "The law of the corporation as environmental law", *Stanford Law Review*, vol. 71, January, pp. 137-213.

KENNY G. (2014), "Your Company's Purpose Is Not Its Vision, Mission, or Values", Harvard Business Review, September 3th. Retrieved from https://hbr.org/2014/09/your-companys-purpose-is-not-its-vision-mission-or-values (26-05-2020).

KJAER A.L. (2015), "Understanding tomorrow's consumer landscape", in Talwar R. (Series Curator and Editor), Wells S., Koury A., Rizzoli A. (Co-Editors), *The Future of Business*, Fast Future Publishing, Hildenborough (UK), pp. 163-170.

MICHELINI L., NIGRI G., IASEVOLI G., GRIECO C. (2016), "B Corps and their social impact communication strategy: does the talk match the walk", in *XIII Convegno Annuale della Societa'Italiana Marketing*, Università di Cassino, pp. 20-21.

MICKELS A. (2009), "Beyond corporate social responsibility: Reconciling the ideals of a for-benefit corporation with director fiduciary duties in the US and Europe", *Hastings International and Comparative Law Review*, vol. 32, n. 1, pp. 271-304.

MOROZ P.W., BRANZEI O., PARKER S.C., GAMBLE E.N. (2018), "Imprinting with purpose: Pro-social opportunities and B Corp certification", *Journal of Business Venturing*, vol. 33, n. 2, pp. 117-129.

NIGRI G., DEL BALDO M. (2018), "Sustainability Reporting and Performance Measurement Systems: How do Small- and Medium-Sized Benefit Corporations Manage Integration?", *Sustainability*, vol. 10, n. 12, pp. 4499.

OSTERWALDER A., PIGNEUR, Y. (2010), *Business model generation: a handbook for visionaries, game changers, and challengers*, John Willey & Sons, Hoboken, New Jersey.

PARKER S.C., GAMBLE E.N., MOROZ P.W., BRANZEI O. (2019), "The Impact of B Lab Certification on Firm Growth", *Academy of Management Discoveries*, vol. 5, n. 1, pp. 57-77.

RAWHOUSER H., CUMMINGS M., CRANE A. (2015), "Benefit corporation legislation and the emergence of a social hybrid category", *California Management Review*, vol. 57, n. 3, pp. 13-35.

REISER D.B. (2011), "Benefit corporations-a sustainable form of organization", *Wake Forest Law Review*, vol. 46, pp. 591-625.

RESOR F.R. (2012), "Benefit corporation legislation", *Wyoming Law Review*, vol. 12, pp. 91-113.

ROOTS FOR SUSTAINABILITY (2018), *B Corp Spain 2017. Annual Report*. Retrieved from https://drive.google.com/file/d/1l0QXWk6oWV7wgMVufJtmPoqhW16ZJFnI/view (26-02-2019).

SHARMA G., BEVERIDGE A.J., HAIGH N. (2018), "A configural framework of practice change for B Corporations", *Journal of Business Venturing*, vol. 33, n. 2, pp. 207-224.

SPANISH FEDERATION OF MUNICIPALITIES AND PROVINCES (2017), *Población y Despoblación en España 2016*. Retrieved from: http://femp.femp.es/files/566-2117-archivo/20170125%20informe_despoblacion.pdf (12-03-2019).

STUBBS W. (2017), "Sustainable Entrepreneurship and B Corps", *Business Strategy and the Environment*, vol. 26, n. 3, pp. 331-344.

VARGAS-SÁNCHEZ A. (1998), "Social Economy Organizations in a World in Transition", in Zopounidis C., Pardalos P.M. (Eds.), *Managing in Uncertainty: Theory and Practice. Applied Optimization*, vol. 19, Springer, Boston, MA, pp. 445-453.

WEISMANN M.F. (2017), "The Missing Metrics of Sustainability: Just How Beneficial Are Benefit Corporations", Delaware *Journal of Corporate Law*, vol. 42, pp. 1-51.

Sostenibilità ambientale e food packaging. Il ruolo del materiale nel processo di acquisto

DONATA TANIA VERGURA[*] CRISTINA ZERBINI[•] BEATRICE LUCERI[♠] GUIDO CRISTINI[**]

Abstract

Obiettivi. *Lo studio si propone di arricchire la conoscenza sul ruolo del materiale del packaging nel processo di acquisto.*

Metodologia. *È stato condotto uno studio sperimentale tra soggetti per indagare se il materiale di confezionamento influenza il giudizio sulla qualità del prodotto e l'intenzione di acquisto*.

Risultati. *Il vetro è il materiale che produce la risposta cognitiva più favorevole, soprattutto in termini di minore rischio percepito associato al consumo e maggiore qualità del prodotto, intenzione di acquisto e disponibilità a pagare. Per contro, la plastica tradizionale non gode di una buona immagine.*

Limiti della ricerca. *Dal momento che la percezione del materiale di confezionamento è strettamente correlata alla categoria di prodotto, i risultati non possono essere generalizzati al comparto alimentare.*

Implicazioni pratiche. *Lo studio offre alle aziende e ai marketing manager implicazioni utili alla gestione del packaging, una delle componenti rilevanti della leva prodotto.*

Originalità del lavoro. *La gran parte degli studi in letteratura si è focalizzata su specifici elementi del packaging tra cui il colore, la forma, la grafica e i claim nutrizionali. Scarsa attenzione è stata, invece, dedicata all'impatto del materiale sulla percezione e sul comportamento di acquisto dei consumatori.*

Parole chiave: *materiale del packaging; atteggiamento; qualità percepita; rischio percepito; intenzione d'acquisto; disponibilità a pagare*

Objectives. *The paper aims to enrich the knowledge on the role of packaging material in influencing the product buying process.*

Methodology. *A between-subjects experimental design was conducted in order to investigate if the product quality judgment and the purchase intention towards the product differ among different packaging materials*.

Findings. *Glass is considered better than other materials, especially in terms of lower perceived risk and higher (a) product quality, (b) intention to buy and (c) willingness to pay. By contrast, plastic does not have a good image.*

Research limits. *Since the perception of the material should be closely related to the product category, caution should be exercised in generalizing the findings to the all food categories*.

