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Growth Strategies & Internationalization for SMEs

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Guest Editors
Michela Matarazzo, Lara Penco and Matthias Raith

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Growth Strategies & Internationalization for SMEs

Selected papers from EURAM Conference, Dublin, December 4-6, 2020 and from Sinergie-Sima Conference, Pisa, September 7 - 8, 2020

Guest Editors

Michela Matarazzo, Lara Penco and Matthias Raith

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Enzo Peruffo - Luca Pirolo - Americo Cicchetti - Silvia Profili
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Aphorisms

1. *A community is like a ship; everyone ought to be prepared to take the helm*
(Henrik Ibsen)
2. *When spider webs unite, they can tie up a lion*
(Ethiopian Proverb)
3. *When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong*
(Arthur C. Clarke)
4. *The tactful aspect of audacity is knowing to what extent one can go too far*
(Jean Cocteau)
5. *What you think is the summit is only a step up*
(Lucius Annaeus Seneca)

Un ricordo di Franco Fontana

Matteo Caroli - Paolo Boccardelli - Raffaele Oriani

Luca Giustiniano - Enzo Peruffo - Luca Pirolo

Americo Cicchetti - Silvia Profili - Marco Recchioni

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Un ricordo di Franco
Fontana

Entrasti da professore ordinario alla Luiss alla fine degli anni '80; una delle prime chiamate di punta dell'ambizioso programma di rafforzamento dell'università voluto dall'allora presidente Guido Carli.

Ti venne dato l'obiettivo di sviluppare il filone degli studi sulla gestione e l'organizzazione d'impresa. Hai fondato quella Scuola, riempiendola di allievi, molti dei quali sono oggi in ruoli importanti nella tua stessa università, o si fanno valere in Italia o all'estero. Ti occupasti poi di sviluppare l'offerta formativa e il potenziamento della Facoltà di Economia. Gestitisti tu, dal lato accademico, l'operazione delle "borse Amici della Luiss", istituite per far crescere all'interno giovani di belle speranze che sarebbero poi potuti divenire accademici di "scuola" Luiss.

L'altro grande progetto in cui fosti coinvolto fu il lancio dell'offerta di master e corsi post-laurea; già da tempo, la Bocconi aveva lanciato con forza la sua "Scuola di direzione aziendale", e in Italia, la domanda stava per esplodere. Divenisti rapidamente il leader operativo della Scuola di Management, (che poi sarebbe divenuta Luiss Management e oggi si chiama Luiss Business School); nel 1990 lanciasti la prima edizione del "Master in Business Administration".

Eri in facoltà da relativamente poco tempo, quando la Luiss fu attraversata da cambiamenti significativi. Alcuni grandi nomi lasciarono; il rettore Scognamiglio per la politica; Mario di Lazzaro, Carlo Caramiello prematuramente scomparsi; il Presidente Guido Carli morì nel 1993. La nostra università era pronta alla sfida di divenire una delle prime in Italia. Sei stato il protagonista indiscusso di quella sfida che la Luiss ha vinto, compiendo la sua prima grande trasformazione positiva. Proprio in quegli anni, infatti, ti venne affidata la direzione della Scuola di Management e di lì a poco fosti nominato Preside. Ti trovasti, quindi a guidare da un lato, la Facoltà che già allora attraeva la netta maggioranza degli studenti. Dall'altro, la struttura che aveva il potenziale di divenire un importante amplificatore di programmi della Luiss nel mondo delle imprese, oltre che un forte generatore di valore economico, come infatti è poi diventata. Un carico di lavoro enorme. Lo hai assolto con risultati eccellenti; quei risultati che sono stati la base per il grande slancio che stiamo vivendo.

Hai avuto una visione culturale; culturale, prima che tecnico-amministrativa, della nostra Facoltà, oggi Dipartimento e della Business School. Hai ideato tutti i percorsi formativi e li hai saputi far evolvere, unendo la tua personale competenza alla capacità di recepire stimoli e indicazioni, soprattutto dal mondo delle imprese e delle istituzioni. Chi

partecipò a quel lavoro, poté comprendere come è leader colui che unisce il guardare lontano con il saper compiere il lavoro quotidiano, occupandosi anche delle questioni minute, apparentemente banali.

Hai lavorato, lavorato, e ancora lavorato. Hai anche fatto lavorare molto chi ti stava intorno; ma anzitutto, lavoravi tu personalmente; fedele al principio che l'esempio viene dall'alto. Le luci della tua stanza in palazzina a viale Pola rimanevano accese fino a tarda sera e non era raro trovarti il sabato. tu eri il tuo lavoro e il tuo lavoro si modellava sul tuo modo di essere

Per il ruolo istituzionale che avevi, fosti tu a disegnare il primo sistema "3+2" della facoltà di Economia; un'impostazione di grande successo come hanno dimostrato negli anni successivi i numeri delle domande di ammissione in continua crescita. Hai guidato l'ideazione e l'implementazione della grande articolazione dell'offerta post-laurea che, passando attraverso ben tre diversi modelli istituzionali, è arrivata oggi al pieno riconoscimento internazionale.

Nel frattempo, hai anche presieduto il comitato tecnico-organizzatore che creò la facoltà di Economia presso l'Università di L'Aquila e ti sei impegnato per lo sviluppo della prestigiosa Facoltà di ingegneria dello stesso Ateneo. Tributi sentiti e importanti alla tua terra natia, ove fosti a lungo anche Presidente operativo della Cassa di Risparmio di L'Aquila.

Negli ultimi anni della tua gestione, hai accompagnato il complesso processo di internazionalizzazione della Luiss Guido Carli, che ha tra l'altro portato la Business School ad essere formalmente accreditata tra le migliori al mondo. Anche in questo caso, hai offerto una grande lezione umana e professionale: saper passare il testimone quando è necessario per il bene dell'istituzione. In quegli anni, hai avuto modo di compiere la tua ultima grande innovazione organizzativa: l'istituzione del Dipartimento di impresa e management. Fu tua l'intuizione della sua importanza per dare ulteriore spinta alla Luiss come università di eccellenza nella formazione e negli studi manageriali e aziendali. Fu tua la progettazione: gli obiettivi strategici, i contenuti dell'offerta, le aree di sviluppo.

E poi c'è stato il tuo lavoro scientifico. Non è qui il caso di fare l'elenco dei tuoi numerosissimi contributi. Basti citare i due libri "sommi": "Il sistema organizzativo aziendale", e "Lo sviluppo del personale", con la loro visione seminale di strategia e organizzazione interdipendenti e funzionanti sulla base delle persone, delle loro competenze e del modo in cui sono gestite. Sei stato un riferimento in tre settori disciplinari: quello di "Economia e gestione delle imprese", quello di "Organizzazione aziendale" e quello di "Ingegneria economico-gestionale". Hai teorizzato l'interdisciplinarietà e l'hai anche messa in pratica; caso raro nell'Accademia.

Ma il ricordo che lasci va ben oltre quello che hai fatto; è altrettanto vivido per quello che fu tuo modo di essere; per la tua forte empatia con le persone, le più diverse e a prescindere dalla loro posizione. Un'empatia, singolarmente unita ad una burberaggine a tratti proverbiale che ti rendeva davvero unico. Una capacità di comprendere gli individui, le loro potenzialità, come i loro limiti; di capire come valorizzare le prime e non curarsi troppo dei secondi. Con un principio sempre chiaro in testa: "non lasciare nessuno indietro"; premiare chi merita, ma considerare che

in un certo modo, tutti meritano qualcosa, perché ognuno offre un suo contributo.

Hai avuto a lungo ruoli di vertice, anche in grandi imprese e Istituzioni; li hai sempre gestiti nel solo interesse dell'istituzione che te li aveva attribuiti; da "civil servant" come si usa dire. Se non altro, lo dimostra il fatto che, quando lo hai lasciato, sei stato beneficiato, non di incarichi o prebende, ma di una diffusa e profonda gratitudine. Nel lungo tempo in cui sei rimasto alla guida della Luiss Business School e della Facoltà di Economia, quelli che erano vascelli sono diventate corazzate; la nostra Comunità è cresciuta nel numero e nella qualità ed è rimasta coesa.

Dunque, Franco, dirti "grazie" può sembrare banale. Ma qualcuno ha spiegato che la semplicità è il modo migliore con cui si esprimono le più complesse tra le complessità.

Grazie per quello che hai fatto e per l'insegnamento che hai dato non solo con le parole, ma soprattutto con il tuo fare. Grazie per esserti curato di ciascuno di noi; grazie per averci sgridato; a volte, anche mortificato, insegnandoci così a diventare noi stessi.

Grazie per essere stato una persona onesta, giusta e per bene, e un vincente, rimanendo una persona semplice.

Grazie per essere stato un Maestro.

Matteo Caroli
Paolo Boccardelli
Raffaele Oriani
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LUISS Guido Carli - Roma - Italy
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Growth Strategies & Internationalization for SMEs: an introduction to the special issue

Michela Matarazzo
Lara Penco
Matthias Raith
Growth Strategies &
Internationalization for
SMEs: an introduction to
the special issue

Michela Matarazzo - Lara Penco - Matthias Raith

The increasing market globalization and the consequent enlargement of the market borders continues to provide a multitude of growth opportunities to small and medium enterprises (SMEs). These opportunities include but are not limited to the expansion abroad through internationalization strategies. They refer also to the innovation of business models triggered by the fact that the SMEs operate in global sectors, and they can utilize global innovations and digital technologies to compete. The joint pursuit of digitalization and internationalization has proven to be most powerful in facilitating the SMEs growth processes on a global scale. The advantages that accrue to SMEs from the usage of digital technologies go beyond the mere Internet and rest mainly in the possibility to create a deep relationship with international customers, for example through the usage of social networks. This does not necessarily imply that the firms operate in two or more locations through trade, investments, and alliances, since SMEs can keep their location in the home country, while expanding their market borders by serving international customers, developing the global power of the brand and the international corporate image. At the same time they have to face international competitors in their home country as well.

More generally, it is no longer possible to act in the current marketplace without considering the risks and opportunities presented by foreign and/or global competition.

Most of the papers accepted for the EURAM 2020 online Conference “The business of now: the future starts here” (rescheduled as virtual in Dublin, December 4-6, 2020 - Dublin, Ireland) in the Track “Growth Strategies & Internationalization for SMEs” (Special Interest Group: Entrepreneurship) promoted by the Italian Society of Management (SIMA), are focused on these main research streams. The strategic challenges for SMEs were also discussed during the Sinergie-SIMA 2020 Conference “Grand Challenges: Companies and Universities working for a better society” (September 7-8, 2020 - Pisa, Italy).

To acknowledge these research advances, we decided to organize a Special Issue for Sinergie - Italian Journal of Management, in order to propose original contributions to each of the main SMEs’ strategic profiles.

In particular, the special issue partially mirrors the aforementioned scenario including 1) papers that deal with the SMEs growth more specifically in relation to the internationalization strategies and 2) papers in which the SMEs growth strategies are connected to an international management approach required by the current global context made by international customers, global knowledge/technologies, global sector/international competitors.

Focusing on the first research stream, in the current hypercompetitive scenario, SMEs are increasingly facing international challenges like those of larger firms. The international growth strategies for SMEs go well beyond import/export, outward processing figures or even the amounts of Foreign Direct Investment (FDI). The focus of the firm is not only on selling abroad, but also on being international. It concerns the management of all business functions; it extends to various steps and/or to the entire value chain, from operations to marketing, from finance to research and development, from human resources and logistics to supply chain management. International strategies are indeed becoming much more complex than in the past. In this vein, some research questions are solicited:

- How do SMEs cope with uncertainty and risk associated the international process?
- What are the characteristics associated with growth and internationalization strategies of SMEs?
- Which are the prevailing relationships between corporate and subsidiaries within the multinational enterprises?
- Which are the main managerial issues in the multinational enterprises?

Internationalization decisions are typically taken under uncertainty, particularly in the case of entrepreneurial SMEs. The adoption of a global niche strategy is considered a successful mechanism in order to reduce uncertainty. The paper co-authored by *Giovanna Magnani and Antonella Zucchella* proposes a model that explores the relationships among the implementation of a global niche strategy, perception of lower competition, and international performance. Applying structural equation modelling, the model is tested on a sample of 110 Australian entrepreneurial SMEs. The results underline that, in order to reduce uncertainty in the internationalisation process, entrepreneurial SMEs create their own market; moreover, they tend to control manufacturing and technological capabilities, by vertically integrating production processes. In particular, the creation of market spaces and a unique system of offer is associated with lower competition perception and, in turn, a better international performance. The foreign growth seems to be the result of a “customer-driven” approach, aimed to create solutions problem-solving and intense customer interactions, instead of being “country-driven”.

Focusing on innovation management within the international business, the paper co-authored by *Maike Simon and Susanne Royer* analyses the innovation process initiated by subsidiaries within multinational enterprises. Grounding on Schmid et al.’s (2014) process model of subsidiary initiative development, the research is based on a meta-synthesis of ten selected exploratory case studies. The results of the paper suggest that subsidiary-initiated innovation is a time-constrained phenomenon driven by certain types of subsidiaries. Isolated subsidiaries without extensive headquarters’ control tend to be more proactive; a significant role at this stage of the process is played by the ability and the motivation of subsidiary managers. When headquarters identifies an innovative subsidiary, the subsidiary receives more attention at the corporate level and a reverse knowledge transfer starts. In this phase, entrepreneurial subsidiaries come out of isolation and they evolve in terms of their

multinational network position; as a consequence, the “entrepreneurial spirit” decreases. For this reason, this paper can be considered a substantial contribution to the current managerial problems affecting the relationship between the corporate level and subsidiaries within the multinational enterprises, providing recommendations in terms of organisational and communication aimed to accomplish the process of subsidiary initiative development.

The second research stream focuses on the paramount importance of digital technologies and sustainability in designing successful paths of SMEs in an international context. We try to provide some directions for research questions such as:

- How is the digital transformation changing the business model and the internationalization strategies of SMEs?
- What are the major issues and barriers that hinder SMEs high technological product commercialization process? Does Industry 4.0 support or hinder the commercialization of new products?
- To what extent are enterprises conscious of immersive technologies growth strategies? Which are the motivations to adopt Augmented Reality as a smart growth tool in retailing?
- How do SMEs develop an effective business model for tackling sustainable challenges?

It is well known that the digital transformation has revolutionized the way companies conduct business, create relationships with consumers, suppliers, and other stakeholders and foster business model innovation and customer value creation. Literature has highlighted how digital transformation can enhance the creation of international markets, which is an important challenge for SMEs. Digital technologies impact on internationalization of business in two ways: they easily help enterprises show products virtually, avoiding the travel costs e.g. for trade fairs and the physical barriers typical of e-commerce, and they promote enterprises images in international markets.

In this vein, the paper written by *Francesca Serravalle, Milena Viassone and Regine Vanheems*, emphasizes the importance for SMEs to adopt digital growth strategies in order to develop their business. This paper applies a multi-case study methodology based on nine Italian SMEs operating in the furniture and interior design retailing. Although the selected Italian SMEs show a low exposure to the knowledge of technologies and a higher resistance to adopt digital growth strategies in their business, they are aware about the potential of these technologies. Three out of nine are internationalized, and augmented reality helps them in the growth of their international markets. Even though the data were gathered before the COVID-19 outbreak, the authors conclude that SMEs need to embrace tech solutions (such as AR) for their survival and business growth more than ever.

Consistently, the paper coauthored by *Michela Matarazzo, Lara Penco and Giorgia Profumo* investigates the impact of digital transformation on business model innovation (with a focus on the customer value creation) and internationalization in the context of SMEs operating in the Made in Italy sectors. The study is based on a multiple case study research. From

the analysis of three case studies (belonging to fashion, food and furniture industry), the results underline that the investigated SMEs shaped their business model using digital instruments both in the distribution and in the communication phases. In particular, some digital instruments (e.g. social media, augmented reality, chat bot) are applied to the process of consumer value creation, creating new distribution channels and deeper relationships with the existing consumers, such as enlarging the covered markets, also at the international level. Moreover, the results demonstrate that digital transformation may be considered the first driver for the internationalization strategy of SMEs, often characterized by financial constraints and barriers of entry. Web sites and the linkage with global or specialized e-commerce platforms are useful for creating new channels to sell companies' products at the international level; social media can help firms to create connections and interactions with international customers exploring and creating new markets abroad. Although the research is focused only on the relationship with customers, digital technologies help to improve collaborations with foreign distributors, strengthening the relationship among the different actors within the global value chain.

The paper of *Andrea Sabatini, Sara Bartoloni, and Gian Luca Gregori* focuses on a global sector including digitization, internet of things, internet of services and cyber-physical systems labelled as Industry 4.0, which are considered the new main challenge in the current production system. Their study explores how SMEs are managing industry 4.0 new products commercialization. It contributes to the SMEs growth research stream drawing on the new product development literature, more precisely the new product commercialization phase, and the Industry 4.0 literature. This research topic is of particular importance since, despite the growing interest in the academic and managerial literature, firms are struggling to effectively develop and commercialize new products embedding such technologies. Commercializing highly technological products is increasingly relevant as Industry 4.0 brought more complexities into manufacturing and development processes as well as into marketing and sales activities. Therefore, the study posits that embedding Industry 4.0 into new products might bring new challenges in the commercialization phase stimulating SMEs growth. As a matter of fact, to create marketable solutions, firms are asked to develop personalized products that can fit the buyers' manufacturing processes. The study provides an understanding of the several issues and barriers which SMEs face in the New Product Development commercialization process while developing Industry 4.0 products.

The paper co-authored by *Eleonora Annunziata, Francesco Rizzi and Marco Frey* deals with the contribution of SMEs to the development of sustainable innovations by implementing effective sustainable business models, which is another important topic within the field of firms' growth and expansion over time. Indeed, generally firms implementing sustainable innovations have better growth performance than firms that do not pay great attention to this issue. Specifically, the paper aims to investigate the role of innovative sustainable business models in supporting the development of sustainable innovations such as

geothermal heat pumps (GHPs), an attractive and sustainable technology for space heating and cooling. It analyzes how new ways of developing a value proposition, supply chain, customer interface, and financial models are the main strategic tool to contribute to the diffusion of decentralized and sustainable thermal energy supply at the residential and commercial level. The empirical results suggest that companies who want to develop business models for boosting sustainable innovations should identify the peculiarities of selected sustainable innovations and tackle potential issues that can produce opposition to their adoption. Furthermore, companies should identify and potentially acquire internal and external capabilities to support an effective implementation of sustainable innovations without ignoring the availability of their resources. However, this process can be influenced by the size of companies. Indeed, SMEs should assess the external acquisition or internal development of capabilities by considering potential resource constraints.

We hope that the studies selected for this special issue, showing novel approaches and original findings, can provide valuable insights into the challenges facing current entrepreneurial firms and SMEs. We hope that they can stimulate future studies of this important phenomenon which provide a deeper understanding of the growth processes of these firms and the barriers and obstacles they have to overcome to compete successfully in the global marketplace.

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Selected Papers

A model of entrepreneurial internationalisation in uncertain foreign environments: Smaller firms and the global niche strategy

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Abstract

Purpose of the paper: *By proposing a model of SMEs' entry in foreign markets characterised by uncertainty, we test the relationships among the implementation of a global niche strategy, the perception of lower competition, and international performance.*

Methodology: *Hypotheses are tested on a sample of 110 Australian firms by applying structural equation modelling through the PLS-SEM technique.*

Results: *Our results support the idea that entrepreneurial firms need to create their own environment and, at the same time, control it by exerting high levels of control on manufacturing and technological capabilities and by vertically integrating production processes.*

Research limitations: *More samples from more countries would increase the generalisability of the results. The operationalisation of the components of the global niche strategy which resulted as non-significant need further refinement. Longitudinal studies are required to measure the sustainability of the global niche strategy over time.*

Practical implications: *A customer focus instead of a country focus can help manage perceived uncertainty while growing internationally. Furthermore, decision makers should leverage on product uniqueness through a continuous refinement of technology thanks to insourced production processes.*

Originality of the paper. *To date, no study has advanced a model to represent firms' internationalisation by considering a process that starts with the formation of strategic antecedents - here represented by the components of the global niche strategy - of international performance.*

Key words: SMEs; uncertainty; internationalisation; niche; strategy; control

1. Introduction

Uncertainty represents the natural condition in which most business decisions and processes take place. In acknowledging this, the extant literature also shows two major research gaps: first, the concept of uncertainty frequently overlaps with that of risk and their boundaries appear blurred. Second, we know more about the strategies to deal with risk, for example through diversification, coverage, reduction, and so on, than about how to cope with true uncertainty, as defined by Knight (1921). This is even truer in an international business and entrepreneurship setting,

where much attention is on internationalisation decisions, which are typically shrouded in uncertainty (Ghoshal, 1987; Hymer, 1976; Johanson and Vahlne, 1977; Welch and Luostarinen, 1993), particularly in the case of smaller entrepreneurial ventures.

For these firms, entry into foreign markets is a particularly evident case of decision making under uncertainty (Lu and Beamish, 2001; Laufs and Schwens, 2014), being these ventures highly sensitive to external challenges and uncertainties (e.g. Lu, 2002; Schwens *et al.*, 2011). Also, their paucity in (both financial and managerial) resources prevents them from engaging extensively into data analysis and planning activities, which - in some cases - is found to be a successful strategy to revert a situation of uncertainty into a situation of risk (Li *et al.*, 2004; Samiee and Walters, 1990). By adhering to Knight (1921) we refer to *risk* with respect to those situations where the probabilities of outcomes are known, and therefore the decision maker can proceed by computing the expected utility of the alternatives and choose those with the highest value. We define *uncertainty* with respect to those situations where the decision maker is unable to draw the probability distribution of the outcomes of a set of instances and to classify them homogeneously.

In this study we address a research gap in international business (IB) and international entrepreneurship (IE) studies about the successful mechanisms that are adopted by small and medium sized enterprises (SMEs) to cope with Knightian uncertainty, following the call for research by Liesch *et al.* (2011). We test the preliminary results obtained in a previous exploratory multiple case-study on ten Italian entrepreneurial firms (Magnani and Zucchella, 2019) which enabled the identification of a common response of SMEs in relation to managing uncertainty in their internationalisation process, i.e. a global niche strategy, composed of and defined through, a set of specific strategic components. Through the present study we refine the set of Propositions advanced in the exploratory study through a more comprehensive set of Hypotheses to assess the relationships among the global niche strategy and international performance.

According to our results, two strategic components emerged as statistically significant, i.e. “creation of markets spaces” and “control of superior manufacturing and technological capabilities”, and can therefore be considered key components of the global niche strategy. First, with regards to “creation of market spaces”, the relevance of proactive and continual efforts in shaping the environment (Courtney *et al.*, 1997; Cyert and March, 1963) is confirmed. The creation of market spaces and unique systems of offer maintaining product uniqueness over time via a progressive refinement of the latter, is associated with lower competition perception. This implies that foreign growth may be determined by a “customer-driven” approach with problem-solving and intense customer interactions, instead of a “country-driven” one (Prahalad and Ramaswami, 2004; Ranjan and Read, 2016), thus challenging IB and IE literatures that often argue about the reverse. This finding also sheds light on the international marketing standardisation/adaptation debate according to which firms are driven by country-specific strategies of marketing mix adaptation to reduce risk (thus not referring to uncertainty). The firms in our sample do not seem to

follow this “deterministic” logic, instead they pursue customisation, thus focusing on individual niche clients’ requirements, problems and potential needs.

Second, the statistical significance of “control of superior manufacturing and technological capabilities” challenges the IE perspective of entrepreneurial internationalisation as driven and supported by networks (Coviello, 2006; Johanson and Mattson, 1988; Johanson and Vahlne, 2009). In contrast, our SMEs do not seem to rely on networking to cope with uncertainty: their global niche strategy requires a relatively high degree of vertical integration, with continuously improved production processes thanks to capabilities to apply scientific and technological knowledge (Deeds *et al.*, 2000; Scherer, 1965), the accumulation of internal expertise and tacit know-how (Kogut and Zander, 1993; Nonaka and Takeuchi, 1995; Polanyi, 1967). Another key aspect is the development of machinery in-house that, in turn, enables the firm to improve production processes continuously.

A further methodological contribution of the present study to the IB and IE literature about entrepreneurial firms’ strategies to cope with uncertainty in foreign environments lies in its having operationalised the components of the global niche strategy (cfr. Paper supplementary materials).

The paper is structured as follows. First, we build our theoretical background with a review of the strategic responses to risk and uncertainty. Next, we build our research hypotheses based on the literature review and on the results of a previous exploratory study. Then, we present the research design and methodological protocols. Last, we discuss our findings and conclude by illustrating the implications of this work to the relevant literatures, while highlighting the main limitations, thus drawing insights for future research. This contribution also has managerial implications because it highlights some practices that have been successfully adopted to deal with uncertainty, with special reference to the case of small business firms.