Practical implications. *The study has useful insights for manufacturers and product managers packaging management, one of the relevant components of the marketing mix.*

Originality of the study. *Most of the evidence regarding packaging cues focuses principally on elements like colour, shape, graphics and nutritional claims. A limited marketing research has been conducted about the crucial role of packaging material in consumer evaluation process.*

Key words: *packaging material; attitude; perceived quality; perceived risk; purchase intention; willingness to pay*

[*] Ricercatore in Economia e Gestione delle Imprese - Università di Parma - Italy
e-mail: donatatania.vergura@unipr.it

[•] Assegnista di ricerca in Economia e Gestione delle Imprese - Università di Parma - Italy
e-mail: cristina.zerbini@unipr.it

[♠] Ordinario di Economia e Gestione delle Imprese - Università di Parma - Italy
e-mail: beatrice.luceri@unipr.it

[**] Ordinario di Economia e Gestione delle Imprese - Università di Parma - Italy
e-mail: guido.cristini@unipr.it

1. Introduzione

La funzione primaria del packaging è di contenere e proteggere il prodotto dagli agenti in grado di comprometterne la qualità (come sporco, umidità, rottura, urti, vibrazioni, compressione, sbalzi di temperatura, furti). Secondaria, ma non meno importante, è la funzione di informazione all'utilizzatore. Quanto riportato sulla confezione è un vero compendio per l'uso e la gestione del prodotto: descrizione, composizione, dimensione, luogo di produzione, marca, garanzie, modalità di trasporto, istruzioni per lo smaltimento. Nell'attuale contesto di mercato, caratterizzato da crescente competizione e importanti cambiamenti nei processi di comunicazione tra imprese e consumatori, il packaging assume anche un ruolo strategico di marketing (Rundh, 2005; Luceri *et al.*, 2020). Il motivo è la capacità di attirare l'attenzione dei consumatori quando si trovano di fronte allo scaffale del punto vendita, di facilitare il riconoscimento della marca, di influenzare la percezione e la valutazione delle caratteristiche di qualità, personalità e unicità del prodotto. Grazie a questa capacità la confezione del prodotto rientra a pieno titolo tra i fattori utili ai fini del posizionamento e dell'immagine di marca in termini di *brand recognition*, *brand association* (e.g. George, 2005; Keller, 2009; Orth e Malkewitz, 2008; Silayoi e Speece, 2007; Stewart, 2004; Underwood e Ozanne, 1998) e *brand choice* (e.g., McDaniel e Baker, 1977; Prendergast e Pitt, 1996; Rettie e Brewer, 2000). Le scelte relative agli elementi comunicativi del packaging assumono, pertanto, rilevanza fondamentale. Data l'influenza sul processo valutativo e decisionale del consumatore, sviluppare una conoscenza approfondita su questi elementi è cruciale per migliorare la comunicazione di prodotto e supportare la strategia di vendita (Vergura e Luceri, 2018). Il presente studio intende contribuire al dibattito scientifico sul ruolo di marketing del packaging focalizzando l'attenzione sul materiale con cui è composto.

La letteratura di marketing ha evidenziato che sia la valutazione del prodotto sia la decisione di acquisto sono influenzate dagli elementi verbali e visuali della confezione (e.g., Andrews *et al.*, 2013; Aschemann-Witzel e Hamm, 2010; Faulkner *et al.*, 2014; Garretson e Burton, 2000; Gorton *et al.*, 2010; Hoegg e Alba, 2011; Hogg *et al.*, 2010; Liaukonyte *et al.*, 2013; Luceri e Zerbini, 2019; Luceri *et al.*, 2020; Raghubir e Greenleaf, 2006; Saba *et al.*, 2010; Schoormans e Robben, 1997; Silayoi e Speece, 2004; Tan e Tan, 2007; Underwood *et al.*, 2001; Underwood e Klein, 2002; Wansink e Chandon, 2006). Nella prima categoria rientrano le informazioni fornite, come ingredienti, paese di produzione e valore nutrizionale; nella seconda il colore, la forma, il materiale e tutti gli elementi grafici (ad esempio brand, logo, immagine del prodotto). La gran parte degli studi si è focalizzata su specifici elementi quali colore, forma, elementi grafici e *claim* nutrizionali (informazioni sulle proprietà nutritive di un alimento). Decisamente poco indagato è il ruolo di marketing del materiale di confezionamento; l'interesse è confinato a un numero limitato studi di cui la maggior parte ha privilegiato le caratteristiche di sostenibilità (e.g., Barber, 2010; Magnier e Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015) piuttosto che la composizione (e.g., Adam e Ali, 2014; Holliwood *et al.*, 2013; Kariyawasam *et al.*, 2006; Luceri *et al.*, 2020). Nel tentativo di colmare il gap esistente in letteratura, il presente articolo propone e discute i risultati di uno studio condotto su determinati materiali di confezionamento e alcune categorie di prodotti alimentari. In particolare, attraverso uno studio sperimentale, sono state indagate la valutazione e l'intenzione di acquisto dei consumatori rispetto ai materiali con cui sono commercializzate le categorie merceologiche del latte, dell'olio extravergine di oliva, della passata di pomodoro e del succo di frutta.

L'articolo è strutturato come segue. Il prossimo paragrafo è dedicato al background teorico e alla presentazione dell'obiettivo di ricerca. Successivamente, vengono descritti la metodologia impiegata nello studio e i risultati ottenuti. Il lavoro si chiude con la discussione delle implicazioni manageriali e delle prospettive di ricerca futura.

2. Background della letteratura

La confezione del prodotto assume oggi un ruolo assimilabile a quello delle altre leve di marketing, essendo un veicolo di comunicazione e di branding (Rettie e Brewer, 2000). Diversi fattori giustificano l'importanza del packaging nel processo decisionale d'acquisto. In primo luogo, è l'ultimo elemento che i consumatori vedono prima di compiere la scelta finale di acquisto quando si trovano di fronte allo scaffale del negozio (fisico o virtuale che sia). In tale circostanza, le caratteristiche della confezione - come il colore, gli elementi grafici o le informazioni fornite - incidono in maniera determinante sulla identificazione del prodotto (più precisamente sull'essere notato o ignorato) e sulla sua attrattività. Questo vale per i beni di impulso, ossia ad acquisto non pianificato (Herrington e Capella, 1995), così come per i beni su cui il consumatore non possiede informazioni preliminari e/o non ha maturato delle aspettative circa la capacità degli stessi di soddisfarlo. Sono tutti casi in cui aumenta la probabilità che l'intenzione e la decisione di acquisto vengano maturate in funzione di ciò che viene comunicato in negozio. In secondo luogo, il consumatore è spesso costretto a comprare in fretta a causa della riduzione del tempo a disposizione per lo svolgimento delle attività quotidiane. Si tratta di un'influenza situazionale che può indurre a scegliere meno prodotti rispetto ai bisogni reali e/o a quanto pianificato (Herrington e Capella, 1995). Una confezione in grado di attirare l'attenzione in negozio assolve all'importante funzione di aiutare il consumatore a comporre il carrello della spesa velocemente (Silayoi e Speece, 2004; 2007). Queste evidenze hanno indotto alcuni autori a definire il packaging come una caratteristica intrinseca del prodotto e del brand che informa i consumatori sulla personalità e qualità del bene, influenza il riconoscimento della marca e crea associazioni positive o negative con quest'ultima (e.g., Keller, 2009; Orth e Malkewitz, 2008; Silayoi e Speece, 2007).

Data l'importanza del ruolo comunicativo del packaging, una parte della letteratura di marketing si è interessata allo studio dell'impatto degli elementi verbali (ad esempio, ingredienti, valore nutrizionale, paese di produzione e *claim* nutrizionali) e visuali (colore, dimensione, forma, materiale ed elementi grafici) sul comportamento del consumatore. Entrambe le tipologie si sono dimostrate in grado di attirare l'attenzione, di creare aspettative circa il contenuto, di orientare la valutazione del prodotto e, conseguentemente, di influenzare la decisione di acquisto (e.g., Andrews *et al.*, 2013; Aschemann-Witzel e Hamm, 2010; Barber, 2010; Faulkner *et al.*, 2014; Garretson e Burton, 2000; Gorton *et al.*, 2010; Hoegg e Alba, 2011; Hogg *et al.*, 2010; Liaukonyte *et al.*, 2013; Luceri *et al.*, 2020; Luceri e Zerbini, 2019; Magnier e Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015; Raghubir e Greenleaf, 2006; Saba *et al.*, 2010; Schoormans e Robben, 1997; Silayoi e Speece, 2004; 2007; Tan e Tan, 2007; Underwood *et al.*, 2001; Underwood e Klein, 2002; Wansink e Chandon, 2006).

Nonostante il forte interesse per il tema, l'impatto del materiale del packaging sulla valutazione e percezione del consumatore appare ancora scarsamente esplorato. Gran parte degli studi ha indagato il potere comunicativo e le attribuzioni di valore al prodotto e alla marca evocate da differenti elementi verbali e visuali. Spiccano, per importanza, il colore, la forma, gli elementi grafici e i *claims*. Lo sviluppo tecnologico ha contributo, nell'ultimo decennio, alla individuazione di nuovi materiali e/o combinazioni di materiali impiegabili per la realizzazione di confezioni più performanti in termini di funzionalità, praticità, sicurezza del contenuto e sostenibilità. La letteratura sul materiale si è concentrata su quest'ultimo elemento, vale a dire sulle caratteristiche di sostenibilità e, in particolare, sul confronto tra packaging sostenibili e non. Ciò trova giustificazione nella crescente preoccupazione per l'impatto ambientale della produzione e del consumo dei prodotti sia da parte del consumatore sia da parte dell'impresa (Marthino, 2015). Il primo è diventato più attento nelle scelte di acquisto in conseguenza dell'aumento di consapevolezza che i comportamenti di individuali generano conseguenze collettive negative sulla salute del pianeta (Kilbourne e Pickett, 2008; Shaw e Newholm, 2002). L'impresa, dal suo canto, ha integrato la sostenibilità nella strategia di marketing per rassicurare gli stakeholder con particolare riguardo ai consumatori. Tra queste, rientra anche l'adozione di packaging sostenibili per conservare e proteggere i prodotti. Alla luce dell'interesse del mercato per le confezioni *environmental friendly*,

alcuni autori hanno analizzato la relazione con (a) il processo di valutazione, (b) l'atteggiamento e (c) il comportamento del consumatore sia durante la fase di acquisto sia in quella di smaltimento/riciclo (e.g., Barber, 2010; Magnier e Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015). È emerso, ad esempio, che la percezione di qualità di un prodotto aumenta quando è confezionato in un packaging sostenibile (Magnier *et al.*, 2016). Altri studi si sono concentrati sull'effetto della trasparenza del materiale e, quindi, della possibilità di vedere o meno il prodotto sulla percezione e sulla intenzione di acquisto (Billeter *et al.*, 2012; Chandran *et al.*, 2019; Simmonds *et al.*, 2018; Vilnai-Yavetz e Koren, 2013). In letteratura sono pochi i contributi che hanno indagato la relazione tra il materiale del packaging e il comportamento di consumo. La maggioranza si è concentrata sulla categoria del latte fresco e ha riscontrato la preferenza del consumatore per il vetro e il tetrapak rispetto al cartone e alla plastica (Adam e Ali, 2014; Holliwood *et al.*, 2013; Kariyawasam *et al.*, 2006). Il tetrapak è considerato un materiale sicuro, capace di garantire la purezza del contenuto e facile da maneggiare (Kariyawasam *et al.*, 2006). Il vetro, nonostante faccia registrare l'intenzione di acquisto più elevata (Adam e Ali, 2014), presenta alcuni indubbi svantaggi: la pesantezza e la necessità di lavaggio prima dello smaltimento (Kariyawasam *et al.*, 2006). Più di recente, Luceri *et al.* (2020) hanno indagato il giudizio di qualità e l'intenzione di acquisto dei consumatori rispetto a due specifici materiali di confezionamento dell'olio extravergine di oliva: tetrapak e vetro. I risultati evidenziano che l'atteggiamento verso il prodotto e la valutazione in termini di qualità e rischio percepiti sono peggiori nel caso della confezione in tetrapak e si traducono in una minore intenzione di acquisto e disponibilità di spesa.

Alla luce di quanto emerso dalla letteratura, il presente studio intende arricchire la conoscenza sul ruolo del materiale del packaging al fine di fornire indicazioni utili per le politiche di marketing delle imprese. L'obiettivo è di indagare se e come differiscono la percezione e la valutazione del consumatore, oltre che l'intenzione di acquisto rispetto a prodotti confezionati con diversi materiali. Si pone, pertanto, il seguente quesito di ricerca:

QR: Il materiale del packaging esercita un'influenza sulla percezione e valutazione del prodotto da parte del consumatore, nonché sull'intenzione di acquisto?

Per rispondere al quesito di ricerca sono state indagate le dimensioni che la letteratura propone come rilevanti nel processo decisionale di acquisto del consumatore: atteggiamento verso il prodotto, rischio percepito, qualità percepita, intenzione comportamentale.