2. Theoretical background

2.1 Risk and uncertainty in SME internationalisation

Risk and uncertainty are embedded in the internationalisation process of firms. The IB literature has provided frameworks to introduce risk and uncertainty to the internationalisation process of firms by building on Hymer (1976)’s costs of doing business abroad. The liability of foreignness (Buckley and Casson, 1976; Dunning, 1977; Hennart, 1982) is “the costs of doing business abroad that result in a competitive disadvantage [...] broadly defined as all additional costs a firm operating in a market overseas incurs that a local firm would not incur” (Zaheer, 1995, pp. 342-343). The liability of outsidership (Johanson and Vahlne, 2009) consists in the disadvantages of not being part of the network of relationships of the country the organisation wants to approach. The liability of smallness

refers to constraints for smaller organisations, while the liability of newness (Stinchcombe, 1965) is the propensity of younger firms to “have higher failure rates than their older counterparts” (Baum, 1996, p. 79). The liability of complexity (Zucchella and Servais, 2012) refers to the liability arising from the unpredictability, variety and variability of factors characterising foreign markets with a relevant degree of complexity.

The above liabilities can explain why smaller and younger firms, when entering foreign markets, may be at a special disadvantage both in comparison to local firms and to larger organisations. These conditions also define the context of entrepreneurial internationalisation, i.e. the processes of foreign market entry by smaller and younger independent ventures, as being characterised by uncertainty. Notwithstanding these conditions, a number of these firms successfully internationalises, showing the capacity to cope with uncertainty and thus being highly entrepreneurial. Despite the presence of many studies on SMEs internationalisation and international entrepreneurship, there is still a need to better understand exactly how uncertainty-coping occurs in entrepreneurial internationalisation (Autio, 2017; Liesch *et al.*, 2011).

Building on the Knightian (Knight, 1921) definition of risk and uncertainty, we employ the following definition of *uncertainty in the internationalisation process*, referring to all those features or instances of foreign markets about which the decision maker is uncertain, in the sense that they: (a) are not known or knowable in advance¹; (b) are not known or knowable by the entrepreneur/manager making analogies² to previous market experiences in other countries. Such a definition was tested on the interviewed entrepreneurs during the qualitative exploratory phase.

The IB literature has provided constructs to introduce risk and uncertainty in internationalisation from the perspective of multinational enterprises (MNEs), though often using the two concepts interchangeably (Liesch *et al.*, 2011). Furthermore, both concepts have been prominent since the early emergence of the field.

Among the strategies to cope with uncertainty in internationalisation that have been identified by the literature about the internationalisation process, the role of experiential knowledge is prominent (Johanson and Vahlne, 1977; 2009). According to these authors, entry in foreign markets is influenced by the reduction of uncertainty/risk via experiential learning (and more recently also via *insidership* in networks).

Classic theories of risk diversification assume that types of location specific risk vary based on the kind of foreign direct investments. The risk minimisation hypothesis argues that - other things being equal - firms will prefer to diversify the geographical portfolio of their investments because diversification spreads the risk across product markets (cf. Hitt *et al.*, 1997). Rugman’s risk diversification theory suggested that different

¹ In relation to features, it means that they cannot be known without direct experience in the market; with regards to instances (events) it means that the entrepreneur/manager is not able to assess the distribution of the probabilities of the outcomes.

² With the term analogy we mean that the features or events encountered in previous internationalisation stages are used by the decision maker to draw inferences in newly approached markets.

MNEs may view identical investment opportunities offered by a particular country differently, *inter alia*, according to the distribution of their existing portfolios and their attitudes towards uncertainty (Rugman, 1979).

Specific responses to uncertainty in approaching international markets have been advanced in the literature, and include *avoidance* (Mascarenhas, 1982; Pich *et al.*, 2002), *control* (Allaire and Firsirotu, 1989; MacCrimmon and Wehrung, 1986; March and Simon, 1958), *cooperation* (Miller, 1992; Pfeffer and Salancik, 1978; Vernon, 1983), *imitation* (Aharoni, 1966; Barlow and Wender, 1955; DiMaggio and Powell, 1983; Vernon, 1983) and *flexibility* (Hill *et al.*, 1990; Petersen *et al.*, 2003; Porter, 1985).

In reviewing many of the responses to risk and uncertainty, Liesch *et al.* (2011) propose - in support of Alessandri's (2003) study - that managers tend to use analytical, quantitative approaches in the face of risk, while they shift toward more judgmental approaches and/or relying upon experience under uncertainty.

In International Marketing (IM) studies, strategy in foreign markets often refers to the standardisation or adaptation of marketing mix elements. Some studies have addressed the importance of product strategies, and particularly that of pursuing product uniqueness (Knight and Cavusgil, 2004), and product innovation (Bell *et al.*, 2004) but they have also highlighted the role of customer focus (Wolff and Pett, 2000). Nonetheless, in this literature results are still controversial.

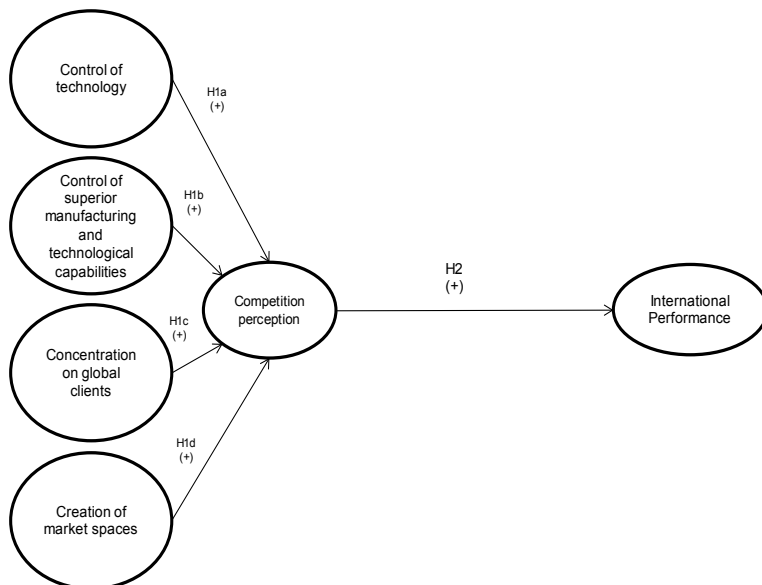
Recently, authors have called for research about the strategies pursued by entrepreneurial firms to internationalise (Autio, 2017; Knight and Liesch, 2016; Love and Roper, 2015) and about their international marketing approaches (Styles and Seymour, 2006; Zou *et al.*, 2015). Analyses at the intersection of the Marketing and Entrepreneurship interface (Fillis, 2001) can improve our understanding of smaller firms' internationalisation.

3. Hypotheses development

A preliminary exploratory multiple case-study on ten Italian entrepreneurial firms (cf. Zucchella and Magnani, 2019) led to the identification of a set of sources of uncertainty - and of a common strategic response to uncertainty in approaching foreign markets. The adoption of a global niche strategy³ (GNS from now on) emerged as a successful mechanism. In this paper we refine and test the model that emerged from the preliminary quantitative study (Figure 1), hypothesising that the use of the global niche strategy can explain lower competition perception and, in turn, international performance, as we explain hereafter.

³ The niche concept is a twofold one: it refers both to (i) the product, and to (ii) customers. Niche customers consist of groups of -either B2C or B2B- customers within the larger marketplace who have similar characteristics, behaviours, and needs. The (global) niche product is typically a very specialised one thanks to an almost never-ending process of improvement. Very high quality, in terms of technology, performance and reliability, are important features, often coupled with intense customer pre- and after-sale service and the possibility of customisation.

Fig. 1: Empirical model: Uncertainty-coping via a global niche strategy



Source: authors' elaboration

The findings of the exploratory study highlighted three strategic components of the global niche strategy, as being positively associated with a lower perception of competition, i.e.: a) the creation of market spaces and unique systems of offer; b) the concentration on horizontal segments of homogeneous clients in different countries; c) the control of technology and manufacturing/technological capabilities.

The “control of technology” GNS strategic component deals with value chain structuring/restructuring decisions. Hence, it entails decision-making about (i) the organisation mode (outsourcing): in-house, versus contract-provider; versus alliance; and (ii) the geography (offshoring) of foreign location decisions due to comparative advantage, market size, cultural distance, institutional environment (Contractor *et al.*, 2010).

In the case of the firms that were analysed in the preliminary exploratory phase, production was often found to be completely vertically integrated. According to respondents, this allows for better industrial processes and component performances vis-à-vis competitors. The interviewed firms did not find technological uncertainty (Eisenhardt, 1989), rather control of technology is the means to reduce environmental uncertainty. This seems to be in contrast with IB literature that stresses enhanced firms’ flexibility as a result of the outsourcing of production (e.g. Buckley and Tse, 1996; Tong and Reuer, 2007). Firms focusing on an internationalisation strategy based on the control of technology will not perceive benefits from outsourcing any part of their production. The amount of tacit knowledge and practices built over time makes it very difficult to transfer or outsource such knowledge. The above considerations lead to the following hypothesis:

H1a. There is a positive relationship between control of technology and the perception of lower competition.

The “control of superior manufacturing and technological capabilities” GNS component refers to manufacturing and technological capabilities being intertwined to successfully combine a unique process of production (Deeds *et al.*, 2000; Scherer, 1965). This is also possible thanks to the development of machinery in-house enabling the firm to further improve production processes continuously. A strong link between technological application and customers’ needs is a critical aspect of the interviewed firms. The constant attention and tracking of customers’ demand and technology application is relatively flexible, and technology itself can undergo steps of incremental development and/or modifications (cf. Fiegenbaum and Karnani, 1991; Swamidass and Newell 1987). The accumulation of expertise and tacit know-how (Kogut and Zander, 1993; Nonaka and Takeuchi, 1995; Polanyi, 1967) in managing production processes is firm-specific and makes it difficult for others to copy the capabilities that embody this knowledge (Yeoh and Roth, 1999), therefore leading to lower competition perception. The above considerations lead to the following hypothesis:

H1b. There is a positive relationship between the control of superior manufacturing capabilities and the perception of lower competition.

With regards to the “concentration focusing on a horizontal micro segment of customers” GNS component, it refers to focusing on a limited number of customers through specialisation, product differentiation, and customer relationship marketing (Dalgic and Leeuw, 1994; Mattiacci, 2000). Niche marketing has been defined as “a method to meet customer needs through tailoring goods and services for small markets”, or “positioning into small, profitable homogenous market segments which have been ignored or neglected by others” (Dalgic and Leeuw, 1994, p 42). Kotler (2003) refers to niche marketing as the practice of focusing on customers with a distinct set of needs who will pay a premium to the firm that best satisfies their needs, where the niche is not likely to attract other competitors, where the niche firm gains certain economies through specialisation, and where the niche is preferably characterised by sufficient size, profit and growth potential. The mentioned definitions imply that there is a small number of customers, plus aspects of tailoring, positioning, differentiating and focusing in a niche market.

In the context of this study we refer to a specific feature that seems to characterise firms’ strategizing while approaching foreign - and especially uncertain - markets. The relationship with global customers is prominent, in that the firm focuses on a process of horizontal micro-segmentation of foreign markets focusing on clusters of homogeneous clients (cf. Zucchella and Palamara, 2006). At the same time market features are not neglected, rather they are reflected in customers’ practices and behaviours. The above considerations lead to the following hypothesis:

H1c. There is a positive relationship between concentrating on horizontal micro-segment of customers and the perception of lower competition.

With respect to the last GNS component, “creation of market spaces”, we refer to the niche strategy’s feature of requiring continual efforts in order to maintain uniqueness over time via a progressive refinement of the

latter or via the progressive development of a portfolio of niche businesses. Creation refers to the shaping of an environment (Courtney *et al.*, 1997; Cyert and March, 1963), through the creation of market spaces and unique systems of offer.

H1d. There is a positive relationship between creating market spaces and unique product/services to offer, and the perception of lower competition.

Overall, the role of competition perception emerged as a relatively evident factor in the exploratory study, where we found that the competitive advantage of the firm is reinforced by the perception of no - or at most very few, and not very dangerous - competitors both in the domestic space and in foreign markets. Building on the contribution by Weerawardena *et al.* (2014), we contend that GNS' strategic components are part of a broader firm's orientation, which is identifiable as a "strategic monopolistic mind-set" made up of control and influence behaviours, leading to the perception of lower competitors (Kim and Mauborgne, 2009) thanks to the niche positioning. In both IE literature (Zucchella and Palamara, 2006; Zucchella *et al.*, 2007) and established research in marketing (Dalgic and Leeuw, 1994; Kotler, 2003; Parrish *et al.*, 2006) a niche strategy is expected to shelter smaller from (larger) thus allowing entrepreneurs to perceive complex business environments as relatively less competitive. According to IB and IE studies (Hennart 2014; Hennart *et al.*, 2017; Mascarenhas, 1999; Zucchella and Palamara, 2006; Zucchella *et al.*, 2007) the perceived competitive space, both in the domestic and foreign markets is a factor that can affect the international performance of the firm thanks to its niche positioning. The above considerations lead to the following hypothesis:

H2: The greater the perception of lower competition in the international environment due to the implementation of a global niche strategy, the higher the international performance.

4. Data and methodology

4.1 Data sources and sample

The mail contacts of the firms that were surveyed in this study were extracted from the Australian Suppliers Directory (Australian Trade Commission, AUSTRADE) during April 2014. The directory contained 9,960 firms: these were small, medium, and large Australian firms that agreed to publicly make available information about their business activity and few mail contacts.

We built a dataset using the above-mentioned directory while looking for a representative sample of Australian firms. Missing contact information led us to end up with a total of 5,170 firms. The sample was random. Firms were sorted by industry; sixteen industries were found (Table 1).

Tab. 1: Sample by industry

Industry	Number of firms	Number of firms (%)
Agribusiness	597	11.5
Arts + Recreation	302	5.8
Building + Construction	376	7.3
Business + Other services	401	7.8
Defence + Security + Safety	241	4.7
Consumer goods, non-food	360	7.0
Education + Training	336	6.5
Environment + Energy	223	4.3
Finance + Insurance	155	3.0
Food + Beverage	400	7.7
Health, Biotechnology, Wellbeing	241	4.7
Tourism + Hospitality	310	6.0
ICT	308	6.0
Manufacturing - other	313	6.1
Mining	301	5.8
Transport	306	5.9
Total	5170	100

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Source: authors' elaboration

4.2 Questionnaire

In order to test the predictions gained through the exploratory qualitative study, we employed a lengthy questionnaire to gather information on variables measuring the perception about the most uncertain countries to be approached in the future, the most relevant sources of uncertainty, the strategies used to cope with uncertainty in the internationalisation process, international performance, and the likeliness of using a global niche strategy. We have pre-tested our questionnaire in two stages. The first wave included five experienced scholars of the University of Queensland Business School and three experienced scholars belonging to the Department of Economics and Management of the University of Pavia. The first stage of pre-testing amongst the University of Queensland and University of Pavia faculty enabled the questions to be substantially improved so that they could be more easily understood by Australian respondents. A second wave of testing was undertaken within a dataset consisting of a random sub-sample of 20 firms.

The final version of the questionnaire was repeatedly sent online in four waves of follow ups between May 2014 and February 2015. The online software platform that was used to send the survey was *Qualtrics*. We ended up with 110 responses, corresponding to a 2.1% response rate. In general, international mail surveys to business firms have a history of very low response rates. For regular mail surveys without a telephone follow-up/pre-contact, response rates typically vary between 6% and 16% (cf. e.g. Ghoshal and Nohria, 1993; Jobber and Saunders, 1988). The fact that we got an even lower response rate may be ascribed to the fact

that the questionnaire, was sent under the name of an Italian university rather than an Australian one and that it was rather long, requiring at least 20-25 minutes to be completed. Nonetheless, the absolute number of responses, i.e. 110, was considered sufficient to run statistical analyses with a structural equation modelling technique. (Hair *et al.*, 2012) (see also our analytical approach section further on).

Tab. 2: Summary of indicators for measurement model constructs

	Control of technology (CTECH) (<i>formative</i>)
ctech_1	Will retain production processes in the home country without relying on external providers or alliances with other firms in the home country itself
ctech_2	Will retain production process in the home market as a deliberate decision overriding cost-efficient advantages in relocating production abroad
ctech_3	The two above allow us to carry out better industrial processes and component performances
	Control of superior technological and manufacturing capabilities (CAPA1)
capa1_1	Constantly applying technology excellently
capa1_2	Constantly improving production processes
capa1_3	Appointing highly qualified human resources
capa1_4	Accumulating expertise in managing process and tacit know-how
capa1_5	Monitoring customers' needs and developing technological improvements
	Control of superior technological and manufacturing capabilities (CAPA2) (<i>formative</i>)
capa2_1	We apply technology with excellence
capa2_2	We constantly and continuously improve production processes
capa2_3	We employ highly qualified human resources
capa2_4	We accumulate expertise in managing processes and tacit know-how
capa2_5	Customers' needs are constantly monitored to develop technological improvements
	Concentration on horizontal micro-segments of clients (HORCLI) (<i>formative</i>)
horcli_1	Consists in planning in advance which countries to enter based on country-characteristics such as culture
horcli_2	Focuses on customers that share the same characteristics globally
horcli_3	Consists in prioritizing countries where there are customers with similar characteristics
deepniche_1	The quality of our product is unique compared to competitors' products
deepniche_2	Our product is of a higher quality than competing products/services
	Creation of market spaces and unique product/service (WIDENICHE) (<i>formative</i>)
wideniche_1	Our product's technology is constantly refined both in terms of performance and design
wideniche_2	Over time we have been developing a number of related niche businesses connected to our technological platform and competencies
	Competition perception (BLUE1) (<i>formative</i>)
blue1_1	Overall, how much you think the above 5 factors (viz those mentioned in the previous question) are important to achieve competitive advantage in your home country?
blue1_2	Overall, how much do you think the above 5 factors are important to achieve competitive advantage in approaching the targeted countries you nominated?
	Competition perception (BLUE2) (<i>reflective</i>)*
blue2	Overall, how much do you think the above 4 factors in Q23-24 are important for a competitive advantage in entering these markets?
	International performance (PERFINT) (<i>reflective</i>)
perfint_1	Return on assets
perfint_1	Net profit margins
perfint_1	Return on investment

* According to the PLS-SEM theory, one-item constructs are to be understood as reflective (Hair *et al.*, 2014)

Source: authors' elaboration

4.3 Indicators for measurement model constructs

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Table 2 summarises the indicators of our measures and identifies whether they are *reflective* or *formative*. In reflective measurement models, the measures represent the effects of an underlying construct. In formative measurement models, the assumption is that the indicators cause the construct (Hair *et al.*, 2014). Formative indicators, in contrast with reflective ones, are not interchangeable and capture a specific aspect of the construct: therefore, omitting one indicator could significantly alter the construct.

4.4 Controlling for common method bias

In designing the questionnaire, we checked *ex-ante* for common method bias through a *procedural remedy* that consists in allowing the respondent to answer anonymously (Podsakoff *et al.*, 2003). Moreover, we dedicated careful attention to the items' very constructs by keeping the questions as simple, specific, and concise as possible, and eliminating item-related social desirability.

Post-hoc analysis has been undertaken to reduce common method variance by employing the following statistical remedies. This step of the analysis was undertaken using SPSS software. First, we checked for internal consistency - meaning that the items of a scale would all measure the same construct and thus be highly correlated - using Cronbach's alpha (Table 3). The generally agreed upon lower limit of Cronbach's alpha is 0,70, although it may decrease to 0,60 in exploratory research (Hair *et al.*, 2014). We have listed the scores for our variables and how we proceeded below:

- *UNCERTINT* (i.e. *uncertainty in the process of internationalisation*) scored very low Cronbach's alpha (0,118) so we decided to drop this item from our subsequent analyses.
- *CTECH* (i.e. *control of technology*): we can see that Cronbach's alpha was 0,814, which indicates a high level of internal consistency for our scale with this specific sample.
- *CAPA1* (i.e. *control of superior manufacturing and technological capabilities*): Cronbach's alpha was 0,907, which is an excellent score. Moreover, the Cronbach's alpha of the CAPA2 - the 5-point Likert-scale we employed to ask respondents to rate their company's performance, in comparison to the lowest 20% of firms in the industry, and the top 20% of firms in the industry - scored 0,885.
- *BLUE1* (i.e. *competition perception*) scored 0,573.
- *HORCLI* (i.e. *concentrating on global clients*) scored 0,549. At the same time the item-total statistics indicate that if we dropped the first item the Cronbach's Alpha would become 0,780, leading us to drop this item from our analyses.
- *NICHEPR* (i.e. *creation of market spaces and unique product/service*) as mentioned was split into two separate sets of questions in order to measure the extent of a *deep niche strategy* and the extent of the creation of a *portfolio of niches* (i.e. *widening niche strategy*). DEEPNICHE (Q24) scored 0.713, while WIDENICHE scores very low, i.e. 0.212, thus suggesting that we drop this item from the analyses.

Tab. 3: Reliability measures

Variable	Question Number	Cronbach's Alpha	Cronbach's Alpha based on Standardised Items	N of Items
UNCERTINT	Q8	,118	,199	2
CTECH	Q19	,814	,813	3
CAPA1	Q20	,907	,907	5
CAPA2	Q21	,885	,887	5
BLUE1	Q22	,573	,574	2
HORCLI	Q23	,573	,574	2
DEEPNICHE	Q24	,549	,562	3
WIDENICHE	Q25	,212	,225	2
PERFINT	Q29	,953	,953	4

Source: authors' elaboration

4.5 Exploratory factor analysis

We performed an exploratory factor analysis through a principal component analysis using an oblique rotation (we assumed that our factors were correlated) with a criterion of eigenvalue that was greater than 1.0 in order to look for a more parsimonious set of variables. The value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0,626 [a value above 0,6 is acceptable (Tabachnick and Fidell, 2007)], and the result of Bartlett's Test of Sphericity was highly significant ($p < 0.001$) (Table 4), meaning that factor analysis was appropriate.

Tab. 4: Sampling adequacy tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,626	
Bartlett's Test of Sphericity	Approx. Chi-Square	1405,613
	df	456
	Sig.	,000

Source: authors' elaboration

Table 5 shows all of the factors that are extractable from the analysis along with their eigenvalues, percentage of variance attributable to each fact, and cumulative variance of the factor and the previous factors. The first factor accounts for 19,46% of the variance, the second 14,13%, the third 9,68%, the fourth 7,81%, the fifth 7,33%, the sixth 5,94%, the seventh 5,11 and the eighth 4,13%. All the remaining factors are not significant.

Tab. 5: Total variance explained

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Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6,033	19,462	19,462	6,033	19,462	19,462	4,654
2	4,380	14,130	33,592	4,380	14,130	33,592	4,140
3	3,002	9,685	43,277	3,002	9,685	43,277	4,163
4	2,423	7,815	51,091	2,423	7,815	51,091	2,613
5	2,273	7,332	58,423	2,273	7,332	58,423	2,870
6	1,844	5,948	64,371	1,844	5,948	64,371	2,585
7	1,586	5,117	69,488	1,586	5,117	69,488	2,131
8	1,278	4,123	73,611	1,278	4,123	73,611	2,061
9	,991	3,197	76,808				
10	,909	2,931	79,739				
11	,769	2,479	82,218				
12	,668	2,154	84,372				
13	,568	1,833	86,205				
14	,550	1,775	87,980				
15	,514	1,658	89,638				
16	,447	1,443	91,081				
17	,429	1,385	92,466				
18	,360	1,161	93,626				
19	,324	1,044	94,671				
20	,275	,887	95,558				
21	,235	,759	96,317				
22	,197	,636	96,953				
23	,171	,553	97,506				
24	,154	,498	98,004				
25	,145	,468	98,472				
26	,125	,402	98,874				
27	,102	,328	99,201				
28	,095	,307	99,509				
29	,070	,227	99,735				
30	,049	,159	99,894				
31	,033	,106	100,000				
Extraction Method: Principal Component Analysis.							
^a When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Source: authors' elaboration

The component matrix (Table 6) shows the un-rotated factor loadings, i.e. the correlations between the variable and the factor. We suppressed all loadings that were less than 0.40 to remove low correlations.

Tab. 6: Un-rotated component matrix*

	Component							
	1	2	3	4	5	6	7	8
capa2_2	,750							
capa2_1	,747							
capa2_4	,745							
capa2_5	,712							
capa2_3	,698							
wideniche_1	,624							
blue1_2	,578							
blue1_1	,509							
blue2_1	,497		,444					
capa1_2		,711						
capa1_4	-,431	,689						
capa1_3		,634						
ROI	,510	,606	-,406					
capa1_5	-,444	,605						
ROS	,519	,569	-,449					
ROA	,451	,549	-,496					
capa1_1	-,437	,493						
Net profit margins	,496	,534	-,534					
horcli_2			,496				,494	
ctech_1				,755				
ctech_2				,735				
ctech_3				,681				
orgmem_1		,561			,629			
orgmem_3		,518			,614			
orgmem_2					,609			
orgmem_4		,561			,586			
deepniche_1			,440			,586		
deepniche_2			,509			,529		
horcli_3							,605	
wideniche_2								,609
horcli_1								,506

Extraction Method: Principal Component Analysis.
* 8 components extracted.