L'atteggiamento rappresenta la valutazione più o meno favorevole di un individuo nei confronti di un oggetto, un evento o un comportamento (Ajzen e Fishbein, 2005); è generato dall'apprendimento e influenzato sia dall'esperienza personale sia dagli stimoli delle imprese (Wang e Heitmeyer, 2006). Nella presente ricerca il materiale del packaging è classificato, al pari degli altri elementi, come leva di marketing in grado di influenzare l'atteggiamento del consumatore nei confronti del prodotto.

Il rischio percepito è il grado in cui gli individui avvertono l'incertezza e le conseguenze associate alle loro azioni, tanto su un piano razionale e oggettivo quanto su un piano emozionale e soggettivo (Bauer, 1960). Si tratta di un processo cognitivo che ha ricevuto grande attenzione in virtù del ruolo cruciale che svolge in diversi contesti, compreso quello decisionale di acquisto (ad es., Hunter-Jones *et al.*, 2008; Kwun e Oh, 2004; Liao *et al.*, 2010; Pavlou, 2003; Stone e Grønhaug, 1993). Scelte foriere di rischi potenziali possono, infatti, orientare negativamente i comportamenti degli individui (e.g., Keil *et al.*, 2000; Nicolaou e McKnight, 2006).

La qualità percepita misura il giudizio del consumatore sull'eccellenza e/o la superiorità complessiva del prodotto (Anselmsson *et al.*, 2007). La letteratura di marketing ha evidenziato che l'aspettativa di qualità associata a diverse alternative è un fattore importante nel processo di scelta (e.g., Narasimhan e Sen, 1992; Steenkamp, 1989; Steenkamp e Van Trijp, 1996). Inoltre, quando le informazioni sulla qualità del prodotto sono difficili da ottenere, gli attributi del packaging vengono utilizzati come *proxy* (Ampuero e Vila, 2006; Insch e Florek, 2009; Honea e Horsky, 2012; Venter *et al.*, 2011). In virtù di tali considerazioni, se una percezione elevata di rischio rispetto all'uso di un

prodotto confezionato in un particolare materiale diminuisce l'intenzione di acquisto, la qualità percepita può agire nella direzione contraria favorendo il processo di scelta.

L'ultima dimensione considerata nel presente studio è rappresentata dall'intenzione comportamentale declinandola in intenzione di acquisto e disponibilità a pagare.

3. Metodologia

È stato condotto uno studio sperimentale *between subject* 4 x 3 con quattro livelli di categoria di prodotto (latte, olio extravergine di oliva, passata di pomodoro e succo di frutta) e tre livelli di tipo di materiale (vetro, tetrapak, plastica/latta). Per ogni categoria sono stati realizzati un brand di fantasia al fine di controllare il potenziale *bias* derivante dalla familiarità con il brand e tre alternative di packaging i materiali individuati. Specificamente, si tratta della plastica, del vetro e del tetrapak per il succo di frutta e il latte; per la passata di pomodoro e per l'olio extravergine di oliva è stata impiegata la latta al posto della plastica. Combinando la categoria di prodotto con il tipo di materiale sono stati realizzati dodici stimoli sperimentali (Figura 1) attraverso un software di packaging design, ognuno sottoposto a un solo gruppo sperimentale.

Fig. 1: Stimoli sperimentali

Fonte: ns. elaborazioni

In totale 270 soggetti (30% maschi e 70% femmine, con età media pari a 30.9 anni), equamente e casualmente distribuiti tra le condizioni sperimentali nonché bilanciati per genere ed età, hanno preso parte alla ricerca. Durante la fase di reclutamento sono state rilevate le caratteristiche socio-demografiche e la frequenza di acquisto delle categorie di prodotto oggetto di studio da parte dei

partecipanti; questa informazione ha consentito di selezionare, per ogni gruppo, solo soggetti acquirenti della categoria. Inoltre, al fine di controllare l'eventuale *bias* derivante dalla predisposizione verso la sostenibilità e la salvaguarda ambientale, ai soggetti è stata somministrata la scala di De Magistris e Gracia (2008), composta da cinque item, per misurare l'atteggiamento verso l'ambiente (Alpha=0.908). Il test non parametrico U di Mann-Whitney per il confronto tra medie non ha rilevato differenze significative tra i gruppi sperimentali relativamente a ciascuna categoria di prodotto (p>0.05).

Lo studio è stato condotto in laboratorio. Ogni partecipante è stato accolto nella stanza, informato sulle modalità di svolgimento e fatto accomodare a una scrivania dotata di computer per la somministrazione a video degli stimoli sperimentali. Successivamente, ciascun soggetto ha compilato un questionario strutturato volto a misurare le variabili di interesse attraverso scale validate in letteratura. L'atteggiamento verso il prodotto è stato misurato attraverso sei coppie di aggettivi bipolari su scala a 7 punti (Mueling, Laczniak e Stoltman, 1991). La scala di Jo (2007), composta da cinque item, è stata impiegata per quantificare la qualità percepita del prodotto, mentre i quattro item proposti da Keh e Pang (2010) hanno rilevato il rischio percepito. Per l'intenzione di acquisto e la disponibilità a pagare sono state usate le scale di Putrevu (2008) e Konuk (2019), ognuna composta da tre item. Tutti gli item, ad eccezione di quelli relativi all'atteggiamento verso il prodotto, sono stati rilevati su scala auto-ancorata a 7 punti (1=completamente in disaccordo; 7=completamente d'accordo). In Tabella 1 si riportano le scale impiegate per i costrutti indagati e i relativi indici di affidabilità interna (α di Cronbach).

L'analisi dei dati è stata realizzata attraverso il software statistico IBM SPSS 25.0.

Tab. 1: Scale di misura e indice di validità interna delle variabili latenti

Variabili latenti	**Items**	**α di Cronbach**
Atteggiamento verso il prodotto (Mueling, Laczniak e Stoltman, 1991)	Disgustoso - Gustoso Insoddisfacente - Soddisfacente Indesiderabile - Desiderabile Non di qualità - Di qualità Stantio - Fresco Non attraente - Attraente	0.938
Qualità percepita (Jo, 2007)	Il "prodotto X" confezionato nel "materiale X" ha una qualità eccellente Il "prodotto X" confezionato nel "materiale X" sembra affidabile Il "prodotto X" confezionato nel "materiale X" è sicuro Il "prodotto X" confezionato nel "materiale X" ha caratteristiche eccellenti Il "prodotto X" confezionato nel "materiale X" può darmi un'eccellente esperienza di consumo	0.939
Rischio Percepito (Keh e Pang, 2010)	Il pensiero di acquistare il "prodotto X" confezionato nel "materiale X" mi fa sentire a disagio Il pensiero di acquistare il "prodotto X" confezionato nel "materiale X" mi dà una sensazione di ansia Il pensiero di acquistare il "prodotto X" confezionato nel "materiale X" mi fa provare tensione Il pensiero di acquistare il "prodotto X" confezionato nel "materiale X" mi preoccupa molto	0.935
Intenzione d'acquisto (Putrevu, 2008)	La prossima volta che acquisterò il "prodotto X", prenderò in considerazione il "prodotto X" confezionato nel "materiale X" La prossima volta che prenderò in considerazione l'acquisto del "prodotto X", raccoglierò informazioni sul "prodotto X", confezionato nel "materiale X" La prossima volta che acquisterò il "prodotto X", comprerò il "prodotto X", confezionato nel "materiale X"	0.724
Disponibilità a pagare (Konuk, 2019)	Sono disposto a spendere di più per comprare il "prodotto X" confezionato nel "materiale X" È accettabile pagare un sovrapprezzo per acquistare il "prodotto X" confezionato nel "materiale X" Sono disposto a pagare di più per comprare il "prodotto X" confezionato nel "materiale X"	0.961

Fonte: ns. elaborazioni

4. Risultati

Per rispondere al quesito di ricerca formulato è stato impiegato il test non parametrico U di Mann-Whitney per il confronto tra medie. Nella Tabella 2 sono riportate le medie delle variabili per ciascun materiale per le quattro categorie merceologiche indagate.

Tab. 2: Medie dei costrutti misurati per categoria e per materiale

Costrutti	Materiale	Latte	Succhi	Olio	Passata
Qualità del prodotto	Vetro	22.70	23.15*	21.41*	24.17*
	Tetrapak	20.83	20.05	16.17*	19.96
	Plastica	20.16	18.63*	-	-
	Latta	-	-	19.32	16.62*
Atteggiamento verso il prodotto	Vetro	14.44	28.90	13.32*	14.65
	Tetrapak	15.04	24.00	9.46*	12.90
	Plastica	14.12	26.46	-	-
	Latta	-	-	12.18*	12.86
Rischio percepito	Vetro	7.13	4.50	4.59*	4.57*
	Tetrapak	5.52	4.81	10.17*	7.00*
	Plastica	8.04	4.17	-	-
	Latta	-	-	8.82*	7.52*
Intenzione d'acquisto	Vetro	12.09	13.85*	17.09*	16.26*
	Tetrapak	13.78	14.19*	8.75*	11.96*
	Plastica	12.40	11.13*	-	-
	Latta	-	-	11.50*	11.62*
Disponibilità a pagare	Vetro	12.87*	12.90*	14.00*	13.87*
	Tetrapak	9.65*	8.38*	6.38*	7.68*
	Plastica	6.80*	6.38*	-	-
	Latta	-	-	6.95*	5.10*

*Presenza di una differenza significativa rispetto ad almeno un dei materiali della categoria

Fonte: ns. elaborazioni

Partendo dalla categoria del latte, la disponibilità a pagare è l'unica variabile che risulta influenzata dal tipo di materiale. In particolare, i consumatori sono disposti a spendere di più per il prodotto confezionato nel vetro rispetto al tetrapak (U=166.50, p<0.05) e alla plastica (U=97.5, p<0.05); il tetrapak, a sua volta, rileva una maggiore disponibilità di spesa rispetto alla plastica (U=188.50, p<0.05).

Anche il succo di frutta si caratterizza per una maggiore disponibilità a spendere se proposto in una bottiglia in vetro rispetto al tetrapak (U=108.50, p<0.05) e alla plastica (U=82.00, p<0.05). Quest'ultimo è il materiale per cui si registra la più bassa intenzione di acquisto (*vs* vetro U=148.00, p<0.05; *vs* tetrapak U=145.00, p<0.05). Il vetro raccoglie, infine, giudizi migliori rispetto alla plastica anche per quanto riguarda la percezione di qualità del prodotto (U=150.5, p<0.05).

Le categorie dell'olio extravergine di oliva e della passata di pomodoro sono quelle in cui il materiale del packaging gioca un ruolo più determinante. Per quanto riguarda la passata di pomodoro, il vetro è il materiale che riscuote il maggior successo, con un effetto positivo sull'intenzione di acquisto (*vs* latta U=92.50, p<0.05; *vs* tetrapak U=108.00, p<0.05) e sulla disponibilità a pagare (*vs* latta U=43.00, p<0.05; *vs* tetrapak U=93.50, p<0.05). Contestualmente, anche il rischio percepito appare più basso rispetto agli altri materiali (*vs* latta U=143.00, p<0.05; *vs* tetrapak U=174.50, p<0.05), così come la qualità percepita che è maggiore per vetro rispetto alla latta (U=102.00, p<0.05). Infine, i rispondenti hanno dichiarato una maggiore disponibilità a pagare per la passata di pomodoro confezionata nel tetrapak rispetto a quella in latta (U=148.50, p<0.05).

Anche per l'olio extravergine di oliva il vetro risulta essere il materiale preferito. Al vetro sono associati, da un lato, un minor rischio percepito rispetto alla latta (U=128.00, p<0.05) e al tetrapak (U=101.00, p<0.05) e, dall'altro lato, una maggiore propensione all'acquisto sia in termini di intenzione che di disponibilità a pagare (*vs* latta U=97.50, p<0.05; U=84.00, p<0.05; *vs* tetrapak

U=46.50, $p<0.05$; U=86.50, $p<0.05$). Quando l'olio è offerto nel tetrapak la qualità percepita e l'atteggiamento verso il prodotto peggiorano. Per quanto riguarda la qualità, la differenza appare significativa solo con riferimento al vetro (U=148.50, $p<0.05$), mentre per l'atteggiamento verso il prodotto il test U di Mann-Whitney rileva una differenza nei confronti sia del vetro (U=128.50, $p<0.05$) sia della latta (U=168.00, $p<0.05$).