Source: authors' elaboration

By analysing the component matrix and the rotated component matrix, the factors seemed to confirm that the constructs we were going to use in our subsequent model were relevant (cf. Table 7). A good number of loadings in the matrix suggests positive or inverse relationships above 0,6: the rule of thumb, regardless of whether they are positive or negative, is to consider loadings above 0.6 to be very high (Tabachnick and Fidell, 2007).

Tab. 7: Rotated component matrix (Oblimin rotation method)*

	Component							
	1	2	3	4	5	6	7	8
capa2_4	,870							
capa2_5	,762							
capa2_2	,712							
capa2_3	,700							
capa2_1	,668							
wideniche_1	,508					,401		
blue1_2								
capa1_5		,876						
capa1_4		,861						
capa1_2		,842						
capa1_3		,814						
capa1_1		,797						
ROS			-,929					
ROI			-,920					
ROA			-,911					
Net profit margins			-,897					
ctech_1				,909				
ctech_2				,872				
ctech_3				,749				
orgmem_3					,903			
orgmem_1					,861			
orgmem_4					,826			
orgmem_2					,457			
deepniche_1						,893		
deepniche_2						,790		
blue2_1						,545		
horcli_2							,859	
horcli_3							,831	
wideniche_2								,848
blue1_1								,507
	Component							
	1	2	3	4	5	6	7	8
horcli_1	,412							,482
Extraction Method: Principal Component Analysis.								
Rotation Method: Oblimin with Kaiser Normalization.								
* Rotation converged in 9 iterations.								

Source: authors' elaboration

4.6 Descriptive statistics

According to the Australian Bureau of Statistics (ABS) a small business employs fewer than 20 people. A micro-business has less than 5 employees. Medium-sized businesses have between 20 and 200 employees, and large firms employ 200 or more employees. According to this classification, 23% of the firms in our sample are micro businesses, 39% are small businesses,

31% are medium-sized firms, and 6% are large firms⁴.

The average age of the firms in the sample is 35 years. The oldest was established in 1861, the youngest in 2012. The firms in the sample showed very diverse shares of foreign sales over total sales (cf. Table 8).

Tab. 8: Descriptive statistics

		Unit	Min	Max	Mean	Std. Deviation
Firm specific variables	Number of employees	Log (number of employees)	,00	8,70	2,5840	1,708
	Year of establishment	Number	1858	2013	1984	27,874
	Precocity (years)	Number	0	132	12,26	21,163
	Family business	Binary (1 = yes; 0=no)	0	1	,54	,501
	Private or public	Binary (1 = yes; 0=no)	0	1	,95	,212
	Listed on the stock exchange	Binary (1 = yes; 0=no)	0	1	1,97	,160
	% foreign sales on total sales	Percentage	0	100	37,17	36,172
International performance compounded variable*	ROA	Likert Scale (0-5)	1	5	3,38	1,138
	Net profit margins	Likert Scale (0-5)	1	5	3,28	1,129
	ROS	Likert Scale (0-5)	1	5	3,33	1,101
	ROI	Likert Scale (0-5)	1	5	3,32	1,111
GNS-related variables*	ctech_1	Likert Scale (0-5)	1	5	3,48	1,319
	ctech_2	Likert Scale (0-5)	1	5	3,07	1,319
	ctech_3	Likert Scale (0-5)	1	5	3,53	1,196
	capa1_1	Likert Scale (0-5)	1	5	1,96	1,073
	capa1_2	Likert Scale (0-5)	1	5	2,07	1,097
	capa1_3	Likert Scale (0-5)	1	5	2,33	1,131
	capa1_4	Likert Scale (0-5)	1	5	2,14	1,097
	capa1_5	Likert Scale (0-5)	1	5	1,81	1,109
	capa2_1	Likert Scale (0-5)	1	5	3,84	1,053
	capa2_2	Likert Scale (0-5)	2	5	3,84	,945
	capa2_3	Likert Scale (0-5)	1	5	3,73	,977
	capa2_4	Likert Scale (0-5)	1	5	3,97	,870
	capa2_5	Likert Scale (0-5)	1	5	4,13	,991
	horcli_1	Likert Scale (0-5)	1	5	3,62	1,257
	horcli_2	Likert Scale (0-5)	1	5	3,59	1,116
	horcli_3	Likert Scale (0-5)	1	5	3,51	1,167
	deepniche_1	Likert Scale (0-5)	1	5	3,99	1,121
	deepniche_2	Likert Scale (0-5)	2	5	4,37	,785
	wideniche_1	Likert Scale (0-5)	2	5	4,03	,793
	wideniche_2	Likert Scale (0-5)	1	5	3,81	1,147
Competition perception variable*	blue1_1	Likert Scale (0-5)	2	5	4,27	,782
	blue1_2	Likert Scale (0-5)	2	5	4,22	,727
	blue2_1	Likert Scale (0-5)	2	5	4,19	,766

* See also Paper supplementary materials (published online on www.sijm.it) for constructs' operationalisation

Source: authors' elaboration

⁴ Only 6 firms in our sample are large firms. In the following analyses which were undertaken with SmartPLS software, we did not undertake a multi-group analysis in order to assess the differences between the groups of SMEs and large firms because the software needs at least 11 observations to perform the analysis. Furthermore, the sample of the preliminary exploratory study also included 2 larger firms that were medium-sized firms that could become micro-multinationals over time (see Magnani and Zucchella, 2018).

For the present study we adhered to the definition used by Zucchella, Palamara, and Denicolai (2007), where they refer to precocity as the starting point in time of international activities. We built a variable (PRECO) to measure precocity, which is the difference between the company's year of establishment and its first year of international activity. 20% of the firms in our sample began to export within their first year of their foundation; 27,6% went international between the second and sixth year of establishment, while the rest of the enterprises took between 7 and 132⁵ years to go international. An interval ranging between 1 and 10 years from the year of foundation to go international is a reasonable span of time to consider a firm born global" (Knight and Cavusgil, 2005). According to the latter definition, 47,6% of the firms in the sample were born global.

51% of the firms in the sample were family businesses, 91% were privately owned. Of the remaining 9% of public owned businesses, 1,8% was listed on the stock exchange.

63% of the respondents reported that they were "partially or wholly responsible for their firm's internationalisation in the past", and 67% that "they will be in part or wholly responsible for their firm's internationalisation plans in the future". With respect to respondents' prior experience, roughly 13,5% of the respondents had 20 years of experience in exporting. 10,5% had respectively between 10 and 17 years of experience in their current position in the firm.

We analysed our variables and indicators to see the percentage of missing values and applied mean value replacement for variables/indicators with less than 5% of missing values (apart from family businesses, private or public businesses and those listed on the stock exchange, which were dummy variables), and case-wise deletion for those with more than 5% of missing values as suggested by Hair *et al.* (2014). Distributional assumptions are of less concern in PLS-SEMs analyses because of their non-parametric nature.

4.7 Analytical approach

We estimated our model by using a structural equation modelling technique - partial least squares (PLS) (Wold, 1982). PLS is a second-generation multivariate analysis technique and a powerful tool in the estimation of models with formative indicators (Hair *et al.*, 2012), small sample sizes and non-normal data (*ibid.*). It is also a powerful tool for international business and marketing-related studies (Richter *et al.*, 2016).

In relation to the sample size, our looks appropriate according to the guidelines by Marcoulides and Saunders (2006) recommending at least 100 observations when a maximum of 10 arrows points at a latent variable in the model (as in our case).

Moreover, the PLS technique is appropriate when the theory is insufficiently grounded and for exploratory studies, as well as when the goal of the research is prediction and not model fit. The use of this methodology

⁵ There were two very old firms in the sample whose year of establishment is respectively 1858 and 1861 and that took 116 and 132 years to start their first international activity.

has been proven in previous international management literature (Acedo and Jones, 2007; Holzmüller and Kasper, 1991; Stottinger and Holzmüller, 2001). We used the SmartPLS software.

We undertook a two-stage process, firstly assessing the reliability and validity of our measurement model, and secondly assessing the structural model itself. In relation to the evaluation of formative constructs, the main issue is that of multicollinearity (Diamantopoulos and Winklhofer, 2001). We thus calculated the variance inflation factors (VIF): values lower than 5 indicate that there are no collinearity issues (Belsley, 1991) (Table 9).

Tab. 9: Formative constructs' reliability evaluation

Construct	Indicator	Collinearity statistic (Variance Inflation Factor)*
BLUE1	blue1_1	1,189
	blue1_2	1,226
BLUE2	blue2	1,135
CAPA1	capa1_1	2,354
	capa1_2	2,825
	capa1_3	3,114
	capa1_3	3,583
	capa1_4	3,382
CAPA2	capa2_1	3,034
	capa2_2	2,601
	capa2_3	2,355
	capa2_4	2,874
	capa2_5	1,996
CTECH	ctech_1	2,262
	ctech_2	1,989
	ctech_3	1,561
DEEPNICHE	deepniche_1	1,614
	deepniche_2	1,635
HORCLI	horcli_1	1,029
	horcli_2	1,705
	horcli_3	1,736
WIDENICHE	wideniche_1	1,133
	wideniche_2	1,024

* VIF were calculated by taking the first formative indicator and regressing it over all the remaining indicators of the same construct

Source: authors' elaboration

With regards to reflective measures - represented by the constructs PERFINT, BLUE1, and BLUE2 in our measurement model - we assessed (i) individual items reliability (ii) construct reliability, (iii) convergent validity, and (vi) discriminant validity.

Individual reliability was assessed by checking whether the factor loadings on its construct were greater than 0.7 (Carmines and Zeller, 1979). Construct reliability was assessed using composite reliability (CR), a cut-off value which is suggested in the literature to be at 0,7 (Nunnally, 1978). Convergent validity was assessed by calculating average extracted

variance (AVE) (Fornell and Larcker, 1981). AVE values were greater than 0.5 (ibid). Discriminant validity was assessed by checking that the diagonal elements were greater than the off-diagonal elements (Barclay *et al.*, 1995). Table 10 shows that our reflective measures are consistently reliable.

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Tab. 10: Construct reliability - reflective measures

Construct	Indicator	Factor loading	Composite reliability (CR)	Average variance extracted (AVE)
PERFINT	Net profit margins	0,929	0,966	0,875
	ROA	0.918		
	ROI	0,944		
	ROS	0,951		
BLUE1	blue1_1	0.704	0,778	0,539
	blue1_2	0.749		
BLUE2	Blue2	0,750		

Source: authors' elaboration

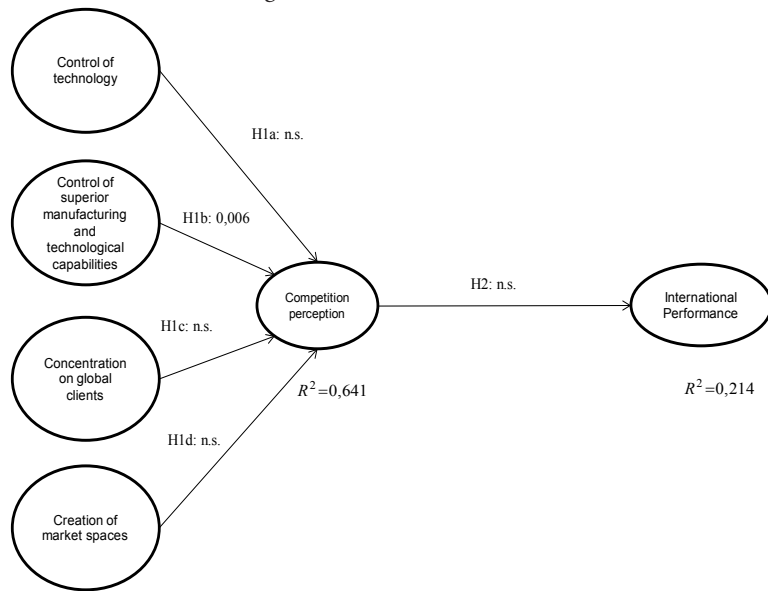
5. Results and discussion

The statistical significance of the structural model was assessed by using bootstrapping procedures with the replacement of 2,000 samples. Figure 2 is a graphical representation of the path coefficients (β), the significance level of each relationship and the explained variance (R^2). Competition perception and international performance respectively explain 64,1% and 21,4% of the variance in the model.

Results of the path analysis were obtained by extracting T Statistics values from the Path Coefficients table [(at least $t > 1.96$) in order to meet .050 significance level (Chin, 1998)], and demonstrate that Hypotheses H1b and H1d are confirmed by the model (Table 11). Two clear determinants of lower perceived competition are control of superior manufacturing and technological capabilities (H1b, $p < .01$), and creation of market spaces (H1d, $p < .001$), while control of technology and concentration on global clients are not indicative of lower competition perception (H1a, H1c). Results moreover indicate that lower competition perception is not related to international performance (HP2). The explanation for this result may lie in the consideration that not all GNS strategic components - taken together - resulted as significant. In fact, we hypothesised a “compounded” effect of GNS on competition perception and, in turn, international performance (“*The greater the perception of lower competition in the international environment due to the implementation of a global niche strategy, the higher the international performance*”). Therefore, the lack of significance for HP2 can be ascribed to the fact that only two out of four components resulted to be statistically significant. Despite such non-significant relationship, this paper contributes to the extant debate about entrepreneurial internationalisation, being one of the first studies to operationalise the niche strategy and test it on a large sample of SMEs. The strong evidence of two out of four GNS strategic components, i.e. the role of market creation and that of control of technological and manufacturing

capabilities paves the way for more in-depth analyses about niche strategies in international contexts. For instance, departing from this result, future studies may investigate whether there are other strategic aspects that can combine, and that may have an influence on competition perception and international performance. At the same time, the other two GNS strategic components which did not result significant will need further refinement in their operationalisation.

Fig. 2: Structural model: Results



Source: authors' elaboration

Tab. 11: Structural model: Results

	T Statistics	P Values
Competition perception †International performance	0,517	0,605
Concentration on global clients †Competition perception	0,076	0,939
Control of superior manufacturing and technological capabilities †Competition perception	2,776**	0,006**
Control of technology † Competition perception	0,997	0,319
Creation of market spaces † Competition perception	4,014***	0,000***
Creation of market spaces † International performance	0,222	0,824
***p < .001		
**p < .01		
*p < .05		
†p < .1 (two-tailed test)		

Source: authors' elaboration

The creation of market spaces through the offer of unique products seems to represent one crucial aspect of the global niche strategy. Creation refers to the shaping of an environment (Courtney *et al.*, 1996;

Venkataraman *et al.*, 2012; Sarasvathy, 2001; Yang & Gabrielsson, 2017), through the creation of market spaces and unique systems of offer. The high statistical significance of this variable supports the idea that to cope with environmental uncertainty firms need to create the environment, thus influencing markets in a sense by selling niche products. This finding supports the stream of literature about opportunity creation in foreign markets according to which enacted opportunities are “endogenously formed by entrepreneurs seeking to exploit them” (Alvarez *et al.*, 2013, p. 305). This finding is in line with reliance, in smaller entrepreneurial firms, on non-predictive control strategies exercising control over what can be done with the available resources, instead of making a decision based on a given set of predictions and plans (McKelvie *et al.*, 2011; Sarasvathy, 2001; Sarasvathy and Dew, 2005; Yang and Gabrielsson, 2017).

A further implication of this finding is that (global) customers are prominent in firms strategising with country-characteristics that are considered as a consequence of customers’ practices and behaviours. In addition, this finding sheds new light on the international marketing standardisation/adaptation debate according to which firms’ international growth is driven by country-specific strategies of marketing mix adaptation to reduce risk (thus not referring to uncertainty). According to our findings, instead, our firms pursue customisation, thus focusing on individual niche clients’ requirements instead of “generic” country-specific diversities.

The statistical significance of the component “control of superior manufacturing and technological capabilities” confirms that international liabilities can be coped with through the kind of monopolistic mindset hypothesised in our hypotheses development section by exerting high levels of control on manufacturing and technological capabilities by vertically integrating production activities and technological developmental processes. This finding points out that entrepreneurial firms benefit neither from outsourcing nor from offshoring parts of their production, and thus challenges IB literature that suggests an increase in flexibility as a successful response (Buckley and Tse, 1996; Tong and Reuer, 2007) to cope with foreign markets’ uncertainty. For our sampled firms, the amount of tacit knowledge and practices built over time becomes a crucial competitive element that is very difficult to transfer or outsource.

6. Conclusion

This study contributes to research about the internationalisation of entrepreneurial firms (Autio, 2017; Knight and Liesch, 2016; Liesch *et al.*, 2011). Although IE studies have already found that a global niche positioning can explain the internationalisation of smaller entrepreneurial firms (Autio, 2017; Hennart, 2014; Hennart *et al.*, 2017; Knight and Cavusgil, 1996; Madsen and Servais, 1997; Zucchella *et al.*, 2007), this strategy has still not been analysed in depth and operationalised in its strategic components (Magnani and Zucchella, 2019). Furthermore, there have been scant quantitative studies testing this strategy and its components over samples of entrepreneurial firms. First, this study makes

a methodological contribution to these streams of studies by providing an operationalisation of the global niche strategy detailing its strategic components: control, concentration and creation. Second, it provides evidence of the role of two global niche strategy's strategic components, i.e. "creation of markets spaces" and "control of superior manufacturing and technological capabilities". This contribution also has managerial implications because it highlights the emerging practices and attributes of a strategy that is used by our sampled firms in their process of foreign expansion. Entrepreneurs and managers planning to approach international markets that exhibit sources of uncertainty should leverage on the continuous refinement of technology and explore the benefits of applying the same technology to a wider series of products. Furthermore, it is possible to control technological development by insourcing production processes. Fast, perceived uncertainty may be mitigated by focusing on customers that globally share the same characteristics and applying a customer-focus, instead of a country-focus, approach based on generic country-specificities.

Although some of the findings of this study are interesting, our research suffers from some limitations that pave the way to future research. First of all, more samples from more countries would increase the generalisability of the results. Second, the operationalisation of the components of the global niche strategy (control of technology and concentration on global homogeneous clusters of clients) that resulted as non-significant will need further refinement. Third, more extensive and cross-country samples are needed to test the strategy in different contexts. Finally, there is place for a longitudinal study to measure the effects of the global niche strategy as a whole - and of the creation of market spaces in particular - in a process perspective to understand the sustainability of this strategy over time.

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Breaking the vicious circle of subsidiary isolation: a meta-synthesis of subsidiary initiative-taking

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Abstract

Purpose of the paper: We aim at contributing to the current controversial discussion on the vicious circle of subsidiary isolation. Therefore, we (1) strive for a better understanding of the different stages of initiative undertaking and (2) investigate how subsidiaries can make use of this process to attract HQ attention and break out of isolation.

Methodology: Building on Schmid et al.'s (2014) process model of subsidiary initiative development, we adopt a meta-synthesis as our research strategy and combine and interpret the findings from a set of systematically chosen case studies.

Results: Our findings suggest that the impact of subsidiary characteristics varies considerably over time during the process. For the case of isolated subsidiaries, we adapt Schmid et al.'s (2014) process model and show how an isolated subsidiary can attract HQ attention due to subsidiary initiative taking at the subsidiary level.

Research limitations: The included case studies have not been conducted to answer our research questions and our search strategy may have excluded further relevant studies.

Practical implications: While managers of less-embedded subsidiaries should be aware of possible HQ resistance and show persistence over time, HQ managers should use HQ monitoring and reporting to detect silent, but motivated subsidiaries. Further, HQ managers are challenged to balance their (positive) attention towards subsidiaries.

Originality of the paper: The paper is original in its use of a meta-synthesis that enables a more holistic and finer-grained understanding of subsidiary initiative processes and draws the attention to aspects that are underrepresented in the current body of subsidiary initiative research.

Key words: subsidiary isolation; subsidiary initiative; meta-synthesis; subsidiary entrepreneurship; process model

1. Introduction

Subsidiaries of multinational corporations (MNC) are expected to discover profitable business opportunities due to their embeddedness in host country environments (Dörrenbächer and Gammelgaard, 2016, p. 1250). Thereby they contribute to the global integration of locally embedded knowledge and worldwide learning (Young *et al.*, 2003, p. 36). Their role as “*contributors* to the development of firm-specific advantages”

(Birkinshaw *et al.*, 1998, p. 222) has gained increasing research attention over the past two decades (Schmid *et al.*, 2014; Strutzenberger and Ambos, 2014).

Some subsidiaries do not only substantially contribute to the development of competitive advantage, but also “drive the process through their own initiative” (Birkinshaw *et al.*, 1998, p. 222). Examples for these so-called subsidiary initiatives are new product development or process design projects that lead to change as they are disseminated throughout the MNC network (Strutzenberger and Ambos, 2014, p. 314; Dörrenbächer and Gammelgaard, 2016, p. 1250).

While subsidiary entrepreneurship is generally recognized as of paramount importance for the entire corporation (Schmid *et al.*, 2014 and there cited literature), previous research has shown that subsidiary characteristics determine the degree to which subsidiaries are able and willing to contribute to the knowledge development of the MNC (Schmid *et al.*, 2014; Strutzenberger and Ambos, 2014). More specifically, not only subsidiaries’ embeddedness in external business relationships (Almeida and Phene, 2004; Andersson *et al.*, 2002, 2007; Achcaoucaou *et al.*, 2014), but also their internal network embeddedness (Ciabuschi *et al.*, 2011; Achcaoucaou *et al.*, 2014), which is attached to the power or *weight* of the subsidiary in terms of their strategic significance for the MNC (Andersson *et al.*, 2007; Bouquet and Birkinshaw, 2008b; Ciabuschi *et al.*, 2011; Yamin and Andersson, 2011) as well as their *voice*, can help to capture HQ attention (Bouquet and Birkinshaw, 2008b; Ambos *et al.*, 2010; Gorgijevski *et al.*, 2019).

HQ attention generally appears to be critical to the success of initiative undertaking (Birkinshaw *et al.*, 1998; Bouquet and Birkinshaw, 2008b; Ambos and Birkinshaw, 2010; Bouquet *et al.*, 2016; Conroy and Collings, 2016; ul Haq, 2017; Schweizer and Lagerström, 2019), because the launch of initiatives often requires HQ approval or support in terms of resource remittance (Ambos and Birkinshaw, 2010; Strutzenberger and Ambos, 2014). It is therefore essential that headquarters’ management is aware of subsidiary potential (Birkinshaw *et al.*, 1998, p. 224) to be able to assess the value-creating potential of the initiative for the entire MNE network (Dörrenbächer and Gammelgaard, 2016, p. 1250).

This clearly shows the dilemma faced by isolated subsidiaries that literally lack HQ attention. The purpose of this paper therefore is to shed light on the dilemma of subsidiary isolation that has, despite its theoretical and managerial relevance, so far received only very little research attention (Monteiro *et al.*, 2008; Michailova and Mustafa, 2012).

The dilemma of subsidiary isolation can be illustrated by different roles that subsidiaries of MNCs can adopt: Receptive subsidiaries such as marketing satellites or branch plants are not embedded in the corporate strategic network (Bouquet and Birkinshaw, 2008a). Similarly, so-called “local innovators” (Gupta and Govindarajan, 1991, pp. 774-775) are isolated from the “in-crowd” and do not participate in knowledge-transfer activities within the MNC network (Monteiro *et al.*, 2008), because their knowledge is to a great extent perceived as site-specific and not transferable between countries (Gupta and Govindarajan, 1991, p. 775). Because of

their lack of communication with HQ and peer subsidiaries, such types of subsidiaries do not possess knowledge about the organization, which negatively affects their ability to bring their initiatives forward (ul Haq, 2017, p. 166).

The issue of subsidiary isolation has been subject to some controversy in recent literature: While Bouquet and Birkinshaw (2008a) argue that even low-power receptive subsidiaries “are not held hostage to their situation” (Bouquet and Birkinshaw, 2008a, p. 488) and can, by effort, change their network position, ul Haq (2017, p. 168) claims that isolated subsidiaries are not able to effectively use their voice. Instead, they would be ignored by HQ and “marginalized” from initiative taking trapped in a vicious circle (ul Haq, 2017). This is our starting point that also shows the research gap we address in this paper. By combining and interpreting the results from a set of systematically chosen case studies, we want to contribute to this controversial current discussion and show how taking initiatives helps isolated subsidiaries breaking this vicious circle to eventually change their role.

In this research, we therefore strive for a better understanding of different stages of initiative undertaking and the factors influencing them. On the basis of that, we investigate how subsidiaries can make use of this process to attract HQ attention and break out of isolation. Thereby we aim to contribute to the existing literature on subsidiary initiative (for a detailed literature review see Schmid *et al.* (2014)) by deepening the understanding of the evolution of the role of subsidiaries from internally isolated local innovators and low-power subsidiaries to contributors to knowledge development in MNCs. By bringing together findings from different context-specific investigations, we build on the strength of meta-syntheses to help explain the dynamic relationships among concepts in processes (Finfgeld-Connett, 2018).