5. Discussione e conclusioni

Negli ultimi due decenni la letteratura di marketing ha fornito diverse evidenze empiriche del ruolo informativo e di marketing svolto dal packaging. In particolare, dagli studi condotti è emerso come diversi elementi visivi e verbali siano in grado di influenzare il giudizio di qualità sul prodotto e, di conseguenza, orientare il comportamento di acquisto. Ad esempio, la presenza dell'immagine del prodotto sulla confezione comunica informazioni sulla marca e attira l'attenzione contribuendo a formare la sua immagine (e.g., Underwood e Klein, 2002; Underwood *et al.*, 2001). Il colore del packaging incide sulla risposta emotiva del consumatore e sull'intenzioni di acquisto (e.g., Luceri e Zerbini, 2019), mentre i *claim* nutrizionali possono avere un impatto negativo sul vissuto di alcuni attributi del prodotto, come il gusto (e.g., Lähteenmäki *et al.*, 2010; Raghunathan *et al.*, 2006).

Tra gli elementi visivi del packaging il materiale risulta essere quello meno indagato. Se la gran parte della letteratura si è concentrata sugli aspetti legati alla sostenibilità, solo pochi studi si sono proposti di confrontare i diversi materiali di confezionamento per comprenderne l'impatto sul comportamento di acquisto. Da questo gap della letteratura trae spunto il presente studio. In particolare, sono state indagate la percezione e l'intenzione comportamentale dei consumatori rispetto ai diversi materiali con cui sono oggi commercializzate quattro categorie di prodotti alimentari: latte, olio extravergine di oliva, passata di pomodoro e succo di frutta. Dai risultati emerge che il vetro è il materiale con la risposta cognitiva più favorevole, soprattutto in termini di minore rischio percepito associato al consumo e maggiore qualità del prodotto, intenzione di acquisto e disponibilità a pagare. Quest'ultima è più che doppia rispetto agli altri materiali considerati: latta, tetrapak e plastica. L'olio extravergine di oliva, in particolare, è la categoria merceologica che presenta la preferenza per il vetro più marcata. Per il latte, invece, la valutazione della confezione in vetro è abbastanza equivalente a quella degli altri materiali. In generale, la plastica tradizionale non gode di una buona immagine. Probabilmente a causa della forte attualità dei problemi di inquinamento ambientale i consumatori attribuiscono al latte e ai succhi di frutta confezionati nella plastica una bassa qualità percepita e si dichiarano meno disposti sia all'acquisto sia a riconoscere un *premium price*.

La ricerca offre implicazioni sia teoriche sia manageriali. Dal punto di vista teorico, i risultati arricchiscono la letteratura sul ruolo del packaging come strumento di comunicazione mostrando come – al pari degli altri elementi (ad esempio colore, forma, testo e immagini) – il materiale influenza il processo di valutazione e di scelta del prodotto da parte del consumatore.

Dal punto di vista pratico e manageriale, emergono alcune indicazioni utili per le imprese e i *product manager* al fine di supportare le scelte strategiche di marketing con particolare riferimento alla leva del packaging. I consumatori giudicano diversamente i materiali e, di conseguenza, attribuiscono un diverso valore a prodotti identici a seconda di quello impiegato per confezionarli. Di conseguenza, il materiale assurge a elemento *core* nel processo di sviluppo del prodotto. Rispetto a materiali equivalenti in termini di protezione delle caratteristiche organolettiche del prodotto i consumatori maturano una diversa percezione di qualità e affidabilità nonché di intenzione di acquisto. Per esempio, lo studio mostra che i consumatori apprezzano la possibilità di vedere un prodotto alimentare all'interno della confezione e sono disposti a pagare di più per acquistarlo (Sommonds *et al.*, 2018).

L'evidenza di un vissuto diverso dei materiali non deve indurre nell'errore di escludere a priori l'utilizzo di quelli che scontano uno svantaggio in termini percettivi. Il raggiungimento degli obiettivi di marketing passa anche attraverso l'informazione e l'educazione. Quando il consumatore considera solo certi tipi di materiali come lo standard per una determinata categoria vi attribuirà

valore maggiore rispetto a quelli meno utilizzati. La sfida per le aziende è, pertanto, quella di aiutare il consumatore a vincere la resistenza al cambiamento comprendendone le cause. Semplice familiarità con il materiale? Pregiudizio sulle capacità conservative del prodotto? Disinformazione sulle modalità di smaltimento? La risposta a queste domande apre la strada a diverse politiche di marketing.

I risultati del presente studio offrono spunti di ricerca futura. In primo luogo, dal momento che la percezione del materiale di confezionamento appare strettamente correlata alla categoria di prodotto, è opportuno replicare lo studio anche con riferimento ad altre categorie merceologiche alimentari e non alimentari. In secondo luogo, l'impiego di altre tecniche di ricerca – come il focus group o il test di assaggio – consentirebbe di misurare più approfonditamente il percepito dei consumatori rispetto ai materiali, coinvolgendo altri sensi oltre a quello visivo (specificatamente, tatto e gusto).

Bibliografia

ADAM M., ALI K. (2014), "Impact of packaging elements of packaged milk on consumer buying behavior", *IBAICM, International Conference on Marketing*.

AJZEN I., FISHBEIN M. (2005), "The influence of attitudes on behavior" In albarracín d., Johnson B.T., Zanna M.P. (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

AMPUERO O., VILA N. (2006), "Consumer perceptions of product packaging", *The Journal of Consumer Marketing*, vol. 23, n. 2, pp. 102-114.

ANDREWS J.C., BURTON S., NETEMEYER R.C. (2013), "Are Some Comparative Nutrition Claims Misleading? The Role of Nutrition Knowledge, Ad Claim Type and Disclosure Conditions", *Journal of Advertising*, vol. 29, n. 3, p. 29-42.

ANSELMSSON J., JOHANSSON U., PERSSON N. (2007), "Understanding price premium for grocery products: a conceptual model of customer-based brand equity", *The Journal of Product and Brand Management*, vol. 16, n. 6, pp. 401-414.

ASCHEMANN-WITZEL, J., HAMM, U. (2010), "Do consumers prefer foods with nutrition and health claims? Results of a purchase simulation", *Journal of Marketing Communications*, vol. 16, n. 2, pp. 47-58.

BARBER, N. (2010), "Green wine packaging: targeting environmental consumers*", International Journal of Wine Business Research*, vol. 22, n. 4, pp. 423-444.

BAUER R.A. (1960), "Consumer Behavior as Risk Taking", In Hancock R.S. (Ed.) *Proceedings of the 43rd Conference of the American Marketing Association*. (pp. 389-398). Chicago: American Marketing Association.

BILLETER D., ZHU M., INMAN J.J. (2012), "Transparent packaging and consumer purchase decisions", In J. SEVILLA (Ed.), *When it's what's outside that matters: Recent findings on product and packaging design*. PA: University of Pitsborough.