The remainder of this paper is structured as follows: First, we briefly describe the subsidiary initiative process, which serves as an underlying skeletal conceptual framework for this paper. Next, we describe and justify our research strategy. We then identify factors that influence each of the process stages. It follows the synthesis of the findings from the included qualitative case studies. The result is a process model of subsidiary evolution that builds on Schmid *et al.* (2014). We conclude the paper after a discussion of the findings.

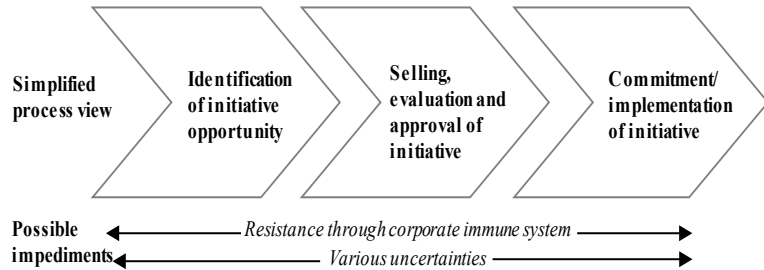
2. Our underlying framework: The subsidiary initiative process

Subsidiary initiative taking can be described as “an entrepreneurial process, beginning with the identification of an opportunity and culminating in the commitment of resources to that opportunity” (Birkinshaw, 1997, p. 207). When investigating such processes, it is useful to start with a conceptualization of the different process phases. We here identified Schmid *et al.*’s (2014) contribution “From rocking the boat to wagging the dog” as a fruitful starting point for our investigation. Based on a comprehensive literature review until 2010, the authors outline in

a convincing fashion a “simplified process view of subsidiary initiative development” (p. 207), which gives us a useful framework for our synthesis.

Schmid *et al.*'s (2014, p. 207) process model differentiates between three stages of the activities reflecting subsidiary initiative: (1) Identification of initiative opportunity, (2) selling, evaluation and approval of initiative, and (3) commitment/implementation of initiative which are affected by “resistance through the corporate immune system” as well as “various uncertainties” as “possible impediments”.

Fig. 1: Schmid *et al.*'s (2014, p. 207) process view of subsidiary initiative development



Source: Schmid *et al.* (2014, p. 207).

After having described our underlying framework, we explain our research strategy to adapt this framework in order to come to a more in-depth understanding of entrepreneurial subsidiary initiatives on the basis of qualitative case study findings.

3. Methods

In this section, we first give an overview of the methodology. We then describe our search strategy and give a summary of the used criteria to select the qualitative studies to be included in our research. Finally, we elaborate data extraction, analysis and synthesis.

3.1 The meta-synthesis as our methodology

Hoon (2013) defines a meta-synthesis “as an exploratory, inductive research design to synthesize primary qualitative case studies for the purpose of making contributions beyond those achieved in the original studies” (p. 523). Meta-syntheses are aiming at building theory.

Theories generated following the meta-synthesis approach help to explain the dynamic relationships among concepts in processes (Fingeld-Connett, 2018). The basis for this lies in the strength of qualitative research to enhance our understanding of contextually embedded phenomena and processes. Among qualitative research methods, the strength of case study research is its capability to generate theory from the in-depth investigation of contemporary phenomena in their real-life contexts (Yin, 2014, p. 18).

Case study research is therefore particularly suited to explore dynamic organizational processes (Pettigrew, 1992) such as subsidiary initiatives that we investigate here.

Qualitative case study research has turned out to be a useful method for theory-building in the fields of international business and strategy, since it is claimed to be “one of the best (if not the best) of the bridges from rich qualitative evidence to mainstream deductive research” (Eisenhardt and Graebner, 2007, p. 25). Indeed, case-based works such as Bartlett and Ghoshal’s (1989) idea of the transnational firm and Birkinshaw’s (1997) observations on subsidiary entrepreneurship constitute landmark contributions to the field of international business.

As opposed to some very influential works, most primary case studies however tend to remain isolated and to “stand-alone” due to the difficulty of the interpretation and generalization of highly contextualized findings. In fact, it is rather the rule than the exception that their potential for theory building in the field is largely neglected (Hoon, 2013, p. 523). By bringing together findings from different context-specific investigations, qualitative systematic literature reviews can enhance generalizability to inform professional practice and policymaking (Finfgeld-Connett, 2010).

In summary, meta-syntheses add clarity and meaning to situations, so that more appropriate decisions and actions can be taken (Finfgeld-Connett, 2018, p. 13). This makes this approach particularly suitable for management research and appears to be an adequate research strategy to come to a better understanding of subsidiaries developing from isolated units to contributors to knowledge development in MNCs through initiative taking.

3.2 Search strategy and sampling as part of our meta-synthesis

To conduct a qualitative systematic review of the subsidiary initiative process, we searched literature in a two-step approach: In a first step, we identified the following key terms: subsidiary initiative, subsidiary innovation, subsidiary entrepreneurship, subsidiary entrepreneurial, entrepreneurial subsidiary, reverse knowledge transfer and combinations such as entrepreneurial behavior AND subsidiary.

We conducted the search in December 2019 using the databases Business Source Complete and Google Scholar in Anne-Wil Harzing’s reference management software Publish or Perish. The literature search in the former was restricted to title, abstract or keywords of peer-reviewed academic journals in English, the latter to titles. We then excluded books, book chapters, theses, conference proceedings and calls for papers in Publish and Perish, downloaded the results of both keyword searches to the reference management software Citavi and removed duplicates (n=139).

In a second step, we used the database Google Scholar to retrieve works citing Birkinshaw’s (1997) article “Entrepreneurship in Multinational Corporations: The Characteristics of Subsidiary Initiatives” (n=1506), as this seminal paper marks the beginning of research on subsidiary initiatives. We searched within citing articles using the search string “case study AND initiative” to optimize the results (n=343) and excluded patents

and citations, books, book chapters, working papers, theses, conference proceedings and non-academic journals (n=231).

We then exported the results of step two to Citavi (n=112), which led to a sample size of 251. Further, we reviewed the papers’ abstracts and excluded 171 articles that were no qualitative case studies. In addition, we excluded papers that belonged to fields such as higher education, economic geography and information systems research as well as articles exploring macro-level processes such as MNE evolutionary upgrading or host-country development, post-acquisition processes and removed duplicates, which brought our sample to 18 studies.

The exclusion of studies ranked C or lower according to both the 2019 ABDC Journal Quality list and the VHB-Jourqual ranking narrowed down the number of articles to our final sample of 10. Such a sample size is the norm rather than the exception when using the meta-synthesis as an underlying research strategy (e.g., Hoon (2013) includes seven studies in her meta-synthesis, Leick and Gretzinger (2018) make use of 13 qualitative case studies in their meta-synthesis).

Table 1 summarizes the inclusion criteria that have been applied to come to the sample of 10 qualitative studies to go into the synthesis with the aim of adapting the theoretical process model developed by Schmid *et al.* (2014) to our purpose.

Tab. 1: Summary of inclusion criteria

Inclusion criteria	
Coverage: Time period	1997 - December 2019
Quality	A*, A-, B- journal publications according to ABDC- and VBH rankings
Research method	Qualitative case studies
Research approach	Exploratory, theory building at micro- and meso levels
Focus	All types of subsidiary initiatives

Source: Own compilation.

3.3 Data extraction, analysis and synthesis

After reading the case studies, we summarized the characteristics of each study (i.e., purpose, perspective, theoretical framework/lens, number of cases and countries included in the study, industry/sector, data source(s), interviewee(s) and number of interviews) in a table (s. Table 2 and Table 3). We then (1) extracted qualitative findings from each study as raw data and (2) developed narrative within-study memos from the data. The memos were coded to the broad categories derived from Schmid *et al.* (2014) “identification of initiative opportunity”, “selling, evaluation and approval of initiative” and “commitment/implementation of initiative”. Cross-study memos were written to synthesize qualitative findings across the set of studies in order to detect patterns across case studies and served for the development of subcategories.

Content validity was ensured by including all qualitative case studies that were systematically identified by conducting a comprehensive

literature search using a range of keywords as well as searching citing works. Eventually, only articles published in peer-reviewed A*, A and B-journals were included into the set of studies. Moreover, this research is subject to data triangulation, which was achieved by synthesizing a set of qualitative case studies from different researchers (Fingeld-Connett, 2018).

This systematic qualitative review comprises a set of 10 qualitative case studies. Sample was varying from 3 to 34 interviewees. Excluding one case study in which sample size was not specified, our final set of case studies included 162 interviews.

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Tab. 2: Set of qualitative case studies: purpose, perspective, theoretical framework/lens, countries and industry / sector

Study	Purpose	Perspective	Theoretical framework / lens	Countries	Industry/ sector
Acquier <i>et al.</i> (2018)	Exploration of the practices that CSR managers from subsidiaries use in order to combine and adapt different approaches to CSR within the MNC	Micro / meso	Institutional perspective	Japan (HQ), EU (subsidiary)	Sports apparel
Boojhawon <i>et al.</i> (2007)	Exploration of entrepreneurial culture within subsidiaries as well as its global and local environmental determinants	Meso	International entrepreneurship & MNC and subsidiary management literatures	U.S. and France (HQ), UK (subsidiaries)	Advertising and marketing communications
Dörrenbächer and Gammelgaard (2016)	Investigation of the political manoeuvring that accompanies subsidiary initiative taking in multinational corporations	Meso	Power, issue selling & subsidiary initiative taking literatures	Germany (HQ), France (subsidiaries)	Manufacturing
Dörrenbächer and Geppert (2009)	Exploration of the role of subsidiary managers in the formation and the negotiation of subsidiary initiatives	Micro	Combination of different streams of literature (strategic and resource-based views, comparative institutionalist approaches, HRM)	Germany (HQ), France (subsidiaries)	Manufacturing & service
Dörrenbächer and Geppert (2010)	Exploration of the personal motives and behaviors of subsidiary CEOs in taking and negotiating initiatives	Micro	Staffing foreign subsidiaries and subsidiary initiative literature	Germany (HQ), France (subsidiaries)	Agricultural equipment & automotive
Hamprecht and Schwarzkopf (2014)	Exploring why subsidiaries of an MNC implement initiatives that deviate from organizational values of headquarters	Meso	Institutional Theory	UK, Spain and US (subsidiaries)	Automotive (car manufacturing)
Nadayama (2019)	Shedding light on how an isolated foreign subsidiary can initiate the internal knowledge transfer within the MNE and overcome the liability of internal isolation	Meso (-micro)	Knowledge transfer, subsidiary isolation and subsidiary initiative literatures	Japan (HQ), Finland (subsidiary)	ICT (manufacturing)
Saka-Helmhout (2009)	Exploration of how the actors' orientation to iterate, apply and project artefacts and the specific coordination structure in which this is embedded influences subsidiaries' learning patterns	Meso	Agency-based view of learning	UK & Germany (HQ), Poland, Italy & Germany (subsidiaries)	Chemical
Tippmann <i>et al.</i> (2012)	Exploration of the micro-level details of managers' actions and interactions	Micro	Non-routine problem-solving perspective	U.S. & EU (HQs), Ireland (subsidiaries)	ICT
ul Haq <i>et al.</i> (2017)	Exploration of the effects of attention dissonance on headquarters-subsidiary communication	Meso	Attention-based view of the firm	Sweden (HQ), emerging markets (i.e. India, Brazil) & advanced markets (Germany, UK): subsidiaries	Manufacturing

Source: Own compilation.

Tab. 3: Set of qualitative case studies: number of cases, data sources, interviewee(s) and number of interviews

Study	No. of cases	Data source(s)	Interviewee(s)	No. of interviews
Acquier <i>et al.</i> (2018)	1	Semi-structured interviews and secondary data such as company CSR reports, CSR team presentations, internal books, previous studies, press articles, industry reports and initiatives (e.g., Sustainable Apparel Coalition).	Key managers, including CSR and senior managers, who possess direct and indirect experience of CSR policy and initiatives	22
Boojihawon <i>et al.</i> (2007)	8	Semi-structured, in-depth interviews and secondary data such as annual reports, company homepages, promotional documents and industry-specific journals and magazines	Senior-level managers with an average of 11 years of employment with the agency, clients and industry experts	18
Dörrenbächer and Gammelgaard (2016)	6	In-depth interviews and secondary data such as annual reports, business directories, company press communiques, press reports and academic case studies	Subsidiary CEOs	1-2 per case
Dörrenbächer and Geppert (2009)	3	Semi-structured interviews and secondary data such as various documents	Subsidiary CEOs	Min. 3
Dörrenbächer and Geppert (2010)	4	Open-ended, in-depth interviews, company profiles and secondary data such as internal company documents, annual reports, press clippings and company handbooks	Subsidiary CEOs and members of the subsidiary management team	9
Hamprecht and Schwarzkopf (2014)	1	Ethnographic participatory observation, interviews, and analysis of document contents	Regional managers	26
Nadayama (2019)	1	Ethnographic fieldwork including participant observation, field notes, meeting documents, diaries, interview transcripts and supplementary documents	Top manager, project manager (subsidiary) and lean manager (HQ)	3
Saka-Helmhout (2009)	2	Interviews, factory tours, annual reports	Executives overseeing international operations at HQs and their counterparts at subsidiaries	31
Tippmann <i>et al.</i> (2012)	38	Semi-structured interviews, archival information	Subsidiary senior and middle managers (home, third and host country nationals)	34
ul Haq <i>et al.</i> (2017)	2	Semi-structured interviews, secondary data sources such as annual reports, company magazines, CEO video messages, templates and examples from the intranet	Representatives from HQs and subsidiary managers	16

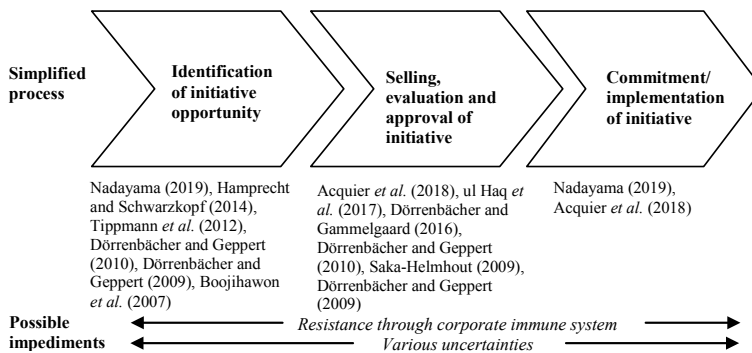
Source: Own compilation.

4. Findings

In the following section, on the basis of our sample of qualitative studies, we first describe the factors and contexts that influence the way (1) opportunities are identified, (2) initiatives are sold, evaluated and approved and (3) initiatives are implemented, before we adapt Schmid *et al.*'s (2014) process model to reach our research aim. Figure 2 assigns the identified qualitative studies to the different stages of the process model.

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Fig. 2: Assigning the set of qualitative case studies to Schmid *et al.*'s (2014, p. 207) process view of subsidiary initiative development



Source: Own compilation based on Schmid *et al.* (2014, p. 207).

4.1 Antecedents to the identification of initiative opportunity

Building on our meta-synthesis approach we elaborate the identified categories from the literature in the following:

External and internal pressures

Typically, subsidiary initiatives are driven by external factors such as pressures or opportunities. The local environment and situation a subsidiary is embedded into impacts opportunities and threats and the respective units react to their circumstances and actions of different stakeholders in a specific way. Host countries' stakeholders include national regulators and non-governmental organizations, but also wholesalers and end consumers, who can put pressure on subsidiaries (Boojihawon *et al.*, 2007; Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018). Competition on local or national markets is also triggering subsidiary initiatives (Nadayama, 2019). Employees who interact with external stakeholders are able to raise issues such as the urgency of climate change issue recognition (Hamprecht and Schwarzkopf, 2014, pp. 765-766).

The emergence of non-routine problems during for example a production process illustrates an internal impulse for subsidiary initiative-taking. Solution-finding activities may also result in the development of superior technological knowledge, which diffuses across the MNC network (Tippmann *et al.*, 2012).

While in the cases of global strategy initiatives such as CSR strategies the identification of opportunities was mainly driven by *external* pressures of the local environment (Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018), technological change also occurred as a consequence of the urgency to respond to *internal* pressures due to the emergence of non-routine problems (Tippmann *et al.*, 2012).

In summary, both external and internal forces can urge the subsidiary to change and therefore are important triggers for subsidiary entrepreneurial activities.

Institutional distance between HQ and subsidiary

The identification of initiative opportunity is also closely related to the degree of institutional distance between HQ and subsidiary. Subsidiary managers decided to proactively engage in (local) initiative-taking when they perceived large regulative, normative as well as cognitive differences between HQ and the host country's institutional contexts (Acquier *et al.*, 2018, pp. 633-634). This included differences between the organizational norms and values of subsidiary and HQ (Hamprecht, Schwarzkopf, 2014, p. 774). Institutional distance also resulted in subsidiary autonomy with low degrees of HQ control, which led to proactive behaviour of subsidiaries and facilitated entrepreneurial behaviour (Boojihawon *et al.*, 2007; Saka-Helmhout, 2009, p. 272). Examples for the quick evolution of distinctive subsidiary capabilities due to large institutional gaps were initiatives to implement global strategies such as CSR- or environmental strategies (Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018), but also to new product development (Saka-Helmhout, 2009).

Though large institutional distance represented a triggering condition for (local) subsidiary initiative, HQ approval and the implementation of subsidiary initiatives at the corporate level required either a framing of the initiative in line with the MNC's organizational values or the incremental alignment of values (Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018). The latter refers to Stage 2 of Schmid *et al.*'s (2014) process model where it is explained in the context of issue framing.

Paradoxically, just as institutional distance influenced opportunity identification, so did acculturation: An omnipresent global vision and control over subsidiaries due to hierarchically structured reporting systems and the delegation of responsibilities were characteristics of so-called headquarter-driven entrepreneurship (Boojihawon *et al.*, 2007). HQ indirectly encouraged subsidiary initiatives by facilitating communication among units due to, for example, the creation of cross-country learning groups (Saka-Helmhout, 2009) and monthly meetings (Boojihawon *et al.*, 2007) or through the provision of documentation on best practices (Nadayama, 2019). Moreover, interpersonal exchanges with parent and sister companies could also help at identifying solution-relevant knowledge across the MNC network (Tippmann *et al.*, 2012).

One way to affect subsidiary initiative-taking behaviour was therefore the configuration of organizational structure (Nadayama, 2019). Especially, flexible organizational structures, which allowed for shifts in accountability were prone to entrepreneurial behaviour in subsidiaries

(Boojihawon *et al.*, 2007). As opposed to this, subsidiary initiatives also arose in unfavourable organizational contexts (Saka-Helmhout, 2009). Knowledge exchange between HQ and sub-units did not automatically lead to subsidiary initiative-taking (Saka-Helmhout, 2009).

Subsidiary managers' individual characteristics

The ability and motivation of subsidiary managers played a significant role in the first stage of the initiative process. Ability comprised the managers' technical expertise which enabled them to discover new lucrative technological solutions tailored towards their assessment of the subsidiary's capabilities (Saka-Helmhout, 2009; Dörrenbächer and Gammelgaard, 2016). Moreover, a thorough understanding of the corporation and its technologies helped in searching for opportunities that addressed multiple requirements and, therefore, could be implemented at a global level (Tippmann *et al.*, 2012).

Motivation was frequently described by some sort of "entrepreneurial spirit", the actors' proactive orientation to search for ideas in the internal MNC network and the external environment, which spurred initiative-taking regardless of size or technological advancement of the subsidiary (Saka-Helmhout, 2009; Dörrenbächer and Gammelgaard, 2016). Some managers consciously envisioned global solutions, proactively assumed responsibility and aimed to add value to the entire corporation (Tippmann *et al.*, 2012). This seemed to be especially true for recently employed managers, who were more prone to ambitious goals that extend far beyond local needs (Dörrenbächer and Gammelgaard, 2016). Such a proactive entrepreneurial behaviour of subsidiary managers was explained by individual interests such as career aspirations and career orientations (Dörrenbächer and Geppert, 2009, 2010).

To sum up, our meta-synthesis approach led to the identification of external and internal pressures, institutional distance and subsidiary managers' characteristics as antecedents to the identification of initiative opportunity as elaborated above.

4.2 Micro-level sub-processes and HQ-subsidiary power relationships in issue selling, evaluation and approval of initiative

In the identified and reviewed literature, issue selling was regarded as a power game (Dörrenbächer and Gammelgaard, 2016), a managerial practice perspective that included the activities that were taken by so-called change agents towards a global strategy implementation (Acquier *et al.*, 2018). Drivers of the subsidiary managers' engagement in negotiating initiative approval were amongst others intrinsic motivation and a personal interest in the evolution of the subsidiary role (Dörrenbächer and Geppert, 2009).

At the micro-level issue-selling is defined as "individuals' behaviours that are directed toward affecting others' attention to and understanding of issues" (Dutton and Ashford, 1993, p. 398). At the subsidiary level, it comprises issue-selling activities such as *attention-attracting*, *lobbying* and *issue framing* that aim at receiving approval for initiatives (Dörrenbächer

and Gammelgaard, 2016; Acquier *et al.*, 2018) and that are elaborated in the following paragraphs based on the qualitative studies included in our meta-synthesis.

Attention-attracting could be both long-term and short-term oriented. Long-term oriented attention-attracting tactics comprised for example image and reputation building activities both at the individual (Dörrenbächer and Geppert, 2009) and organizational level (Dörrenbächer and Gammelgaard, 2016), which were prerequisites to successful lobbying. Several factors had been shown to affect attention-attraction: (1) overall good performance, (2) demonstrating excellence in developing new capabilities, (3) subsidiary's reputation with regard to previous initiatives and image control and (4) avoiding negative attention for example by informing HQ about specific host market characteristics (Dörrenbächer and Gammelgaard, 2016).

Lobbying for initiatives referred to informal mechanisms such as “personal appeals” (Dutton and Ashford, 1993, p. 419) and was successful, when personal relationships among MNC units were available for example through job rotation and internal recruiting and were thereafter cultivated. Moreover, a certain degree of persistence and the integration of powerful internal and/or external parties such as main customers could influence the success of lobbying and led to the approval of the initiative. This political strategy (Dörrenbächer and Geppert, 2010) was captured by the term “resource mobilization” (Dörrenbächer and Geppert, 2009) and not only strongly linked to subsidiary managers' ability in terms of social skills, but also to their motivation due to current career aspirations. Lobbying gained importance, the lower the degree of HQ attention was (Dörrenbächer and Geppert, 2009, 2010; Dörrenbächer and Gammelgaard, 2016).

Issue framing referred to “hybridization work”, which comprised different types of practice and boundary work (Zietsma and Lawrence, 2010; Acquier *et al.*, 2018): Internal and external boundary work helped influencing the headquarters. Intra-organizational boundary work comprised activities such as the appointing of boundary spanners, supporters at top management and the creation of multi-competence teams. Inter-organizational boundary work was targeted to enhancing awareness and internal expertise as well as external support by joining normative initiatives, setting up external partnerships with experts and by extending the initiative's scope from local to global (Acquier *et al.*, 2018). Practice work through reporting and external communication aimed at aligning and at introducing new values and practices (Acquier *et al.*, 2018). Maintenance practice work helped to reduce the institutional distance between different approaches to CSR by connecting the initiative to corporate history and values and include CSR within organizational routines. Renewing practice work included (1) changing normative associations and (2) introducing new issues, routines and competences (Acquier *et al.*, 2018).

Generally, the issue selling process could be described as a time-consuming negotiation process to persuade HQ of the value-adding potential of the initiative. Subsidiaries engaged in issue-framing to formulate an initiative according to HQ's preferences. The issue framing

was crucial to persuade HQ of the initiative's value-adding potential in order to finally get approval to implementation (Tippmann *et al.*, 2012; Hamprecht and Schwarzkopf, 2014; Dörrenbächer and Gammelgaard, 2016).

HQ-subsidiary power relationships influenced the degree of issue-selling. Powerful subsidiaries such as market access providers of strategically important host markets were characterised by less asymmetrical HQ-subsidiary power relationships and therefore, HQ approval required low degrees of issue selling. By contrast, more isolated subsidiaries in highly asymmetrical HQ-subsidiary power relationships must engage in issue selling to receive HQ attention and support (Saka-Helmhout, 2009; Hamprecht and Schwarzkopf, 2014; Dörrenbächer and Gammelgaard, 2016). Especially, HQ attention was regarded as essential for subsidiaries to convince HQ of initiative opportunities (ul Haq *et al.*, 2017).

To sum up, issue-selling strategies might influence HQ decisions to approve the subsidiary initiative. Nevertheless, if subsidiary power was low, even high issue selling efforts were not successful (Dörrenbächer and Gammelgaard, 2016).