CHANDRAN S., BATRA R., LAWRENCE B. (2009), "Is seeing believing? Consumer responses to opacity of product packaging", In McGill A.L., Shavitt S. (Eds.), *Advances in consumer research*, vol. 36. (pp. 970-971). Duluth, MN: Association for Consumer Research.

DE MAGISTRIS T., GRACIA A. (2008), "The decision to buy organic food products in Southern Italy", *British food journal*, vol. 110, n. 9, pp. 929-947.

FAULKNER G.P., POURSHAHIDI L.K., WALLACE J.M.W., KERR M.A., MCCAFFREY T.A., LIVINGSTONE M. B.E. (2014), "Perceived healthiness of foods can influence consumers' estimations of energy density and appropriate portion size", *International Journal of Obesity*, vol. 38, n. 1, pp. 106-112.

GARRETSON J.A., BURTON S. (2000), "Effects of nutrition facts panel values, nutrition claims, and health claims on consumer attitudes, perceptions of disease-related risks, and trust", *Journal of Public Policy & Marketing*, vol. 19, n. 2, pp. 213-227.

GEORGE J., (2005), "On paper, a world of opportunities", *Packaging World Magazine*, April, p.36.

GORTON D., NI MHURCHU C., BRAMLEY D., DIXON R. (2010), "Interpretation of two nutrition content claims: a New Zealand survey", *Australian and New Zealand Journal of Public Health*, vol. 34, n. 1, pp. 57-62.

HERRINGTON J.D., CAPELLA L.M. (1995), "Shopping reactions to perceived time pressure", *International Journal of Retail & Distribution Management*, vol. 23, n. 12, pp. 13-20.

HOEGG J., ALBA J.W. (2011), "Seeing is believing (too much): the influence of product form on perceptions of functional performance", *Journal of Product Innovation Management*, vol. 28, pp. 346-359.

HOEGG J., ALBA J.W., DAHL D.W. (2010), "The good, the bad and the ugly: influence of aesthetics on product feature judgments", *Journal of Consumer Psychology*, vol. 20, pp. 419-430.

HOLLYWOOD L., WELLS L., ARMSTRONG G., FARLEY H. (2013), "Thinking outside the carton: attitudes towards milk packaging", *British Food Journal*, vol. 115, n. 6, pp. 899-912.

HONEA H., HORSKY S. (2012), "The power of plain: intensifying product experience with neutral aesthetic context", *Marketing Letters*, vol. 23, n. 1, pp. 223-235.

HUNTER-JONES P., JEFFS A., SMITH D. (2008), "Backpacking your way into crisis: an exploratory study into perceived risk and tourist behaviour amongst young people", *Journal of Travel & Tourism Marketing*, vol. 23, n. 2-4, pp. 237-247.

INSCH A., FLOREK M. (2009), "Prevalence of country of origin associations on the supermarket shelf", *International Journal of Retail & Distribution Management*, vol. 37, n. 5, pp. 453-471.

JO M.S. (2007), "Should a Quality Sub-Brand Be Located Before or After the Parent Brand? An Application of Composite Concept Theory", *Journal of the Academy of Marketing Science*, vol. 35, n. 2, pp. 184-196.

KARIYAWASAM S., JAYASINGHE-MUDALIGE U., WEERAHEWA J. (2006), "Assessing consumer attitudes and perceptions towards food quality: The case of consumption of tetra-packed fresh milk in Sri Lanka", In *Selected paper presented at the Canadian Agricultural Economics Society Annual Meeting*, Montreal, Quebec, Canada.

KEH H.T., PANG J. (2010), "Customer Reactions to Service Separation", *Journal of Marketing*, vol. 74, n. 2, pp. 55-70.

KEIL M., TAN B.C., WEI K.K., SAARINEN T., TUUNAINEN V., WASSENAAR A. (2000), "A cross-cultural study on escalation of commitment behavior in software projects", *MIS quarterly*, pp. 299-325.

KELLER K.L. (2009), "Choosing Brand Elements to build Brand Equity", In *Strategic Brand Management* (3rd ed., pp. 187-196). Delhi: Dorling Kindersley.

KILBOURNE W., PICKETT G. (2008), "How materialism affects environmental beliefs, concern, and environmentally responsible behavior", *Journal of Business Research*, vol. 61, n. 9, pp. 885-893.

KWUN J.W., OH H. (2004), "Effects of brand, price, and risk on customers' value perceptions and behavioral intentions in the restaurant industry", *Journal of Hospitality & Leisure Marketing*, vol. 11, n. 1, pp. 31-49.

LÄHTEENMÄKI L., LAMPILA P., GRUNERT K., BOZTUG Y., UELAND Ø., ÅSTRÖM A., MARTINSDÓTTIR E. (2010), "Impact of health-related claims on the perception of other product attributes", *Food Policy*, vol. 35, n. 3, pp. 230-239.

LEWIS, M. (1991), *Understanding Brands*, London: Kogan Page.

LIAO C., LIN H.N., LIU Y.P. (2010), "Predicting the use of pirated software: A contingency model integrating perceived risk with the theory of planned behavior", *Journal of Business Ethics*, vol. 91, n. 2, pp. 237-252.

LIAUKONYTE J., STRELETSKAYA N.A., KAISER H.M., BRADLEY J.R. (2013), "Consumer Response to 'Contains' and 'Free of' Labeling: Evidence from Lab Experiments", *Applied Economic Perspectives and Policy*, vol. 35, n. 3, pp. 476-507.

LUCERI B., VERGURA D.T., ZERBINI C. (2020), "The effect of packaging material on consumer evaluation and choice: A comparison between glass and tetra-pak in the olive oil sector", In: Silvestri C., Piccarozzi M., Aquilani B., *Customer satisfaction and sustainability initiatives in the fourth industrial revolution*, pp. 236-250, Pennsylvania, USA, IGI Global.

LUCERI B., ZERBINI C. (2019), *Teste tempestose. Capire il consumatore: dal comportamentismo al neuromarketing.* Giappichelli Editore, Torino.

MAGNIER L., SCHOORMANS,J. (2015), "Consumer reactions to sustainable packaging: The interplay of visual appearance, verbal claim and environmental concern", *Journal of Environmental Psychology*, vol. 44, pp. 53-62.

MAGNIER L., SCHOORMANS J., MUGGE R. (2016), "Judging a product by its cover: Packaging sustainability and perceptions of quality in food products", *Food quality and preference*, vol. 53, pp. 132-142.