4.3 Commitment and implementation of initiative

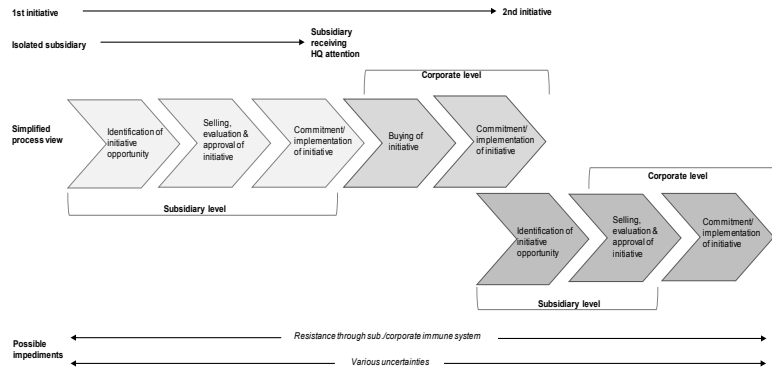
The previous section has shown that issue selling took place gradually, as did the implementation of initiatives (Acquier *et al.*, 2018). In practice, the subsidiary initiative process stages "selling, evaluation and approval" and "commitment and implementation" were interleaved since the initiative process was one of incremental implementation and commitment supported by issue selling tactics. Global subsidiary initiatives therefore were not implemented, but evolved under the influence of extant issue selling tactics (Tippmann *et al.*, 2012; Acquier *et al.*, 2018).

At the corporate level, the previous section has shown that the time to commitment and implementation of initiatives strongly depended on initiative type and its alignment with corporate values. Generally, HQ were more likely to approve, commit and implement initiatives if these fit with the MNC's organizational values. At the subsidiary level, HQ's approval for implementation was not necessarily needed as long as the subsidiary used its own resources. In-house initiative selling activities were crucial in supporting the implementation (Nadayama, 2019).

4.4 Subsidiary initiative in the light of subsidiary evolution

By grouping the identified elements to each of the process stages above, in the following we link these into the adapted model of subsidiary initiative development that builds on Schmid *et al.* (2014). This process is sketched in Figure 3 before it is elaborated in the following paragraph.

Fig. 3: Subsidiary initiative in the light of subsidiary evolution



Source: Own compilation based on Schmid *et al.* (2014, p. 207) and data of the set of qualitative case studies.

In the beginning of the process and until HQ approval, subsidiaries typically lacked HQ support and relied on “own” resources (Saka-Helmhout, 2009; Dörrenbächer and Geppert, 2009, 2010; Hamprecht and Schwarzkopf, 2014; Dörrenbächer and Gammelgaard, 2016). In order to run successfully through the issue selling process, minor and major investments in the development of the initiative were necessary (Saka-Helmhout, 2009; Dörrenbächer and Geppert, 2009; Dörrenbächer and Gammelgaard, 2016). These investments did not only comprise, for example, product trials, but also investments in in-house issue-selling such as cultural trainings of employees to successfully implement the initiative at the subsidiary level (Acquier *et al.*, 2018; Nadayama, 2019).

As the subsidiary evolved over time, this was noticed by HQ due to HQ control and monitoring (Tippmann *et al.*, 2012). From then on, the subsidiary received HQ attention (Dörrenbächer and Gammelgaard, 2016) and HQ attempted “to replicate this “superior” knowledge at other units worldwide” (“buying of initiative”-stage in our model adaptation) (Tippmann *et al.*, 2012, p. 759). As a result, the subsidiary was likely to gain power and as the asymmetry of the HQ-subsidiary power relationship decreased, HQ’s approval of further (second) initiatives required only low degrees of issue selling. At the same time, the subsidiary would lose its “advantage of isolation” (Hamprecht and Schwarzkopf, 2014; Nadayama, 2019).

This process could explain the dual motivation of some subsidiary managers causing an autonomy-control dilemma (Nadayama, 2019): On the one hand, subsidiary power was important to have a voice (Dörrenbächer and Gammelgaard, 2016). On the other hand, having a voice came with a loss of “freedom of non-centrality” (Hamprecht and Schwarzkopf, 2014, p. 773). In fact, subsidiary autonomy with little or no HQ involvement could enhance its entrepreneurial spirit and constituted an advantage in the implementation of initiatives at the subsidiary level (Saka-Helmhout, 2009; Nadayama, 2019).

5. Discussion and conclusion

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The aim of this study was two-fold: First, we investigated the different stages of initiative undertaking and the factors influencing them. We then showed how subsidiaries can make use of this process to attract HQ attention and thereby could break the vicious circle of subsidiary isolation. On the basis of the findings of a set of ten case studies, we provided a more differentiated picture of multi-level subsidiary initiative development processes.

Our first contribution lies in assigning contextual, organizational and micro-level factors to the three stages of the initiative process sketched by Schmid *et al.* (2014). While our understanding of subsidiary initiative from “(..), a troublesome and little-understood concept” (Ambos *et al.*, 2010, p. 1100) has developed over the past years (for a detailed literature review and research agenda see Schmid *et al.*, 2014 and Strutzenberger and Ambos, 2014), we offer a more dynamic view of the interaction of various elements that leads to subsidiary initiative implementation and shows how the impact of subsidiary characteristics varies considerably over time during the process. At least two observations that come with managerial implications should be highlighted:

First, less embedded subsidiaries might generally be more prone to the identification of initiative opportunity. This has been explained by the motivation of subsidiaries to show entrepreneurial behaviour which was intensified when the institutional distance of HQ and subsidiary was large (Saka-Helmhout, 2009; Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018). Therefore, managers of less embedded subsidiaries felt the urgency to show entrepreneurial behaviour and deal with issues that otherwise would not be dealt with in the MNC system (Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018). The previous section has also shown that not only institutional distance (Saka-Helmhout, 2009; Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018), but also the encouragement of communication between MNC units through indirect HQ involvement influenced the identification of new business opportunities (Boojihawon *et al.*, 2007; Saka-Helmhout, 2009; Tippmann *et al.*, 2012; Nadayama, 2019). This implies not only that HQ managers can affect subsidiary initiative due to structural changes (Boojihawon *et al.*, 2007; Nadayama, 2019), but also that a gradual alignment of values and practices may, over time, come with higher degrees of subsidiary embeddedness and, accordingly, lower levels of local adaptation.

Second, the power or weight of subsidiaries is expected to be of importance in stage two of the process, the issue selling, evaluation and approval of initiative (Saka-Helmhout, 2009; Hamprecht and Schwarzkopf, 2014; Dörrenbächer and Gammelgaard, 2016; ul Haq *et al.*, 2017). Put differently, less embedded subsidiaries that lack strategic significance and power suffer from not being heard and therefore hardly manage this stage of the process effectively. The findings indicate that low subsidiary power may lead to HQ refusal of subsidiary initiative even if high issue-selling efforts were undertaken (Dörrenbächer and Gammelgaard, 2016). This is also in line with the argumentation by ul Haq (2017). Since the

previous section has shown that motivated subsidiary managers may try to implement the initiative at their subsidiary, when the negotiation process with HQ has failed (Dörrenbächer and Geppert, 2009), it should be differentiated between the approval, commitment and implementation of subsidiary initiatives at the *corporate* and at the *subsidiary level*.

This leads to our second and main contribution which is especially interesting for subsidiary managers. For the case of isolated subsidiaries, we adapt Schmid *et al.*'s (2014) process model and show how an isolated subsidiary can attract HQ attention due to subsidiary initiative taking at the subsidiary level, which eventually leads it out of isolation. While this observation might be relevant for so-called local innovators (Gupta and Govindarajan, 1991), it is even more relevant for less powerful receptive subsidiaries. This is because local innovators might have weight due to their external embeddedness in the host market and could make use of their voice, while receptive branches cannot.

At the same time, the previous section has also shown that subsidiary managers were found to be ambivalent towards initiative taking, since having a voice (Dörrenbächer and Gammelgaard, 2016) was argued to come with perceived losses of the advantage of isolation (Nadayama, 2019) and the “freedom of non-centrality” (Hamprecht and Schwarzkopf, 2014, p. 773). Subsidiary managers’ fear of losing their freedom to make decisions and take actions on their own might even prevent them from taking advantage of new business opportunities. Indeed, this effect has previously been investigated by Ambos *et al.* (2010), who show that, at least in the short term, subsidiaries jeopardize their free hand by evoking HQ attention.

While the ambivalence of HQ towards initiative taking (Ambos *et al.*, 2010; Birkinshaw and Fry, 1998; Bouquet *et al.*, 2016) and, accordingly, the HQ resistance towards subsidiary initiative taking, i.e. its corporate immune system (Birkinshaw and Fry, 1998; Birkinshaw and Ridderstråle, 1999), have been discussed in previous literature, our study turns the attention to the subsidiary level. More specifically, our findings suggest that, in the case of less powerful and more isolated subsidiaries, motivated subsidiary managers see themselves forced to implement their initiative at the subsidiary level to receive - purposely or not purposely - HQ attention (Acquier *et al.*, 2018; Nadayama, 2019). Not only at the corporate level, but also at the subsidiary level a certain amount of ambivalence towards the initiative was observed, since the implementation of new products or processes might come with in-house investments and changes (Saka-Helmhout, 2009; Dörrenbächer and Geppert, 2009; Dörrenbächer and Gammelgaard, 2016; Acquier *et al.*, 2018; Nadayama, 2019). This means that, in some cases, issue selling tactics are first used to overcome the *subsidiary immune system* in order to then fight the corporate immune system. This could be a fruitful avenue for further research.

In addition, further research should consider the type of subsidiary initiative, since it shapes the initiative taking process. It has been shown that global strategic initiatives were mainly driven by external pressures of the environment of the subsidiary’s host country (Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018) and incrementally *evolved*, when

issue-selling tactics were applied (Acquier *et al.*, 2018). By contrast, process innovations were shown to be also driven by internal pressures due to the urgency to respond to non-routine problems (Tippmann *et al.*, 2012). This implies a certain time pressure that is expected to speed up the process of approval, commitment and implementation.

Generally, managers of less-embedded subsidiaries should be aware of possible HQ resistance and show persistence over time. This has also been concluded by Bouquet and Birkinshaw (2008a), who summarized a set of different strategies for low-power units to increase their power and weight. HQ managers' awareness is of the same importance at least regarding two significant points. First, silent, but motivated subsidiaries can only be detected by some sort of HQ monitoring and reporting, which emphasizes the relevance of formal HQ mechanisms such as expatriation policies and systems to evaluate subsidiary performance (Miao *et al.*, 2011). Second, while knowledge exchange and subsidiary initiative taking can be facilitated by structural changes (Boojihawon *et al.*, 2007; Nadayama, 2019), too much alignment of values, practices and processes might pose a threat to the motivation of subsidiary managers to identify initiative opportunities (Saka-Helmhout, 2009; Hamprecht and Schwarzkopf, 2014; Acquier *et al.*, 2018). HQ managers are therefore challenged to balance their (positive) attention towards subsidiaries.

As a limitation, we have to acknowledge that the included case studies have not been conducted to answer our research questions and, except from Nadayama (2019), do not explicitly address the case of isolated subsidiaries. However, by "translating" and further interpreting the data we could come to an adaptation of Schmid *et al.*'s (2014) process view of subsidiary initiative development. All case study findings have contributed to the adapted model, most of them to more than one stage. An exception was the study by ul Haq *et al.* (2017) that met our inclusion criteria, but exclusively focused on the issue of HQ attention.

We decided for a systematic approach regarding "filtering the literature" for fitting qualitative studies to be included in our meta-synthesis. A limitation resulting from this structured approach may be that we have in a relatively early stage of the research focused on ten studies that met our inclusion criteria leaving possible blind spots where our inclusion criteria may not have worked perfectly. However, this investigation gives starting points for further research that can be more open to including further findings from previous studies where seen as adding value.

This study shows that meta-synthesis-oriented approaches are a valuable complement to quantitative meta-analyses and to investigations of a limited number of qualitative cases. Following this approach, we came to a more holistic and finer-grained understanding of subsidiary initiative processes and drew our attention to aspects that are underrepresented in the current body of subsidiary initiative research.

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The dark side of retailers regarding digital growth strategies: an exploratory study on augmented reality perception

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Abstract

Purpose of the paper: *The present paper aims to investigate retailers' perception of immersive technology (e.g. augmented reality) to create new growth strategies to expand and internationalize business.*

Methodology: *This study adopts a qualitative approach, based on a multi-case study methodology. Nine Italian SMEs operating in the furniture and interior design sector were interviewed. After transcribing and translating the interviews, they were coded using an inductive approach.*

Results: *This study shows that Italian SMEs still have little exposure to the knowledge of technologies, and thus a higher resistance to adopting digital growth strategies in their business.*

Research limitations: *This study is exploratory in nature and based on a sample of nine SMEs in the Italian cultural context. Therefore, further research could extend our findings, by carrying out a cross-cultural analysis in comparison with other countries.*

Practical implications: *This study highlights the importance for SMEs to understand and introduce digital growth strategies to create competitive advantages on the market and an enhanced experience for consumers. Using technologies, SMEs should be able to maintain a growth orientation with a high level of networking with international corporations to be more flexible towards market advancements and changes.*

Originality of the paper: *This paper provides an original view on retailers' perception of immersive technologies to create digital growth for SMEs, by highlighting some new challenges that SMEs must face to successfully compete in a digital scenario.*

Key words: augmented reality; immersive technologies; retailing; perception; digital strategies; growth

1. Introduction

Digital technologies' introduction has changed all types of interactions between consumers and retailers (Poushneh, 2018; Pantano *et al.*, 2017), thus enhancing the use of different channels for purchases (Verhoef, Kannan and Inman, 2015). In this way, retailing has integrated online into physical space as a new strategy to shape long-standing boundaries between the two channels (Beck and Rygl, 2015; Barlow, Siddiqui and Mannion, 2004), moving from a multi-channel to an omni-channel retailing model (Rigby, 2011).

In the academic world, consumers' perception has been analyzed under different aspects such as consumers' perception of store attributes (Morschett *et al.*, 2005; Phillips *et al.*, 2011), innovativeness (Lowe and Alpert, 2015) and shopping experience in physical stores (Oppewal and Timmermans, 1999; Dholakia and Uusitalo, 2002), but little is known about retailers' perception of digital technologies as new growth strategies in business (Naldi and Achtenhagen, 2011; Lee *et al.*, 2019).

On this point, some scholars like Cruz *et al.* (2019), Scholz and Duffy (2018) and Baier, Rese and Schreiber (2015) started to present some examples of big companies (i.e. Sephora and Ikea) that introduced immersive technologies to adapt their business to this new type of shopping experience (Hilken *et al.*, 2018), but did not investigate how retailers perceive this adoption of disrupted strategies as tools to promote and enhance their business in term of revenues and sales.

In addition, the advent of the Internet and advanced technologies have shaped entry boundaries in international market even for the smallest enterprises (Hervé, Schmitt and Baldegger, 2020; Bell and Loane, 2010). This aspect is particularly interesting if contextualized within a worldwide scenario dominated (by about 90%) by small and medium enterprises (SMEs) (World Bank SME Finance, 2020) that have limited financial resources to compete against bigger companies (Sinkovics and Sinkovics, 2020; Hamill and Gregory, 1997). As a result, first the Internet and then new immersive technologies (such as augmented reality, AR) are opening and improving communication with foreign customers and suppliers, thus creating new digital growth strategies (Chattel, 2016). In particular, AR feature two important aspects in terms of internationalization of business: on one hand, it lets enterprises easily show their products virtually, thus avoiding travel costs (e.g. for trade fairs) and the physical barriers that are typical of e-commerce; on the other hand, it promotes the enterprise image as an innovator in both national and international markets (Penco *et al.*, 2020). Thus, this paper aims to investigate retailers' perception in adopting immersive technologies to create new growth business strategies, as advanced technologies help to underpin new internal know-how and technological skills (Bell and Loane, 2010). This is particularly important in order to increase the growth of smaller enterprises within a more competitive and digitalized market scenario.

To reach this goal, the first part of this paper analyzes Rogers' (1995) innovation-decision process theory and AR adoption in retailing to increase business. Then, the second section investigates retailers' perception of AR through a case-study methodology. The paper ends by highlighting its main theoretical and managerial contributions, considering its main limitations and providing suggestions for further research.

2. Literature review

2.1 Innovation-decision theory

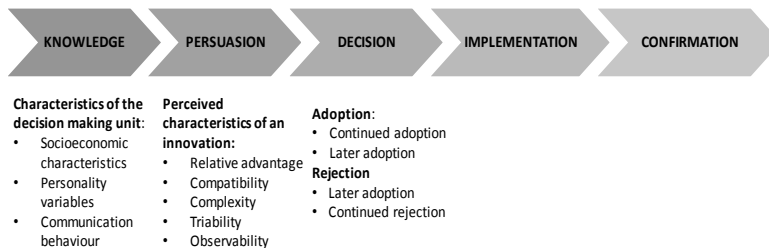
Innovation-decision theory divides the individual decision-process on the adoption on technologies into five stages (Figure 1): knowledge,

persuasion, decision, implementation and confirmation (Rogers, 1995; Rogers and Shoemaker, 1971). In this model, Rogers and Shoemaker (1971) aimed to understand how new ideas, processes, and products spread within and across organizations (Lundblad, 2003). Here knowledge is defined as the individual's exposure to a message concerning innovation (Hassinger, 1959). Normally the predisposition of an individual towards these kinds of messages depends on personal interests and leads to a selective exposure (Rogers, 2002).

Persuasion is the individual's mindset towards an innovation. Thus, individuals firstly refer to their personal experiences to develop a favorable or unfavorable attitude towards the innovation.

Then, the decision stage consists in the engagement of individuals in activities capable of making them adopt or reject the innovation (Sahin, 2006). So, if individuals decide to adopt a new technology, the next step will consist in implementation. Notwithstanding this adoption, individuals still feel uncertainty in using it. Thus, additional information on the technology's usage could assist clients in the beginning of the implementation process. Finally, the last step refers to confirmation, which means searching for further information to validate the choice to adopt the new technology (Mason, 1962). Here individuals search for additional information to reinforce their decision to adopt the innovation. This behavior could be explained by the internal disequilibrium of the human being (Rogers, 2002).

Fig. 1: A Model of the Stages of the Innovation Decision Process



Source: Adapted from Rogers & Shoemaker (1971)

In this theory four main elements are highlighted: innovation, communication, time and social system. According to Rogers' theory (1995) innovation is an idea, a procedure of a system perceived as new by whomever is adopting it. It is not required to have been recently developed, but it just needs to be perceived as new by the adopter. The second element is communication, which is the process by which people receive and share information to achieve common understanding. In this model, communication has an important relationship with the rate of adoption: adoption is higher when the source of information is similar to that of the potential adopter (Rogers, 1995). Time is a primary element in Rogers' theory: as a matter of fact, it is related to awareness of the innovation: first potential adopters become aware of the innovation, then they will adopt it.

Innovation therefore tends to follow a S-shaped curve, where only a few individuals initially adopt the innovation and, as time goes on, the rate increases (Lundblad, 2003). All innovations are placed within a social system, sharing a common goal or objective. Studies have shown that the involvement and sharing of an innovation contributes to its subsequent adoption (Lundblad, 2003).

Hence, this model is particularly useful to depict individual perceptions on new strategies passes from their awareness and knowledge before the adoption on digital strategies in business. In this study, we refer to perception as a process where an individual is exposed to, selects, organizes and interprets stimuli (Morshett *et al.*, 2007). In this definition, specific emphasis is given to “interpretation”, where an individual relies on personal experience to create his or her own idea on a new external stimulus (Schiffman and Kanuk, 2009). This is particularly interesting if this definition is contextualized during the first two phases of the process, i.e. knowledge and persuasion, when consumers firstly experience the technology (Hassinger, 1959; Roger, 1995; Schiffman and Kanuk, 2009).

Thus, we believe that the innovation-decision model could depict a clearer picture of retailers’ perception of new digital strategies using technologies in-store and their awareness of and knowledge on digital growth strategies for business by investigating the preliminary knowledge and persuasion phases of Rogers’ model:

RQ1: To what extent are enterprises conscious of immersive technologies growth strategies?

2.2 Augmented reality as a smart growth tool

Innovations are changing the game of retailing, by enhancing consumers’ in-store shopping experience with digital content (Grewal, Roggeveen and Nordfält, 2017). The introduction of in-store digital strategies revolutionized retailers’ work starting from the early 2000s, when retailers introduced new technologies in both physical and online stores as digital drivers of business growth, thus offering a more digitized environment for consumers within an omni-channel context (Pantano, 2010; 2015; Vanheems, 2015). The emerging of Industry 4.0 strategies has stimulated knowledge revolution, bringing about dramatic changes thanks to the rapid and massive advance of technology (Chew, 2013). This revolution has proposed new business models and organisation management infrastructures, thus improving knowledge management development in enterprises (Bejinaru and Iordache, 2010). By using digital tools, the organization co-creates new knowledge networks with both internal staff and the external environment (e.g. universities, consulting firms, associations) (Costa and Monteiro, 2016; Băeșu and Bejinaru, 2020). In terms of smart growth, many expectations are placed on immersive and mobile technologies, where the Internet is perceived as a new driver of growth on a global scale (Komninos, 2016).

More specifically, the introduction of the Internet in business has offered direct and indirect opportunities of foreign market entry for both big and small enterprises (Hervé *et al.*, 2020; Bell and Loane, 2010).

As a matter of fact, the Internet has improved communication with foreign consumers and suppliers, and it has enhanced the possibility of generating new market segments abroad (Sinkovics and Sinkovics, 2020; Hamill and Gregory, 1997). Thus, enterprises have created a “space-place” environment, where parts of their organization, such as websites or social pages, are online (space), while others, such as offices or warehouses, are offline (place) (Monaghan, Tippmann and Coviello, 2020).

With the advent of pervasive and immersive technologies, enterprises have provided consumers with the opportunity to enhance their experience abroad. As a matter of fact, by using tools such as AR, consumers do not need to touch or see the physical product, but just visualize the item virtually by using a smartphone, a tablet (AR), or a visor to live a 3D experience (virtual reality, VR).

Hence scholars and practitioners consider AR as a prominent immersive technology, whose potential adoption in the next few years will offer consumers a more enhancing experience than the traditional one (Bettucci *et al.*, 2016; Grewal *et al.*, 2017; Perkinscoie report, 2020).

More specifically, due to its low cost of implementation, AR could also be a valid solution to enhance business growth (Ginters and Martin-Gutierrez, 2013) for SMEs, which dominate the Italian economy (Banca IFIS, 2018). In fact, the creation of an omni-channel strategy using AR could lead to two important outcomes: (i) the overcoming of the physical barriers that are typical of e-commerce, thus creating a virtual fitting room where products may be tried before shopping (Bettucci *et al.*, 2016) and (ii) the speeding up of consumers’ search for information and feedback on a product, thus allowing the company to guarantee greater transparency on the product throughout the supply chain (Penco *et al.*, 2020)

In this third wave of IT-driven transformation (the Internet of Things and smart connected products) (Porter and Heppelmann, 2014), AR assumes a “positive” function as an interactive and persuasive technology (Grzegorzczak *et al.*, 2019), that could be particularly attractive in an omnichannel retailing experience, facilitating consumers’ gathering of information while shopping (Hilken *et al.*, 2018). This is made possible by involving computer-generated virtual images on reality and letting consumers interact with virtual contents in real time (Dey *et al.*, 2018). So, boundaries between online and offline are blurred (Huang and Liao, 2015) and consumers can live an embedded, embodied and extended experience (Robbins and Aydede, 2009; Semin and Smith, 2013). Here enterprises gain specialized knowledge on technology, thus creating new business growth opportunities thanks to the involvement of consumers and users in the co-creation of the new shopping experience (Reichwald *et al.*, 2004).

The second approach analyzes AR as a disruptive tool for companies’ business that triggers significant changes in consumer behavior and industry dynamics (Spreer and Kallweit, 2014).

Previous studies have argued that the digital business transformation is providing insights into how all sectors are responding to the disruption of conventional business models and practices by digital technologies (Networked Society Lab, 2014a, 2014b, 2014c; Merisalo *et al.*, 2013). As a result, the online world is pushing companies to reorganize their business

strategies to grow in a new market, where traditional practices (e.g. outsourcing, innovation, distribution, transactions) should be redefined in new digital business (Komninos, 2016).

From this perspective, AR could destroy the dominance of traditional in-store promotions and packaging (Hilken *et al.*, 2018) by using the superimposition of contents and enhancing the traceability of and information on products, along with consumers' in-store experience (Penco *et al.*, 2020; Spreer and Kallweit, 2014).

Notwithstanding these interesting insights, companies are not yet ready to apply a successfully digital experience in-store using AR (Hilken *et al.*, 2018). Here, the lack of knowledge on generated profits with the introduction of AR in companies' business (Bonetti *et al.*, 2018), the scarce promotion of this tool when employed (Zagel, 2016) and consumers' level of knowledge and cognitive innovativeness play an important role in companies' adoption of AR (Bejinaru and Prelipcean, 2017).