MARTINHO G., PIRES A., PORTELA G., FONSECA M. (2015), "Factors affecting consumers' choices concerning sustainable packaging during product purchase and recycling", *Resources, Conservation and Recycling*, vol. 103, pp. 58-68.

MCDANIEL C., BAKER R.C. (1977), "Convenience food packaging and the perception of product quality", *Journal of Marketing*, vol. 41, n. 4, pp. 57-58.

MUEHLING D.D., LACZNIAK R.N., STOLTMAN J.J. (1991), "The moderating effects of ad message involvement: A reassessment", *Journal of Advertising*, vol. 20, n. 2, pp. 29-38.

NARASIMHAN C., SEN S. (1992), "Measuring quality perceptions", *Marketing Letters*, vol. 3, n. 2, pp. 147-156.

NICOLAOU A.I., MCKNIGHT D.H. (2006), "Perceived information quality in data exchanges: Effects on risk, trust, and intention to use", *Information systems research*, vol. 17, n. 4, pp. 332-351.

ORTH U.R., MALKEWITZ K. (2008), "Holistic package design and consumer brand impressions", *Journal of Marketing*, vol. 72, pp. 64-81.

PAVLOU P.A. (2003), "Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model", *International Journal of Electronic Commerce*, vol. 7, n. 3, pp. 101-134.

PRENDERGAST P.G., PITT L. (1996), "Packaging, marketing, logistics and the environment: are there trade-offs?" *International Journal of Physical Distribution & Logistics Management*, vol. 26, n. 6, pp. 60-72.

RAGHUBIR P., GREENLEAF E.A. (2006), "Ratios in proportion: what should the shape of the package be?", *Journal of Marketing*, vol. 70, n. 2, pp. 95-107.

RAGHUNATHAN R., NAYLOR R.W., HOYER W.D. (2006), "The unhealthy: Tasty intuition and its effects on taste inferences, enjoyment, and choice of food products", *Journal of Marketing*, vol. 70, n. 4, pp. 170-184.

RETTIE R., BREWER C. (2000), "The verbal and visual components of package design", *Journal of Product & Brand Management*, vol. 9, n. 1, pp. 56-70.

RUNDH B. (2005), "The multi-faceted dimension of packaging: marketing logistic or marketing tool?", *British Food Journal*, vol. 107, n. 9, pp. 670-684.

SABA A., VASSALLO M., SHEPHERD R., LAMPILA P., ARVOLA A., DEAN M., … LÄHTEENMÄKI L. (2010), "Country-wise differences in perception of health-related messages in cereal based food products", *Food Quality and Preference*, vol. 21, n. 4, pp. 385-393.

SCHOORMANS J., ROBBEN H. (1997), "The effect of new package design on product attention, categorization and evaluation", *Journal of Economic Psychology*, vol. 8, n. 2/3, pp. 271-287.

SHAW D., NEWHOLM T. (2002). "Voluntary simplicity and the ethics of consumption", *Psychology & Marketing*, vol. 19, n.2, pp. 167-185.

SILAYOI P., SPEECE M. (2004), "Packaging and purchase decisions: An exploratory study on the impact of involvement level and time pressure", *British Food Journal*, vol. 106, n. 8, pp. 607-628.

SILAYOI P., SPEECE M. (2007), "The importance of packaging attributes: a conjoint analysis approach", *European Journal of Marketing*, vol. 41, n. 11/12, pp. 1495-1517.

SIMMONDS G., WOODS A.T., SPENCE C. (2018), "Show me the goods': Assessing the effectiveness of transparent packaging vs. product imagery on product evaluation", *Food Quality and Preference*, vol. 63, pp. 18-27.

STEENKAMP J.B.E. (1989), *Product quality: An investigation into the concept and how it is perceived by consumers*, Wageningen: Wageningen Academic Publisher.

STEENKAMP J.B.E., VAN TRIJP H.C. (1996), "Quality guidance: A consumer-based approach to food quality improvement using partial least squares", *European Review of Agricultural Economics*, vol. 23, n. 2, pp. 195-215.

STEWART B. (2004), *Packaging Design Strategies*, Second Edition. The UK: Pira International Ltd.

STONE R.N., GRØNHAUG K. (1993), "Perceived risk: further considerations for the marketing discipline", *European Journal of Marketing*, vol. 27, n. 3, pp. 39-50.

TAN S.J., TAN K.L. (2007), "Antecedents and consequences of scepticism toward health claims: an empirical investigation of Singaporean consumers", *Journal of Marketing Communications*, vol. 13, n. 1, pp. 59-82.

UNDERWOOD R.L., OZANNE J.L. (1998), "Is your package an effective communicator? A normative framework for increasing the communicative competence of packaging", *Journal of Marketing Communications*, vol. 4, n. 4, pp. 207-220.

UNDERWOOD R.L., KLEIN N.M. (2002), "Packaging as Brand communication: effects of product pictures on consumer responses to the package and Brand", *Journal of Marketing Theory and Practice*, vol. 10, n. 4, pp. 58-68.

UNDERWOOD R.L., KLEIN N.M., BURKE R.R. (2001), "Packaging communication: attentional effects of product imagery", *Journal of Product & Brand Management*, vol. 10, n. 7, pp 403-422.

VENTER K., VAN DER MERWE D., DE BEER H., KEMPEN E., BOSMAN M. (2011), "Consumers perceptions of food packaging: an exploratory investigation in Potchefstroom, South Africa", *International Journal of Consumer Studies*, vol. 35, n. 3, pp. 273-281.

VERGURA D.T., LUCERI B. (2018), "Product packaging and consumers' emotional response. Does spatial representation influence product evaluation and choice?", *Journal of Consumer Marketing*, vol. 35, n. 2, pp. 218-227.

VILNAI-YAVETZ I., KOREN R. (2013), "Cutting through the clutter: Purchase intentions as a function of packaging instrumentality, aesthetics, and symbolism", *The International Review of Retail, Distribution and Consumer Research*, vol. 23, n. 4, pp. 394-417.

WANG Y., HEITMEYER J. (2006), "Consumer attitude toward US versus domestic apparel in Taiwan", *International Journal of Consumer Studies*, vol. 30, n. 1, pp. 64-74.

WANSINK B., CHANDON P. (2006), "Can "Low-Fat" Nutrition Labels Lead to Obesity?", *Journal of Marketing Research*, vol. 43, n. 4, pp. 605-617.