In addition, companies are slow to implement omnichannel strategies in the effort to revisit traditional business models. In fact, adopting an omnichannel strategy requires certain elements such as the creation of a unique view of customers regardless of the channel used (online or offline), data management to create customized offers (short-term perspective) and for strategic analysis (long-term perspective), the review of the key performance measurement system to support the new strategy without the risk of the emergence of conflict with channels that were perceived by retailers as secondary (Bettucci *et al.*, 2016). These elements require time to restructure the business, and qualified personnel to manage and monitor each phase.

As a result, in considering all these difficulties and companies' lack of propensity towards the introduction of new technologies, their readiness and support of adoption remain quite low (Markus, 1983).

Thus, the following research question comes up:

RQ2: *What are the motivations to adopt AR as a smart growth tool in retailing?*

3. Methodology

The present study adopted a qualitative approach with the view of contributing to the extension of the scientific debate on retailers' perception on immersive technology adoption.

Based on a multiple case-study methodology (Eisenhardt, 1989), this study analyzed 9 enterprises in the furniture and interiors sector. We opted for the case-study methodology, because it enables researchers to investigate *how* and *why* questions (Yin, 1994) and explore new processes and behaviors that are still little understood (Hartley, 1994). Moreover, it allows information, which could be difficult to gather using other qualitative methods, to be accessed (Sykes, 1991). We therefore collected data on 9 small medium enterprises (SMEs), to create a generalization of the results (Eisenhardt, 1989).

3.1 The sampling criteria

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We examined a homogeneous sample of 9 Italian SMEs to minimize variation between cases, thus simplifying and focusing our analysis (Shakir, 2012) according to specific sampling criteria (Eisenhardt, 1989).

In Table 1 we briefly describe the sample of interviewed SMEs, with the aim of allowing the reader to comprehend the sample of our study more in depth. All companies are small or medium in size in terms of revenues, retailers in the furniture and interiors sector and based in the Piedmont region (Northern Italy). In fact, this region has stood out for its growing reputation in digital technologies since 2016, when Turin was nominated as a Smart city (Crivello, 2015). Moreover, a report by Banca IFIS (2018) states that there are 760,000 small and medium enterprises (SMEs) in Italy, i.e. 76% of the total amount of companies (996,000). 86% of them are classified as micro-enterprises detaining a turnover of less than 2 million euros. Our sample is therefore representative of the Italian furniture and interiors market.

Tab. 1: The sample profile

Enterprises	Year of Foundation	Revenue	Number of Employees	Type of market	Geographical market
Enterprise 1	1975	3,000,000 €	16	B2C	Italy
Enterprise 2	1952	2,200 €	5	B2B	Italy
Enterprise 3	1950	440,000 €	2	B2B and B2C	Italy
Enterprise 4	1968	2,000,000 €	14	B2B and B2C	Italy
Enterprise 5	1961	1,000,000 €	8	B2B and B2C	Italy
Enterprise 6	1980	1,850,000 €	10	B2B and B2C	Italy
Enterprise 7	2009	2,100,000 €	13	B2B and B2C	Italy, Egypt, Algeria, Russia, France, Portugal, Switzerland.
Enterprise 8	1983	3,000,000 €	50	B2B and B2C	Italy and France
Enterprise 9	1950	2,000,000 €	3	B2B	Italy, France, Switzerland

Source: authors' elaboration

In addition, we selected enterprises from the furniture and interiors sector because it is constantly updated in terms of software and technologies to enhance consumers' experience (Siltanen and Woodward, 2006; Irawati *et al.*, 2006). Finally, only three of them have internationalized their business (Enterprises 7, 8 and 9).

3.2 Data collection

This study followed a two-step method. Firstly, we conducted an investigative analysis on different secondary sources, such as official communication tools (i.e. official websites), documentary information and social network pages (e.g. Facebook and Instagram). In this manner, we determined the relevance of these enterprises with the greater information at our disposal to create an interview protocol. The second phase consisted in developing semi-structural interviews for managers who are responsible

for marketing strategies. As a matter of fact, interviews are a great way to “open a window” to achieve research objectives and collect more detailed data on perception (Abell *et al.*, 2008).

The interview protocol was divided into four sections: the first section aimed to understand the in-store use of digital technologies, along with retailers’ perception of their adoption; secondly, we analyzed the effective adoption of augmented reality in retailing to investigate to what extent retailers are willing to use this kind of technology. Then, the third section analyzed retailers’ perception on digital growth strategies as well as breaks and problems in their adoption when present. The last section collected data on the demographical characteristics of the interviewees.

The interviews collected between January 2019 and July 2019, each lasted around one and a half hours, and were tape recorded. Then, we transcribed them and translated them into English.

3.3 Measurement scale

The inductive and iterative process (Miles and Huberman, 1984; Strauss and Corbin, 1990) was at the base of our data analysis. Interviews transcripts were manually coded following the five phases of technological adoption described by Rogers and Shoemaker (1971).

Simultaneously, we measured the level of knowledge and persuasion based on Rogers’ model (1995) to depict retailers’ perception on digital technologies to enable their business to grow. More specifically, we classified the knowledge of the outcome as: (1) absent (the SME was not exposed to innovations), (2) weak (the SME experienced primordial exposure to innovations), (3) moderate (the SME knows about the innovation but had some reservations about adopting it), (4) strong (the SME knows about the innovation and is willing to adopt it). Persuasion was classified as: (1) absent (the retailer presents totally an unfavourable attitude towards adopting technologies), (2) weak (the retailer prefers traditional business models to digital ones, even though it acknowledges the usefulness of digital channels), (3) moderate (the retailer shows interest in adopting technologies but has not implemented them), (4) strong (the retailer has a favourable attitude towards adopting technologies due to prior experience).

In the end, we triangulated the primary and secondary sources to identify deeper theoretical foundations (Hartley and Sturm, 1997).

4. Empirical findings

4.1 SMEs’ knowledge on digital technologies

Our study confirms limited awareness of digital growth opportunities, due to scarce retailers’ involvement in new technologies (Reichwald *et al.*, 2004).

More specifically, five companies out of nine demonstrate a low rate of adoption of immersive technologies as a new tool for growth. These SMEs

have little knowledge on technological tools, having been occasionally exposed to primordial digital strategies without any success. For this reason, these companies maintain a high degree of skepticism in revisiting traditional strategies and considering the implementation of new forms of growth for the business:

“I have heard about AR technology, but I don’t think it could be useful for us” (Manager of Enterprise 3, 39 years old).

“(…) our consumers prefer to interact with real vendors” (CEO of Enterprise 4, 49 years old).

“We don’t use mobile apps. There are billions of apps. If I make an application, I cannot expect a customer to download it” (CEO Enterprise 5, 56 years old).

“Ignorance is the biggest obstacle to the adoption of new digital strategies. This ignorance is both that of those who suffer from technology as I do and that of those who propose it, because while they are capable, they do not have the humility to explain what to do in simple words, because they have lived in their world for many years, and when they have to explain that world in simple words they are no longer able to do so” (CEO of Enterprise 8, 50 years old).

From these statements it is clear that retailers are a little resistant to introduce AR or other digital tools in their business for two main reasons: (a) lack of preparation on technologies and (b) reduced involvement of consumers in new digital technologies and reluctance to use these tools in-store as suggested by the literature (Serravalle, Vanheems and Viassone, 2019).

Only three out of the nine enterprises of the sample have a strong degree of knowledge on digital technologies, having been positively exposed to them in the past, and therefore decided to adopt them. Two of them (E9 and E6) used immersive technologies (QR-Code and Virtual Reality) as a new digital strategy to enhance sales, reduce time, and enhance consumers’ in-store experience.

“We allow our consumers to wear a visor so that they can walk around in their virtual kitchen and imagine it already assembled. It feels like you are already there. (…) With immersive technologies marketing campaigns almost 97% of cases turn into sales” (Manager of Enterprise 6, 31 years old).

“By now we often use the QR-Code for a whole series of codified products. As a result, consumers can scan codes to see all the possible finishes in the selected product” (Manager of Enterprise 9, 27 years old).

4.2 Retailers’ persuasion

As previously mentioned, the interviews showed very limited knowledge on AR and immersive technologies, so their application is also rare and remains in a primary stage. The most used digital tool is the QR-Code, which speeds up communication with consumers, especially if the enterprise is not so well-known:

“In our experience, the QR-Code is useful to simplify the visualization of our products, thus facilitating access to their visualization” (Founder of Enterprise 7, 40 years old).

Referring to persuasion, these enterprises demonstrated a cultural mindset inclined toward innovation. Resistance to change is high for the interviewed SMEs due to two main reasons: (i) lack of support of new strategies without the emergence of internal conflicts between channels:

“The difficulty for a small business is to be known by consumers. So, sometimes it seems that changes make something more difficult instead of easier” (CEO of Enterprise 4, 49 years old).

and (ii) the effort of implementing a unique view of business regardless of the channel:

“AR is a useful tool, but it cannot replace other business tools (attention to customer needs, knowing how to listen, presenting the physical store in an updated way, ...). Thus, AR is an additional tool that could increase value over time but cannot be a substitute for all the abovementioned elements of the business” (CEO of Enterprise 2, 42 years old).

“I hope AR will not increase purchases on internet at the expense of in-store ones” (Manager of Enterprise 1, 39 years old).

Notwithstanding, some retailers recognize the role of digital strategies as a useful tool to enhance consumers' experience with the virtual fitting that offer a more vivid experience for consumers, who will express a positive attitude towards the business, as well as a facilitating engine to enhance business speed and consumers' return:

“I see AR being particularly useful in the furniture sector. Here the products are real, you can change their color, and you can immediately try on the products” (CEO of Enterprise 4, 49 years old).

“Digital strategies have made it possible to optimize time, work and therefore also increase the amount of work that can be done. Today thanks to these technologies, we can support multiple projects at the same time” (Manager of Enterprise 9, 27 years old).

“Adopting digital strategies would certainly make consumers more willing to buy a second time due to the ease with which a personal need is satisfied” (Founder of Enterprise 7, 40 years old).

Therefore, AR's usability enhances consumers' familiarization with products and the SME's image:

“The QR-Code can facilitate access to the display of our products (...). In the near future these technologies will be almost indispensable because they are very useful to facilitate sales and make sure that our business is always visible and taken into account when it comes to buying a product belonging to our product category” (Founder of Enterprise 6, 31 years old).

“When consumers observe that a company is introducing digital strategies, they perceive a higher degree of organization in the business. Thus, the enterprise image grows” (CEO of Enterprise 4, 49 years old).

5. Discussion of results

The introduction of digital strategies is shaping all boundaries in traditional businesses, thus enhancing consumers' experience while shopping and increasing retailers' growth on the market (Rigby, 2011; Renko and Druzijanic, 2014). Indeed, digitalization has destroyed all

geographical boundaries between markets and brought great potential to internationalization processes (Penco *et al.*, 2020). Notwithstanding, in the Italian context SMEs still display a high degree of reticence in using digital strategies in their business. The principal reason that emerges from the results of the study lies in the lack of deep knowledge about immersive technologies, which are perceived not as a tool for growth, but as a possible threat for the enterprise's market position and professionalism ("*our consumers prefer to interact with real vendors*" Enterprise 4). As a matter of fact, according to the interviewed retailers, immersive technologies destroy vendors' professionalism, giving consumers a sense of independence in their choice of products. Other enterprises believe that digital strategies could destroy growth if they are not well implemented in the business due to a low level of knowledge of the tool or low level of consumer involvement because customers prefer traditional purchases and interaction with vendors ("*I don't think AR could be useful for our business*", Enterprise 3).

From this perspective, in the Italian context of SMEs there is still a lot of work to do before fully comprehending of digital growth strategies and the following in-store adoption (Hilken *et al.*, 2018). For this reason, we believe that retailers' perception on the incoming adoption of technology in businesses is still fragmented, even if some of them partially perceive technology's usefulness and have just started to introduce it in their business (Inman and Nikolova, 2017) ("*In our experience, the QR-Code is useful to simplify the visualization of products*", Enterprise 7), even if enterprises still haven't perceived benefits suggested by the literature such as lower costs, higher traceability (Penco *et al.*, 2020), the internationalization of products (Marcoz *et al.* 2016), new marketing experiences, and extended customer engagement (Bonetti *et al.*, 2018; Spreer and Kallweit, 2014; Pantano, 2015).

Thus, this study confirms the importance of knowledge exposure as suggested by Rodan and Galunic (2004) in improving and accepting digital strategies in business (Rodan and Galunic, 2004). As a matter of fact, as has been demonstrated by our data, when enterprises have limited exposure to the knowledge of a technology their resistance in introducing digital growth strategies in the business will be greater. Secondly, the level of risk taken by Italian SMEs is low. This is due both to the abovementioned lack of technology knowledge and the low technological involvement that is typical of a traditional country like Italy (Boccardelli *et al.*, 2007).

As a matter of fact, according to Hofstede's cultural compass (2011), uncertainty avoidance is still high in Italy. Such a compass measures a 75% rate of uncertainty avoidance in Italy, which means that Italians prefer low risk situations (Hofstede Insights, 2019). To adopt innovations, risk should be high and adopters should seek out and embrace uncertainty (Lundblad, 2003).

Thus, in this context enterprises believe that the effort and the risk that are necessary for the adoption of these tools is too high compared to the possibility to enhance business growth by using digital strategies (RQ1).

Some enterprises, which have a higher level of knowledge and exposure to innovation, have introduced some primordial AR tools, such as the QR-Code, but still have no idea of all the potential uses of these instruments for their business growth. By now, retailers have decided to introduce digital

growth strategies to enhance consumers' in-store experience, co-creating value in terms of shopping experience, increasing sales (*"technologies are useful to facilitate sales"*, Enterprise 6; *"Digital strategies have made it possible to optimize time, work and therefore also to increase the amount of work that can be done. Today, thanks to these technologies, we can support multiple projects at the same time"*, Enterprise 9) and consumers' return (*"Adopting digital strategies would certainly make consumers more willing to buy a second time due to the ease with which a personal need is satisfied"*, Enterprise 7) (RQ2). To be more motivated to adopt immersive technologies, enterprises need information such as the profits that can be generated with the introduction of AR in business (Bonetty *et al.*, 2018). In this manner, they can implement their promotion around the introduction of this technology as a new service for consumers. As a result, the value of the company image as a high-tech enterprise increases and it can position in the market itself as an innovator (*"When consumers observe a that business is introducing digital strategies, they perceive a higher degree of organization in the business. Thus, the enterprise image grows"*, Enterprise 4) (Rogers, 1995:2010). Unfortunately, at the moment, little technological information is available to SMEs that maintain a low degree of adoption (*"Ignorance is the biggest obstacle to the adoption of new digital strategies"*, Enterprise 8).

6. Conclusion and final remarks

This paper has outlined an analysis on how retailers perceive digital growth strategies adoption in an omni-channel environment.

The presented data show how the retailing sector will undergo some changes over the next few years: (i) on the retailers' side, emerging awareness of digital growth strategies will push retailers to their enhance knowledge on immersive technologies, realizing the benefits for their business and creating *ad hoc* strategic innovation plans; (ii) consumers' involvement in immersive technologies (e.g. AR, VR) will enhance their willingness to use these tools while shopping, thus demanding greater tech-skilled professionalism by vendors.

From a theoretical point of view, we expanded the AR marketing literature by providing insight on retailers' perception on digital technologies to grow their business by applying Rogers' innovation-decision model (1995) to depict Italian SMEs' adoption of digital strategies.

From a managerial standpoint, the data confirmed that Italy is a country with many inhibitors in introducing digital strategies in business due to its traditional organization mindset (Hofstede Insights, 2019). As a matter of fact, SMEs have a high rate of uncertainty avoidance and a low propension towards risk taking. This aspect makes SMEs reluctant to innovation and its in-store adoption, but not to the idea of innovating, which seems interesting to them but not suitable for their business growth. Regarding retailers, the introduction of digital growth strategies using immersive technologies in business would have three main implications: (i) the creation of an in-store virtual environment to enhance consumers' willingness to repurchase after an involving experience; (ii) the building of new high-tech competencies combined with new selling activities by

means of new digital tools; (iii) the creation of competitive advantages on the market and resulting revenues growth. In this emerging disruptive scenario, SMEs should maintain a growth orientation with a high level of networking with international companies to be more flexible towards market advancements and changes.

Notwithstanding these interesting results, our research is not exempt from limitations. First of all, our study is exploratory and analyzed a sample of nine SMEs in the Italian context. Further studies could investigate a larger sample of enterprises that are active in different sectors of the 4Fs of the “Made in Italy” brand to verify whether if there are any differences or similarities with these results. Secondly, the analysis could be extended abroad by comparing the Italian and French mindsets, as they are very similar in relation to some of the six dimensions of Hofstede’s country compass (2011).

In addition, these data were gathered before the COVID-19 outbreak. During this pandemic emergency, enterprises had to effort the lack of physicality, due to restriction measures as the lockdown, and the sudden disruption of consumers’ demand created by panic buying (Pantano *et al.*, 2020) due to the “scarcity effect” of products (Hamilton *et al.*, 2019). As a result, enterprises have experimented with new business solutions by implementing online services, such as home delivery and virtual queueing (Pantano *et al.*, 2020). After the lockdown, many consumers kept using those new channels never adopted before. The pandemic experience has shown SMEs that to survive and for their business growth they need to embrace tech solutions (such as AR), including those they were not yet familiar with, more than ever. Thus, further research could expand our findings by investigating the effects of the COVID-19 outbreak on the introduction of advanced technologies in business as survival or growth digital strategies.

Finally, the study could expand the sample to include bigger companies and investigate into their perceptions on digital strategies’ adoption and their awareness on digital technologies.

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Abstract

Purpose of the paper: This study examines the impact of digital transformation on business model innovation and internationalization using the context of small and medium-sized firms (SMEs) operating in the Made in Italy. The study attempts to answer the following research questions: 1) How is digital transformation changing the business model of SMEs? 2) How is digital transformation changing the internationalization strategies of SMEs?

Methodology: To answer these research questions, we present a multiple case study research on the digital transformation of three Made in Italy SMEs.

Results: We found that digital instruments contribute to innovate the business model of all the selected SMEs, creating new distribution channels and new ways to build and deliver value to customers; moreover, the use of social media becomes the driver and the “prerequisite” for internationalisation.

Research limitations: The main limitations are related to the limited number of case studies and the difficulty in the replication of results.

Practical implications: Focusing on Made in Italy, our study contributes to the existing literature on business model and digital transformation of SMEs. Second, it contributes to the internationalisation literature, identifying new paths for entering new geographical markets. In addition to the theoretical implications, this study provides some managerial implications to accomplish the digital transformation of SMEs operating in Made in Italy.

Originality. To the best of our knowledge, the present is the first specific study aimed at investigating this intriguing theme for Made in Italy SMEs.

Key words: digital transformation, business model, innovation, SME, Made in Italy

1. Introduction

Digital transformation is currently revolutionizing the way companies carry out their business, creating deeper relationships with consumers, suppliers and other actors (Bresciani *et al.*, 2018; Scuotto *et al.*, 2019), fostering business model innovation (BMI) and changing internationalization processes.

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In this study, we define digital transformation as the way “a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm” (Verhoef, *et al.*, 2021). Such transformation may affect business processes, operational routines and organizational capabilities (Li *et al.*, 2018).

Digitalization is shaping the traditional interaction between consumers and businesses (Taiminen and Karjaluoto, 2015). In particular, consumers have access to a multiplicity of media channels, actively and effortlessly communicate with firms and other consumers, and pass through rapidly increasing numbers of touchpoints in their customer journey, many of which are digital (Verhoef *et al.*, 2021).

Extant literature has traditionally explored the implementation of digital technologies in large corporations (Cenamor *et al.*, 2019) or in particularly innovative businesses, digital start-ups and high-tech giants (Ghiezzi and Cavallo, 2020), while specific studies focused on SMEs operating in traditional sectors, like Made in Italy, are relatively scarce, nevertheless this type of firm is recognized as innovative and a contributor to economic growth in many countries. For instance: Scuotto *et al.* (2017) analyse the role of ICTs oriented to intra-organizational (in-house research and development) and inter-organizational (open innovation) processes in promoting the SMEs’ innovative performance; Mohd Salleh *et al.* (2017) focus on the role of Information System; Jin and Hurd (2018) and Li *et al.* (2018) investigate how digital platforms impact on the SMEs’ entry into the Chinese market; Grandón *et al.* (2011) analyse the adoption of e-commerce by SMEs; Crupi *et al.* (2020) concentrate on the role of the digital innovation hubs; Schiavone *et al.* (2020) address instead the digital entrepreneurship by user innovators.

Digital technologies are of paramount importance as competition tools for SMEs and entrepreneurs must recognize that neglecting them is very risky and may seriously compromise the survivorship of the firm. Indeed, nowadays digital technologies provide a support for value creation and customer engagement that are the critical success factors for SMEs. In addition, the use of these technologies is not without difficulties and requires a fond vision of the entrepreneur and the management.

However, to the best of our knowledge, no specific studies have yet focused on the understanding of how SMEs utilize new digital tools in order to innovate their business models, finding new ways of value creation both in domestic and international contexts. Moreover, the above studies have mainly analysed the role of simple digital technologies, such as social media, neglecting other more complex technologies like artificial intelligence, apps, which are concretely driving firms’ digital transformation to date and that should be more deeply investigated.

Hence, to fill the literature gap, we ask: 1) *How is digital transformation changing the business model of SMEs?* 2) *How is digital transformation changing the internationalization strategies of SMEs?*

To answer these research questions, we present a multiple case study research on the digital transformation of three Made in Italy SMEs. They operate in three Made in Italy industries, called the “3Fs”: Fashion (textile/clothing, footwear, leather goods, eyewear, jewellery), Food (e.g.

pasta, pizza, olive oil, wine, beer) and Furniture (e.g. lighting articles, ceramic tiles, home faucets), where the creation of experiences for the customer is becoming increasingly important. These industries present a bipolar structure, characterised by the coexistence of a small number of big companies and a large number of micro, small, and medium-sized enterprises (Penco *et al.*, 2019); also the smaller ones are facing an international competition and the internationalisation seems one of the most successful strategies.

Our study makes some important contributions to the existing literature. First, focusing on the scope of the digital transformation in the value creation process, we contribute to the business model and digital transformation literature for SMEs providing a rich context of study. Moreover, as the specific focus of the paper is to investigate how digital transformation is changing the firms' business model in relation to the customer's value creation process in the national as well as in the international contexts, it contributes to the internationalization literature, identifying new paths for entering new geographical markets. In addition to the theoretical implications, this study provides some managerial implications to accomplish the digital transformation of SMEs operating in Made in Italy industries.

The remainder of this paper is organised as follows. Section two provides the theoretical framework useful to carry out the explorative research by addressing the extant literature on digitalisation, business model and internationalization in SMEs. Section three explains the research design and method. Section four describes the major empirical findings of the analysis and presents the principal outcomes, while Section five presents a discussion of the results. Finally, Section six concludes, together with the academic and practical implications.

2. Literature review

2.1 Digital transformation and business model innovation

In the context of the company, digital transformation has received an increasing attention over the last two decades (Cha *et al.*, 2015; Warner and Wager, 2019; Galindo-Martín *et al.*, 2019; Rachinger *et al.* 2019; Morakanyane *et al.*, 2017). Analysing the evolution of the digital technologies for firm's strategies, innovation and business models, at the beginning companies were mostly involved in the application of internal management information systems such as Enterprise Resource Planning or Customer Relationship Management (Boersma and Kingma, 2005). In this vein, the digital transformation was limited to the application of information systems aimed at improving the business process within the organizational boundaries in order to gain efficiency, cost savings, and business process optimization (Besson and Rowe, 2012).

In recent years, new digital technologies, such as big data, artificial intelligence, 4.0 machines, are revolutionizing the "way companies do business" (Rothberg and Erickson, 2017). However, digital technologies

may enhance not only operational efficiency by optimizing process management but also market orientation through advanced market knowledge (Cenamora *et al.*, 2019). Companies are focused on the application of cross-boundary digital technologies (Li *et al.*, 2017), aimed at transforming the way organizations create value and the way organizations and consumers interact and exchange value (Yadav and Pavlou, 2014). Digital technologies, in fact, improve marketing activities and particularly the communication with customers (existing and potential) enabling their requirements to be better understood and facilitating customized offerings and new products tailored on the specific needs of customers (Barnes *et al.*, 2012). Moreover, digital technologies allow not only to create new distribution channels but also to integrate them in an omni-channel perspective (Verhoef *et al.*, 2015).

Within the business model framework, literature has found that digitalisation modifies the entire structure of business models, i.e. the rationale of how an organization creates, delivers and captures value (Osterwalder and Pigneur, 2010) and the value architecture of a business (Volberda *et al.*, 2017; Saebi *et al.*, 2017).

It is well known that the core of BM is the value proposition, which describes products and services that add value for particular customer segments, while the other key components describe how the companies build, promote and deliver it (Arnot *et al.*, 2016). Digitization and specific technologies are innovating the key components of the business model (Franceschelli *et al.*, 2018; Ghezzi and Cavallo, 2020). This is true not only in high tech and digital industries but also in the traditional ones (Ferraris *et al.*, 2018; Warner and Wäger, 2019; Matarazzo *et al.*, 2021). This happens in the national context as well as at international level. For example, firms can conduct online marketing research in a very short time and with a little expense to understand consumer habits and lifestyle and test many times their products in several countries, as well as launch social media advertising campaigns to reach international customers.

Several studies have also found that digitalization can influence and innovate BMs in three different ways: optimization of the existing BM (e.g. cost optimization); transformation of the existing BM (e.g. reconfiguration of existing models, extension of the established business); and development of a new BM (new customers, new products/services) (Rachinge *et al.*, 2019; Loebbecke and Picot 2015). Arnold *et al.* (2016) argue that BM changes can be differentiated into BM development and BMI. In these perspectives, digitalisation leads to a BMI, i.e. “the changes made in the business logic for creating and capturing value” (Bouwman *et al.*, 2018, p. 107).

More specifically, we are interested in examining how digital technologies could lead SMEs to BMI (Bouwman *et al.*, 2018), with particular regard to the way they affect the value proposition and customer relationships at national and international level (Arnold *et al.*, 2016). The “mobile revolution”, in fact, with the increasing power of social media and of analytics, has promoted a digital transformation of the customer value creation (Rachinge *et al.*, 2019), also in the case of smaller firms (Garzoni *et al.*, 2020).

In this perspective, scholarly attention has delved into the diffusion of different digital technologies that are focused on the value proposition and customer relationships.

The diffusion of digital platforms such as Alibaba, Amazon and eBay has modified not only the process of value delivery but also the relationship with the customers (Li *et al.*, 2018). Social media (with the raising relevance of mobile devices) have created new ways of interaction (Taiminen and Karjaluoto, 2015) and are actually considered the most important means of communication and value creation within the business model: in terms of BMI, social media enhance and transform the customer value propositions and organize innovative delivery operations (Berman, 2012). Social media and mobile applications have brought new revolutionary ways of implementing corporate brand communication strategies, encouraging interaction, participation and cooperation. They stimulate continuous dialogue with customers, influencing brand meanings and messages, and dictating product or service developments. Social media involve users generating content and connecting with people through a many-to-many, rather than the traditional “one-to-many”, communication approach allowing customers to create and be active participants in the process. The interactive nature of these digital media not only allows sellers to share and exchange information with their customers but also allows customers to share and exchange information with one another.

Augmented reality (AR) transforms how individuals interact with their physical environments (Ferreira *et al.*, 2019; Poushneh and Vasquez-Parraga, 2017): AR, in fact, allows the costumers to test the product many times before its purchase (Owyang, 2010) and to collaborate with the brand and with other users, regardless of the customer’s country of origin. In this sense, mobile AR, in particular, facilitates customer involvement, improving the hedonic value of experience (Kim and Forsythe, 2008) and providing users with the ability to share their experiences on social networks (Muzellec and O’Raghallaigh, 2018). In this scenario, also Big Data change the value creation process, affecting the marketing mix: product (e.g., product-service innovation using Big Data without waiting for insights from traditional marketing research), price (e.g., dynamic pricing based on changing consumer demand), place (e.g., Amazon’s anticipatory shipping) and promotion (e.g., use of geospatial data to send specific advertising messages) (Erevelles *et al.*, 2016; Yadav and Pavlou, 2014).

Some authors (Sawhney *et al.*, 2005) have already shown how all these technologies are central to developing a dialogue with customers throughout the customer journey (Baxendale *et al.*, 2015; Lemon and Verhoef, 2016). The growth of digital touch-points has, in fact, not only changed the “awareness and information acquisition” stage of the costumer journey but also the purchase stage, and last but not least, the post-purchase one.

SMEs have the chance to interact with their customers at any stage from the buying decision process to the post-consumption process by exhibiting their services and benefits in an entertaining, non-intrusive manner, engaging with consumers in a user-friendly and enjoyable environment (Clatworthy, 2012). In the pre-acquisition stage

of “awareness, consideration and search”, firms have the opportunity to identify and interact with current and prospective customers that have noticed and assessed a brand. At this stage, firms can utilize social media, encompassing social networking, blogging, influencers’ engagement to promote or refer to the brand, paid advertisements, videos and photos virally spread (Cawsey and Rowley, 2016), as well as augmented reality and conversational commerce to support customers in the search process. The aim is to help customers find specific solutions, products and brands, or connect to prospective customers before needs arise, suggesting possible products or developing new solutions to meet their requirements. To this aim, it is important to create experiential value for consumers, increasing their interaction, and hence heightening their willingness to purchase a given brand. These technologies can be used to create brand stories and allow consumers to interact with the brand also in novel, unconventional spaces, such as gaming platforms or mobile applications (Scholz and Smith, 2016), generating a greater level of consumer entertainment.

At the following stages of purchase and post-purchase, firms have to move from the dimension of attraction and interest stimulation to the dimension of long-term relationships with customers with highly positive emotions. At this stage, the digital tools described above can be used to increase customer satisfaction along the whole purchase process that is the prerequisite for customer engagement. Chat bots, for example, can play an important role at this stage by stimulating conversations, answering consumer queries, process product orders, and providing suggestions and recommendations through the use of artificial intelligence systems. The customer’s highly positive emotions during the customer journey and over time drive to brand advocacy (the interaction with others in their social networks to spread the word about their positive experiences with a product, brand, or company) and engagement (the inclusion of customers in the value co-creation) enhancing satisfaction.

2.2 Digital transformation and internationalization

Some scholars (Etemad *et al.*, 2010) introduced the term “internetization” to refer to the process of increasing adoption, diffusion, and deployment of internet-based technologies and processes that serve as the backbone of internationalization, especially for the SMEs.

Increased use and investments in digital technologies lead to higher degrees of internationalization and growth (Davis and Harveston, 2000). One of the reasons is that they can provide a way to decrease the effects of liability of foreignness and resource scarcity, and herewith contribute to increase speed of internationalization (Arenius *et al.*, 2005) and to widen market opportunities. Digitalization adds a third choice beyond the dyadic choice of internalization/hierarchy on the one hand and outsourcing/market on the other hand. The possibility of a third choice in foreign market entry modes is not new in the international business field, since literature has already shown international joint ventures, strategic arrangements and networks as alternative choices to enter foreign markets. Nevertheless, the digitalization has made it easier to implement this third choice through

the digital platforms which create a market mechanism of matching supply with demand. The digital network is a hybrid governance choice that can be adopted by firms, depending on whether technology or human capital firm specific assets are deployed abroad (Banalieva and Dhanara, 2019).

The advantages for BMI that derive from the usage of digital technologies go beyond the mere Internet and rest mainly in the possibility to create a deep relationship with international customers, by developing effective customer engagement strategies along the different phases of the customer journey.

Regarding the purchasing phase, the digital platforms may help to succeed in international expansion by enabling firms to obtain access to a wider network that provides millions of potential consumers and market knowledge (Li *et al.*, 2018). These platforms alleviate entry barriers such as psychic distance and help firms with financial resource constraints by building up brand awareness at relatively low cost. Social media support companies to create brand awareness and provide information about their product, with a positive impact on the pre-purchase phase. (Abed *et al.*, 2015). Moreover, digital technologies help firms to provide an unforgettable experience along the different stages of customer journey, useful to build a customer's relationship based upon trust and commitment (Sashi, 2002) which in turn may reduce the cultural distance between the firm and the customer's country (Matarazzo *et al.*, 2016). Digital technologies help SMEs to develop customer engagement strategies in several countries and consequently to strengthen the global power of the brand and the international visibility of the firm.

Firms adopting an international approach in the usage of digital tools could exploit global market opportunities more rapidly and obtain significant competitive advantage (Zhou *et al.*, 2007). Social media platforms offer their own built-in analytical services such as Facebook Analytics, Twitter Analyzer and YouTube Analytics which provide information on traffic and popularity. Other tools provided by search engines such as Google Analytics and Google Alerts can be used to analyze site traffic and the amount of times a brand, company or product has been mentioned (McCann and Barlow, 2015). These analytical services play a role of paramount importance in gaining data and information useful to better understand foreign consumers and markets (Ciravegna *et al.*, 2014; Fernhaber and Li, 2013) and to develop superior marketing capabilities and effective customer engagement strategies that are the prerequisite to succeed internationally.

3. Methods

3.1 Procedure

To answer to the research questions, we carried out a multiple case study research (Yin, 1994; Cunningham, 1997; Eisenhardt and Graebner, 2007). The decision to adopt this methodology depends on two motivations: the research scope (digital transformation, business model innovation and internationalisation) and firm types (family/entrepreneurial SMEs).

Regarding the “research scope perspective”, the case study methodology is consistent with research questions based on “how” and “why”. Qualitative research is in fact appropriate when the emphasis is on the development of a conceptual framework and the identification of critical factors and other key variables.

Regarding the “firm types perspective”, since family/entrepreneurial SMEs tend not to disclose strategic and organisational information, a direct contact is essential to understand these profiles.

Moreover, multiple cases enable a more generalizable and robust theory than a single case (Eisenhardt and Graebner, 2007; Del Giudice *et al.*, 2017; Dezi *et al.*, 2018). The research has been conducted, according to the guidelines and suggestions for qualitative methodologies provided by the literature (Yin, 2003), on three cases.

We carried out in-depth interviews based on face to face meetings using a semi-structured questionnaire, which allows comparisons across the selected companies. We interviewed entrepreneurs and managers responsible for corporate and business strategy and digitalization, using a semi-structured interview guide.

The interviews lasted for nearly two hours and were conducted, encouraging free reporting, by, at least, two of the authors to guarantee the possibility of a comparison between the researchers.

All the answers were audio-recorded, transcribed and translated from Italian into English. They were independently analysed by each author and discussed together to reduce subjectivity in the interpretation of the data. When necessary, we carried out a follow-up correspondence with the firm's respondents, in order to clear some points.

In addition to primary data from interviews, secondary data from documents (such as corporate presentations, internet-based information, and newspapers) were gathered. We triangulated these data with the primary data, analysing the results and their coherence and reinforcing the knowledge of each company. The data were analysed following the protocols for qualitative data analysis and using an interpretative method (Eisenhardt and Graebner, 2007). The main research was carried out in Autumn, 2019.

In particular, the three cases were analysed by evaluating the digital transformation in terms of: i) digital tools and distribution channels for the customer value creation (Sashi, 2012); ii) impact on the business model innovation (Zott and Amit, 2017); iii) impact on the internationalization process (Etemad *et al.*, 2010); iv) leadership and major triggers of digital transformation (Teece, 2007).

3.2 Cases selection and company profiles

In line with the exploratory research purposes, the cases have been selected not because they are a representative sample in statistical terms, but because they are considered able to provide significant insights concerning the relationship between the digitalisation, the business model transformation and the internationalisation process.

In particular, the three selected cases are Italian SMEs, each belonging to one of the three “F’s” of Made in Italy (Food, Fashion and Furniture). Table 1 summarizes the research cases and the interviews conducted for this study.

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Tab. 1: Profiles and digital tools used by the selected companies

Company	Profiles/ Strategic Business Units	Year of foundation	Strategic paths	Role of the interviewed person	Channels	Digital tools
Fratelli Carli S.p.A.	Olive Oil/ Mediterranean food specialties Cosmetics	1911	Focus on a market niche: home delivery/e-commerce High differentiation: brand image Diversification (cosmetics: Mediterranea) Internationalisation (FDI and export)	Family Entrepreneur Responsible for Cosmetics Division	Oil: Home delivery Mailing Call center E-commerce Cosmetics: the same + Physical store Marketplaces (Amazon)	Social media Web (shop window and e-commerce) CRM Big Data Analysis
Freddy S.p.A	Fashion: dance and fitness	1976	Focus on a market niche: apparel for dance and fitness Product innovation: patents (shaping pants) High differentiation: brand image and new Made in Italy line Contractual vertical integration with suppliers Internationalisation (FDI and export)	Member of the Board of Directors CFO	Agents and distributors present in many international markets E-commerce Marketplace Flagship stores	App for B2B Web (shop window and e-commerce) Social media CRM Big data Analysis Chat bot Smart wall
SOVET S.r.l.	Furniture: design	1990	Focus on a market niche: furniture based on glass with other raw materials High differentiation: brand image embodying Italian culture and Made in Italy value Total vertical integration Internationalization (export)	Founder/ entrepreneur + Marketing Director	Interior designers/ Architects Agents and distributors present in many international markets E-commerce Marketplaces	Web (shop window and e-commerce) Social media CRM Big data Analysis (project)

Source: authors' elaboration.

Fratelli Carli is a food company mainly focused on Olive Oil and Mediterranean specialties (such as preserves in oil and sauces). It was founded in 1911. Its strategy is characterised by segmenting the market using the distribution channel which is exclusively based on home delivery. The company seeks a differentiation advantage in terms of product quality and customer service. Investments in CRM and digital marketing tools has led to a better brand position. Over the years, Fratelli Carli has diversified its portfolio by adding the line of cosmetics (the “Mediterranea” brand) to the traditional oil and food specialties (the core business). This diversification strategy has been driven by synergies in sharing the same channel, logistics system and customer relationships database.

Freddy was set up in 1976 by Carlo Freddi. It is focused on dance and fitness apparels (fashion). Freddy’s strength is expressed by its philosophy: “The Art of Movement”. Its strategy is characterized by creativity and product innovation: in 2013 Freddy launched the WR.UP® pants designed to sculpt the female body by redefining the thighs and bottom area. In the years, other products have been designed, technology studied and patented by Freddy. 2017 represented also the launch of the new 100% MADE IN ITALY capsule collection, entirely conceived, designed and manufactured in Italy.

SO.VE.T was founded in the late 1980s by six Treviso glassmakers. In 1990, it was acquired by the current owner (Guido Porcellato) who transformed it into a successful company, able to establish itself as a new protagonist in the world of the Made in Italy design furniture. SO.VE.T began to collaborate with internationally renowned studios: the DIVETRO collection was born in 2003, developed together with the prestigious Spanish studio Lievore Altherr Molina. SO.VE.T presents a product line composed of furnishing and accessories made by the most sophisticated and original glass, such as the innovative carbon treated glass or the combination of glass with other materials such as wood, steel, ceramic and aluminium.

4. Main Findings

The studied SMEs are established in mature (Made in Italy) industries and in “traditional ways of doing businesses”, but all the companies have set up a digital transformation process for shaping, in particular, the relationships with their customers, changing the traditional business model, as emerging from Table 2.

Tab. 2: Business models changes and impact on internationalisation of digital transformation

	BM transformation	Impact on internationalization	Major trigger of digital transformation	Leader in the digitalization process
Fratelli Carli S.p.A.	Prior Business Model: B2C via mailing Replaced business model: E-commerce Omnichannel More intense relationships with customers	Foreign sales: 30% New international markets: EU (Germany, France, Switzerland), UK, US	Curiosity “of the first mover in the Italian e-commerce domain” New digital technology development	Family
Freddy S.p.A	Prior Business Model: B2B Replaced business model: B2C E-commerce Omnichannel More intense relationships with customers	Foreign sales: 80% New international markets: EU (Germany), US, UK, China, Australia	New digital technology development	Family + CFO
SOVET S.r.l.	Prior Business Model: B2B production Replaced business model: Increase of the direct relationships with customers	New international markets: More than 80 Countries: EU (Spain, Italy, France, Germany, Belgium), US, Australia Better knowledge of target foreign markets	New digital technology development	Family + marketing manager

Source: authors’ elaboration.

Considering that all the investigated companies are family firms, the decision to implement a digital transformation was driven by the entrepreneurial family with the help of top management, on the basis of an accurate analysis of the external environment.

Fratelli Carli was established as a B2C company and since its origin (1911) it has been characterized by direct marketing, selling via printed flier/catalogue and phone, and home delivery. In 1996, Fratelli Carli decided to invest in e-commerce with its website (“*it was a natural evolution*”) and in the last few years, it invested also in physical shops (flagship stores) in order to bring the product closer to the consumer. Moreover, the company is at present partner of digital Marketplaces (e.g. Amazon), especially for the Mediterranean Brand. All the distribution channels (mailing/phone + e-commerce + digital platform + physical store) are integrated in a holistic way, in order to enhance the number of touchpoints and to accomplish the consumer along his/her customer journey. Therefore, the business model changes created more intense relationships with customers.

Freddy was traditionally a B2B company and the most important distribution channel was the wholesale; the digitalisation enabled the company to become also a B2C company that uses several distribution channels: traditional (wholesale), e-commerce, directly via Freddy’s website and Amazon (“*we are both vendor and seller*”) and flagship stores. Now Freddy is promoting the “*brick and click revolution*”, with 47 Brick and Click stores around the world, aimed at reinforcing the omni-channel distribution: “*even though it is far more convenient to shop online, the majority of individuals still prefer to buy their goods in a physical store*”. The Freddy stores support digital engagement through a touchscreen (smart wall) that allows: the involvement of consumers in entertainment activities, with a virtual dressing room connected to social networks; the enrichment of the purchasing experience through additional information (product, intended use, cross selling) and online purchases or reservations (interaction between the stores).

For SO.VE.T, digitalisation helped not only to re-shape the internal production process (the company has invested in Industry 4.0 technologies), but also to “*make our products known around the world; print advertising is impossible ...*”. Social media, in particular, are one the most powerful instruments as they help to show the products to customer.

Digitalization may have an impact at any stage of the customer journey, increasing the interactions with consumers in a user-friendly and enjoyable environment. Freddy employs, in this sense, several digital instruments. The company utilizes a consumer-oriented App which allows consumers to create a “dialogue” and interaction with other digital instruments: website, social media and smart wall. Freddy uses also a “simple” chat bot that: nevertheless “*it is not able to answer all consumer queries and to accomplish the entire journey*”, it helps consumers to interact with the company, stimulating conversations, useful in the pre-purchase phase. It is important to highlight that Freddy offers also an App tailored for B2B, with the aim of facilitating communication and supply chain information with the distributors (wholesalers and their retailing partners). With this tool, they can easily know what is available in stock, see their orders history,

download the official marketing material, and send after-sales requests.

QR-Code is used only by Fratelli Carli: the QR-code is applied on each product and is considered an “electronic label”, useful in the purchasing or post-purchasing phases, in terms of product information (i.e. characteristics, ingredients, nutrition elements), traceability and valorisation of the products for the costumers. Fratelli Carli recognizes that App and chat bot can create high potentials, but at the moment they are not using them (“*it is not easy for us to keep an App alive*”; “*in the past, we had a Forum... at the moment the chat bot is not a priority; we prefer to use and select social media that are consistent with our target*”).

For all the companies, the most important benefits stemming from digital transformation are however related to the interaction of Social Media, CRM and BigData Analytics. For Freddy, Twitter is considered less effective in comparison to Instagram and Facebook, while Tik Tok is a great dilemma; “*Instagram is also an important selling instrument*”, since photos and posts are clickable and connected to the virtual store. In addition, for SO.VE.T, Instagram is an important instrument, as it helps to show the products. Taking into account the specific features of the furniture design industry, however, the digitalisation of the catalogue (and the creation of 3D images) is considered one of the most important “services” for interior designers and architects’ studios, which may insert the furnishing products in an Augmented Reality context, providing customers with an immersive experience.

As regards the impact of digital transformation on internationalization, the adoption of digital instruments has enhanced the international presence of the companies, expanding the number of markets and the percentage of foreign sales. The foreign sales of Freddy and SO.VE.T are respectively 95% and 80% of the total sales, while Carli has increased in the last 10 years the percentage of foreign sales from 10% to the current 30%. For Freddy, social media helped to succeed in international expansion by creating brand awareness among the potential international consumers. Moreover, the adoption of an App tailored to B2B created the premise not only to enlarge the number of international distributors (wholesaler and retailers) but also to create deeper relationships within the supply chain.

For SO.VE.T, the diffusion of digital images via social media and the digital catalogue can help reduce the international entry barriers, such as the mailing of the physical catalogue with relatively low costs.

5. Discussion

These results help to understand how digital transformation is changing the business model for SMEs (RQ1). On the basis of the previous results, in fact, it emerges how digitalisation can be seen as the driver of the key components’ changing of the business model, also for companies operating in the traditional businesses, confirming Ferraris *et al.* (2018) and Warner and Wäger (2019).

First of all, digitalisation leads all the companies to an omni-channel distribution, merging the on-line and off-line environments. Digitalisation allows consumers to integrate the different distribution channels,

enhancing the purchasing experience, adding information and stimulating consumer-company and consumer-consumer conversations at each stage of the customer journey.

Moreover, according to Ashley and Tuten (2015), digital technologies help SMEs to overcome the disadvantage of small size, allowing them to generate and communicate content and engage consumers as well as to develop brand presence quickly and at a much lower cost. According to Taiminen and Karjaluoto (2015), social media have radically created new ways of interaction and are actually considered the most important means of communication and value creation within the business model, especially with international customers. The selected companies, in fact, invested in particular on Instagram and Facebook; these social media are aimed at implementing and improving corporate brand communication strategies, encouraging interaction, participation and collaboration with consumers.

Social media are also useful for Big Data Analysis. Reading the comments and the consumer behaviour on social media, helps the companies to shape the value creation process on the basis of the consumers' profiles; also product innovation is tested using Big Data, without waiting for insights from traditional marketing researches; moreover, it is possible to apply dynamic pricing based on changing consumer demand and create personal promotions. Not all the cases report a positive experience with the analysis of Big Data: SO.VE.T is investing with an external partner in CRM and Big Data Analysis, but at the moment the results are unsatisfactory.

The case studies contribute also to understand how digital transformation is changing the internationalization strategies of SMEs (RQ2). Specifically, they help to obtain a broader comprehension of the specific role played by digital technologies as facilitators of the internationalization strategies (Ciravegna *et al.*, 2014; Fernhaber and Li, 2013).

E-commerce platforms and social media have enabled firms to obtain access to a wider network of consumers, lessening entry barriers and helping SMEs with financial resource constraints. Social media are able to reach and entertain a dialogue with new consumers belonging to international countries, useful for understanding and exploiting the opportunities emerging from the markets. The adoption of these technologies increases, in fact, the international presence of SMEs, also in terms of foreign market share.

Moreover, the interaction with foreign consumers generates data and information useful for a better knowledge of international markets (Fernhaber and Li, 2013) which is a prerequisite to succeed internationally.

6. Conclusions, implications, and limitations

This study addresses how SMEs operating in traditional industries have changed their business model and processes of consumer value creation at national as well as at international level, as a result of the digital transformation.

The context of analysis is composed by SMEs operating in the Made in Italy industries.

From the analysis of three case studies (belonging to Fashion, Food and Furniture industry), it emerges that the investigated SMEs are inclined to use digital instruments both in the distribution and in the communication phases, shaping their business model. In particular, digital instruments (e.g. social media, augmented reality, chat bot) help the firms to modify the process of consumer value creation, generating new distribution channels that are integrated in an omni-channel perspective, accomplishing deeper and new relationships with the existing consumers and enlarging the covered markets, also at international level. Therefore, digital transformation may be considered the first driver and the *condition sine qua non* for the internationalization strategy of SMEs, often characterized by financial constraints and entry barriers.

This study provides theoretical and practical implications.

In terms of theoretical implications, first of all this explorative study helps enrich the business model and digital transformation literature for SMEs that is still a neglected area of research, as most of the studies on the topic are focused on large firms. Secondly, the focus on Made in Italy enhances the knowledge about the current application of digital instruments in the business model innovation and internationalization of SMEs operating in traditional businesses. Thirdly, despite a great contribution of the study is related to the analysis of social media, our work tries to go beyond their usage, in order to include more complex technologies such as artificial intelligence and Big Data analytics.

Moreover, this research presents significant managerial implications. Digital technologies provide a significant support to the growth strategies of SMEs operating in traditional industries such as Made in Italy, where the firm's reputation, brand awareness and customer relationship are important competitive levers; digital transformation is a condition for internationalization, especially in B2C industries, where the brand awareness is crucial.

Digital technologies, such as web sites and the linkage with global or specialized e-commerce platforms, are useful for creating new channels to sell companies' products at international level; social media can help firms to create connections and interactions with international customers exploring and creating new markets abroad, thanks to their capacity to destroy any international barriers, above all the cultural distance. Moreover, especially for companies that sell their products by a network of independent distributors, digital technologies (e.g. app) help improve their collaboration with foreign companies, strengthening the relationship among the different actors (wholesalers and their retailing partners) within the global value chain. In this vein, neglecting the digital instruments is very risky and may seriously compromise the survivorship of the firm.

Despite the importance of these empirical results and practical implications, this study has some inherent limitations, which might be challenged in future research.

First, the study is based on a multiple case study design that does not provide generalizations, yet it offers a "stepping stone" for the construction of a new theory. In this sense, this study is a pilot study for other analyses. Further studies are needed to extend the number of case studies by

including other SMEs, operating in the other industries of the Made in Italy. Second, the number of investigated variables could be expanded by adding other factors related to the digital transformation, such as the production/logistics phase and human resource management, in terms of new capabilities.

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New product development commercialisation of Industry 4.0 products: evidence from a B2B Italian SME

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Abstract

Purpose of the paper: *The Industry 4.0 paradigm entails tremendous business opportunities. However, SMEs are struggling to effectively commercialize new products embedding Industry 4.0 technologies. Therefore, the study aims at exploring how SMEs manage the commercialization of Industry 4.0 new products to provide a thorough understanding of the main issues and barriers they face.*

Methodology: *The study adopts a single case study of an Italian SMEs. Data have been analyzed through an abductive approach. The novelty of the topic calls for an explorative study consistent with the methodologies adopted.*

Results: *The study finds several barriers and issues related to internal and external factors. Barriers and issues might be overcome if SMEs develop external partnerships to compensate their typical scarcity of resources. The firm faced the coronavirus pandemic, which highlighted further threats hidden into the commercialization process.*

Research limitations: *The study design is qualitative in nature, limiting the generalization of the findings. The internal perspective and the specific study contexts also offer new avenues for future research.*

Practical implications: *The study provides several insights to support SMEs in their commercialization processes of new Industry 4.0 technological products. The study highlights the pivotal role of strategy and planning as well as marketing activities.*

Originality of the paper: *The study contributes to the new product commercialization and Industry 4.0 literature by unravelling potential issues and barriers that innovator SMEs might encounter when commercializing new products that fall into the Industry 4.0 paradigm. The article provides a novel perspective as the extant NPD literature focuses on start-ups or large corporations, while the Industry 4.0 literature has been neglecting the commercialization process.*

Key words: industry 4.0 product, commercialization, SME, new product development

1. Introduction

The recent technological development has unfolded new business opportunities. Megatrends such as digitization, internet of things, internet of services and cyber-physical systems boosted the creation of new industrial products and processes driven by real-time data interchange. All these technologies have been labelled as Industry 4.0, which are considered

the new main challenge in the current production system (Jabbour *et al.*, 2018). However, despite the growing importance in the academic and managerial literature, firms are struggling to effectively develop and commercialize new products embedding such technologies. This is even more challenging for SMEs. The main reasons hindering the development and commercialization of new products lie in the high investment levels, unclear costs and benefits, the newness of the solutions provided, and workforce issues (i.e. lack of adequate skills).

The study aims to explore and shed light on how SMEs are managing industry 4.0 new products commercialization. Despite commercializing new products being pivotal in the product development journey, SMEs are still seldom researched by academics in this field (Pellikka and Lauronen, 2007; Nicholas *et al.*, 2011; Leithold *et al.*, 2015). Commercializing highly technological products is increasingly relevant as Industry 4.0 brought more complexities into manufacturing and development processes as well as into marketing and sales activities. Therefore, the study posits that embedding Industry 4.0 into new products might bring new challenges in the commercialization phase. As a matter of fact, in order to create marketable solutions, firms are asked to develop personalized products that can fit the buyers' manufacturing processes (Bollweg *et al.*, 2019; Porter and Van der Linde, 1995; Stone and Wakefield, 2000).

The study contributes to two established streams of research by providing evidence for SMEs: the new product development literature, more precisely the new product commercialization phase, and the Industry 4.0 literature. These two research areas are closely related and intertwined since they both deal with innovation processes.

To the best of our knowledge, no previous empirical studies have attempted to provide a clear and thorough understanding of the several issues and barriers which SMEs face in the New Product Development commercialization process while developing Industry 4.0 products. In addition, studies that deal with Industry 4.0 and studies that tackle the NPD and commercialization process present some gaps regarding SMEs. Firstly, the works that deal with driving forces and barriers of SMEs mostly concern the adoption and the implementation phase of Industry 4.0 projects (Moeuf *et al.*, 2019; Agostini and Nosella, 2020). Secondly, academics have usually invested efforts to uncover New Product Development commercialization dynamics on start-ups and large corporation, devoting less attention on incumbent SMEs (Carter and Jackson, 2019; Durst *et al.*, 2018, Cooper, 2008; Christensen, 2013; Chesbrough *et al.*, 2006). However, SMEs are still relevant actors of the world's economy (Durst *et al.*, 2018; Carter and Jackson, 2019), deserving more space in understanding innovation processes. Moreover, few researchers explored how this actor manages the new product launch and commercialization phase, although it is the most critical step of New Product Development (Durst *et al.*, 2018).

The remainder of the article is organized as follows. The following section outlines the background literature, presenting the gaps and the research questions. The third section describes the methodology, the data collection and data analysis; the fourth paragraph illustrates the case study, while the fifth discusses the findings followed by theoretical and managerial

implications. Finally, the seventh section outlines the conclusion of the study, together with limitations and further research directions.

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2. Background literature

2.1 *The New Product Development commercialization process*

Academics and practitioners alike are still paying attention to innovation as it is pivotal for the creation of a competitive advantage (La Placa, 2014). This is even more true when considering the recent technological advancements brought by the Industry 4.0 paradigm. The commercialization of new products is strictly connected to the innovation process. The commercialization phase, and the launch of new products, is where most firms, especially SMEs, often fail to link their innovation programs with the buyers' and users' requirements and needs.

According to the new product development (hereafter NPD) literature, the innovation process can be conceived as a linear sequence of phases (Cooper, 2008), whereby the commercialization is the final step. The NPD process generally begins with the idea generation, followed by the further technical and technological development of the concepts, and ends when the developed product has been commercialized to create new wealth (Cooper, 2008; Aarikka-Stenroos and Sandberg, 2012; Medlin and Törnroos, 2015). For the development of technological products, the NPD process might follow four major steps (Crawford and Di Benedetto, 2008; Pellikka and Lauronen, 2007; Tsokas *et al.*, 2004):

1. Idea generation: the idea for an innovation arises, concepts about the final product are produced and analysed according to the information gathered from buyers and users.
2. Concept selection: the firm starts to develop more in detail the most promising ideas resulting from the previous stage. The product concept is defined by defining its main features.
3. Development: once products are selected, the firm proceeds into the designing and manufacturing phase. Product testing and refinement complete the development phase which ends with the marketable product.
4. Launch: the firm deploys all the commercialization activities that ultimately lead to the sale of the new product. In this phase, the firm is focused on managing and exploiting distribution and sales channels.

The NPD is also understood as a stage-gate process since the firm needs to reach specific results, that define the level of the gate, before stepping into the next stage. Otherwise, the process might stop due to unfeasibility. Consequently, each phase is crucial for the success of the entire process, even the last one. As a matter of fact, in order to be recognised as an innovation, any products need to be commercialized and adopted among users (Van de Ven, 1986). However, in the NPD literature the attention has been mainly focused on the exploration phase (Durst *et al.*, 2018) - the early stages of the process, such as the idea generation or the development phase - and far less attention has been dedicated to the exploitation phase - the process of

identifying the potential buyers (Aarikka-Stenroos and Sandberg, 2012). Previous studies have also highlighted that although these phases are often described separately, they tend to overlap making the nature of the entire innovation process very dynamic (Aarikka-Stenroos *et al.*, 2017), and rather complex as it can be difficult to separate marketing and innovation activities (Aarikka-Stenroos and Sandberg, 2012).

The study adopts the concept of commercialization of innovation and new product as the last step of NPD, the process of turning ideas into new products (Cooper 2008, Pellikka and Lauronen 2007). The study draws on the Schumpeterian old adagio (Schumpeter, 1934), which argues that achieving a successful commercialization process is crucial in transforming the invention into innovation. The new product commercialization starts from developing the product launch strategy and continues through establishing interactions with potential buyers and users until the product is fully adopted among the targeted users (Aarikka-Stenroos and Sandberg, 2012).

The commercialization process comprises three different activities: the development of the marketing strategy, useful to understand the business context and plan the launch of the new product; communicating the benefits of the new product and create the right awareness about it; and finally develop sales and mobilizing stakeholders toward the adoption of the new product (Aarikka-Stenroos and Lethimaki, 2014).

Regarding marketing activities, they intertwine and even overlap within the different phases of the innovation process. Marketing resources deployed by the firm in commercializing new products can include the product demonstration, advertising, communication and events, free trials or samples and distribution (Aarikka-Stenroos and Sandberg, 2012). Partners and other actors of the business network may have a crucial role in supporting these activities. For example, universities and municipalities can provide specific expertise that can generate trust toward key actors of the business network and thus facilitate the development of new business relationships (Aarikka-Stenroos and Sandberg, 2012). Other actors can be identified in distributors, public organization, regulators, and opinion leaders. These actors support the firm in creating opportunities, performing commercialization and facilitating the adoption of the innovation within the business network (Aarikka-Stenroos *et al.*, 2014). However, despite the pivotal role played by commercialization in the innovation process, most innovations fail right in this phase (Aarikka-Stenroos *et al.*, 2014). Usually, firms that are technology-oriented and focused on technology development face several issues in commercializing new products.

In addition, the commercialization process can be analyzed both from an innovator and an adopter perspective. While the adopter perspective is well developed, with a specific stream of research about adoption barriers and drivers (Aarikka-Stenroos *et al.*, 2014, Von Hippel, 1986), few studies actually focused on the innovator's commercialization process. Besides, the literature on the commercialization of innovations has mainly focused on startups and multinational enterprises (MNEs) (Carter and Jackson, 2019; Durst *et al.*, 2018, Cooper, 2008, 2019; Christensen, 2013; , Chersbrough *et al.*, 2006) while far less attention has been paid to the SMEs' technological

commercialization process (Carter and Jackson, 2019; Durst *et al.*, 2018, Leithold *et al.*, 2015; , Nicholas *et al.*, 2011; Pellikka and Lauronen, 2007). Yet, SMEs usually suffer from liabilities and resource constraints that negatively affect innovation management and commercialization activities. Factors such as resource scarcity, lack of personnel capabilities (Leithold *et al.*, 2015), liability of newness and smallness (Aldrich and Auster, 1986; Stinchcombe, 1965), an overall lack of planning (Das and Van de Ven, 2000) and the outsourcing of marketing activities (Pellikka and Lauronen, 2007) are widely acknowledged as strong influencing factors of SMEs' behaviours.

Furthermore, technological developments entailed in Industry 4.0 rise new challenges in the SMEs' NPD commercialization process; however, studies dealing with the issues and barriers of this complex phenomenon are still missing and more research is needed (Aarikka-Stenroos and Lethimäki, 2014).

2.2 Industry 4.0: definition, driving forces and barriers

Digital technology has completely changed the world of industry, determining what today is called the fourth industrial revolution, better known as the phenomenon of "Industry 4.0". The term "Industrie 4.0" first appeared in a German strategic initiative in 2011 as a part of its high-tech program, and it was defined in the work of Kagermann *et al.* (2013, p. 5) as "a new type of industrialization". This revolution comes with the introduction of the Internet of Things and Services into the manufacturing environment. The economic impact of this revolution has great potential, as it promises increased operational effectiveness as well as the development of entirely new business models, services, and products (Hermann *et al.*, 2016).

Currently, there is no consensus in the literature about the definition of Industry 4.0 (Piccarozzi *et al.*, 2019; Hoffman e Rusch, 2017) even if its implementation is at the centre of the academic and political interest. Starting from the cited "High-Tech Strategy 2020" promoted by Germany, which provided for the annual allocation of millions of euros for the development of highly innovative and cutting-edge technologies in the production field, many other governments have begun to promote different initiatives and actions at a national level to favour the adoption of Industry 4.0 technologies by firms (Liao *et al.*, 2017). Among them, the Advanced Manufacturing Partnership (AMP) promoted by the US government in 2011, the "Nouvelle France Industrielle" in 2013, the long-term framework presented by the UK government for its manufacturing sector called "The future of Manufacturing", and the "Piano Industria 4.0" designed for Italian companies investing in technological transformation.

One of the main difficulties in defining Industry 4.0 derives from the different labels (Industrial Internet, Internet of things, smart factories, Human-Machine-Cooperation, smart manufacturing) used to indicate the same phenomenon: the application of digital and interconnected technologies to the manufacturing sector. As Burrit and Christ (2016) claimed, Industry 4.0 is an umbrella term used to describe a group

of connected technological advances that provide a foundation for increased digitization of the business. Hermann *et al.* (2015) identify four components of Industry 4.0: Cyber-physical systems (CPS), Internet of Things (IoT), Internet of Services (IoS), and smart factory.

CPS are systems that integrate computation, networking, and physical processes (Bag *et al.*, 2018); they bring the physical and the virtual world together (Akanmu e Anumba, 2015, Hoffman e Rusch, 2017). In the manufacturing environment, CPS comprise smart machines, storage systems and production facilities able to autonomously exchange information, trigger actions and control each other independently (Kagermann *et al.*, 2013). Their application to the manufacturing process allows for a whole new degree of control, transparency, efficiency, and flexibility of production processes. The *Internet of Things* (IoT), or the Internet of Everything (Lee and Lee, 2015), was first described as the phenomenon of adding new technologies (RFID) to everyday objects (Ashton, 2009). Today the term has evolved in a much broader meaning, that includes a network of entities coupled to each other by any form of wireless sensors, actuators and mobile phones (Giusto *et al.*, 2010). They allow the objects to provide information about their environment, context, and location (Ng and Wakenshaw, 2017). According to this meaning, even physical objects can now become intelligent objects with which it is possible to dialogue thanks to the Internet (Haller *et al.*, 2008). Similar to IoT, the *Internet of Services* (IoS) allows service vendors to offer their services via the Internet and consequently add value to their offer. As a result of the application of IoT and IoS technologies in manufacturing, firms are shifting from offering products to offering integrated product-service bundles, a phenomenon that the literature calls “servitization”. Finally, the combination of CPS, IoT, and IoS enables the smart factories. Smart Factory can be defined as a factory where CPS communicate over the IoT and IoS, assisting people and machines in the execution of their tasks (Hermann *et al.*, 2015). In smart factories, human beings, machines, and resources communicate with each other naturally (Kagermann *et al.*, 2013). By equipping manufacturing with sensors, actuators, and autonomous systems, Industry 4.0 will help factories in becoming more intelligent, flexible, and dynamic (Kamble *et al.*, 2018). Beyond these four components, different authors identified other technologies that can be considered under the umbrella term of Industry 4.0: cloud computing (Bag *et al.*, 2018), additive manufacturing, wearables, big data, augmented reality applications, wireless network (Xu *et al.*, 2017).

Within Industry 4.0, a further element of complexity is its interdisciplinarity, since it touches different fields such as engineering, computer technology, manufacturing, logistic, human resources, environmental science, consumer behaviour. As a consequence, as Piccarozzi *et al.* (2018, pp.16) pointed out in their literature review about Industry 4.0 in management studies, “*the first insight that appears clear [...] is that Industry 4.0 is a cross-cutting theme of many disciplines that influence each other [...] It is rare to find a research paper purely dedicated to the managerial and business aspects of Industry 4.0 because in every aspect the business aspect blend with those pertaining to technical engineering, ICT or sustainability*”.

As a matter of fact, in the Industry 4.0's domain, the focus has mainly been on technology and engineering, rather than on "firm-specific" issues, such as strategy or implementation/adoption process management. Thus, it is not surprising that by researching the keyword "Industry 4.0" in the Scopus database, among the total number of papers founded (n. 11.087, August 2020), 9.414 are listed under the "engineering" and "computer science" category, while only 1.630 papers refer to the "business, management and accounting" category. Hence, the examination of organizational and management aspects of Industry 4.0 is still in its infancy (Horváth and Szabó, 2019).

The majority of the articles in the management field are dealing with the driving forces and barriers that firms face when adopting and implementing Industry 4.0 services and products. For example, Müller *et al.* (2018) identified three different opportunities which serve as antecedents: strategic opportunities (new business models, new value offers for enhanced competitiveness), operational opportunities (increased efficiency, decreasing costs, higher quality, increased speed and flexibility, load balancing & stock reduction) and environment and people opportunities (reduction of monotonous work, age-appropriate workplaces, reduction of environmental impact). On the other hand, they found three main barriers: competitiveness and future viability (the existing business models are endangered, increase the loss of flexibility, standardization, and transparency), organizational and production fit (such as high implementation efforts regarding costs and standardization) and employee qualification and acceptance (employee fear and concerns, lack of expertise).

Along the same line, Horváth and Szabó (2019) acknowledge the existence of some aspects that can sometimes be drivers or barriers of digital transformation. For example, human resources' issues can be considered as a factor that fosters the adoption of Industry 4.0's new technologies and could increase labour shortages, reduce human work and allow firms to allocate them to higher value-added areas. On the other hand, the lack of appropriate competencies and skilled workforce and the longer learning time could make human resources (especially for SMEs) one of the main barriers to the implementation of Industry 4.0 projects. They also demonstrated that MNEs have higher driving forces and lower barriers than SMEs across nearly every aspect. SMEs suffer from the lack of financial resources that prevent them from investing in a new technology and from the management ability to identify the additional opportunities offered by digital transformation. In addition to the ones already cited - employment disruptions, high implementation cost, organizational and process change, need for enhanced skills - Kamble *et al.* (2018) identify many other barriers such as lack of management systems knowledge, lack of standards and reference architecture, lack of Internet coverage and IT facilities, security and privacy issues, seamless integration and compatibility issues and legal and contractual uncertainty.

As emerged from the literature review, studies dealing with driving forces and barriers of Industry 4.0 by either suppliers or manufacturing companies, concern the adoption and the implementation phase of

Industry 4.0 projects, while neglecting the commercialization phase of Industry 4.0 products and solutions. However, identifying the antecedents and barriers to the adoption of Industry 4.0 technologies by SMEs can be useful to understand the complexities faced by firms that want to develop and sell highly technological products that fall under the Industry 4.0 paradigm.

Following the research gaps emerged in the two reviewed streams of literature, the present work aims to unravel what are the significant challenges and issues faced by SMEs when commercializing new high technological products. Besides, since nowadays highly technological products can be considered part of the Industry 4.0 paradigm, the authors want to analyze if this paradigm can either boost or hinder the innovation commercialization process. The novelty and multi-faceted nature of the phenomenon under investigation call for a qualitative approach in order to provide an in-depth analysis of the elements that hinder SMEs' commercialization processes in the Industry 4.0 context. In sum, the study tries to answer the following research questions:

- *RQ1: What are the major issues and barriers that hinder SMEs' commercialization process of high technological products?*
- *RQ2: Does Industry 4.0 support or hinder the commercialization of new products?*

3. Methodology

The explorative nature of the study coupled with the limited extant literature about the topic of commercialization of new products and Industry 4.0 technology calls for the use of a qualitative methodology. Therefore, the study employs a single case study (Eisenhardt, 1989, Yin, 2014) as this approach allows to conduct an in-depth analysis of a complex phenomenon in its real-life context (Yin, 2014; Scapens, 2004). As a consequence, a single case study of an Italian small-sized company (here called "Alfa" for privacy issues) has been chosen for its revelatory potential as it offers a distinctive and extraordinary setting to explore the phenomenon under investigation and to gain insights that other organizations would not be able to provide (Coviello and Joseph, 2012; Siggelkow, 2007). The case firm has been purposefully selected as was known to have invested in developing and commercialising new products embedding Industry 4.0 technologies.

Semi-structured face-to-face interviews with five key informants (CEO, shareholder, salesman and external partners) have been conducted as the primary source of data (Corbin and Strauss, 2015, Yin, 2014, Eisenhardt and Graebner, 2007). The data collection began in February 2019, involving 6 interviews for a total of more than 4 hours of recorded audio (see Table 1). The interviews were conducted in Italian, audio-recorded and transcribed verbatim to be subsequently translated into English. The interview was based on open-ended questions within a semi-standardized protocol to ensure both a guidance and consistency in the interviewing style and an adequate level of freedom in answering. The protocol was based on the

literature about innovation, Industry 4.0 and NPD process and it changed over time as new issues and barriers emerged. Given the novelty of the topic, data have been analysed adopting an abductive approach consistent with the systematic combining described by Dubois and Gadde (2002). This approach is suitable for case studies that require cycling back and forward between theory and data as the study proceeds to produce new insights, develop new hypothesis and identify new patterns (Dubois and Gadde, 2002; O’Toole and McGrath, 2018). In addition, archival data (e.g. reports, advertising materials, online information) analysis was used to provide stronger evidence and triangulate the findings (Eisenhardt, 1989; Yin, 2014).

Then, data reduction and condensation procedures were used to remove non-relevant information. Finally, manual coding was performed to aggregate the data into categories that facilitated analysis (De Massis and Kotlar, 2014; Miles and Huberman, 1994).

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SME

Tab. 1: Data collection overview

n.	Role	Organisation	Date	Interview span
1	CEO + Shareholder	Alfa	05/10/2018	70 minutes
2	CEO	Alfa	30/10/2018	70 minutes
3	Engineering Professor	UNIVPM	26/11/2018	46 minutes
4	CEO	Alfa	27/11/2018	45 minutes
5	Engineering Professor	UNIVPM	6/12/2018	Email I4.0
6	CEO	Alfa	23/01/2019	60 minutes
7	CEO	Alfa	23/04/2020	30 minutes

Source: author's elaboration

4. Case description

The chosen company - Alfa - is a small business operating in Le Marche region which designs and sells products and consumables for industrial printing. One of the main activities of Alfa is the optimization of the printing process and the waste reduction generated by it. Thus, the firm has always paid the utmost attention to environmental issues by deploying different activities: guaranteeing the quality of all the raw materials they use, investing in renewable energies projects, producing and selling green labelling products and solutions (see Table 2).

Since 2003, the CEO has been working for the introduction of new products within its business network. His idea was to employ new Industry 4.0 technologies to develop a new category of smart printers able to reduce both the costs and the environmental impact of labelling solutions. In order to achieve this goal, the firm pursued different collaborations, particularly with universities. In the beginning, they occasionally collaborated with the University of Padova in order to develop the first prototype of a smarter printing machine. However, when the headquarter moved from Padova to Falconara in 2015, Alfa began to realize the importance of a continuous

relationship with a certified partner and started a new collaboration with the engineering department of the Università Politecnica delle Marche.

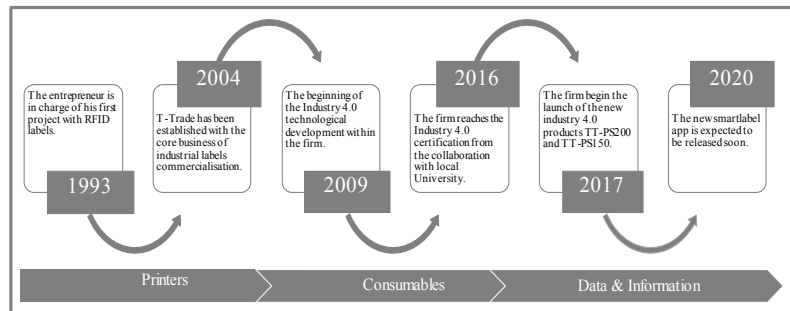
Tab. 2: Case profile information

	Alfa
Turnover (2019)	9 million €
Employee (2019)	31
Participates (2019)	5
Patent rights (2019)	280k €
Number of new products (2020)	5
Total Investments in new products and technologies	1,5 million € (in 5 years)
Markets	Italian mostly, 1 subsidiary in Dubai, 1 subsidiary in India
Customers segments	Food and Beverage, Healthcare, Fashion

Source: author's elaboration

As showed in Figure 1 (below), Alfa has experienced three periods where it has changed its core business. They begin with the commercialization of industrial printers, coming from the previous experience of the CEO in the USA. Then, in 10 years, they shifted to the commercialization of printing consumables, consistent with the growing demand for such products. Since 2004, fast-moving consumer goods and distribution companies have been the preferred customers. Nowadays, Alfa is struggling to begin a new wave, the third one, based on data and information, through the exploitation of Industry 4.0 technologies embedded in printers and labels.

Fig. 1: Alfa case overview



Source: author's elaboration

Alfa's efforts in terms of Industry 4.0 new product development result in the release of two different new products: TT-PA 15, a labelling solution with liner-less technology which allowed the complete avoidance of silicone paper and a 50% reduction of cellulose, and TT-PS 200, a printer which can both seal and label into one solution, resulting in a shorter packaging line and increased respect for the environment by using an adhesive tape as a support on which to write variable data instead of using the paper label.

Besides, both products are interconnected and compliant with the Industry 4.0 criteria, as stated in the Italian Industry 4.0 plan.

After the launch in 2017, many issues started to stem while the commercialization was going on. In the last ten years, Alfa invested more than 1,5 million euro in innovation and the development of new technologies. However, these new products were still not creating the wealth expected but supported the firm in increasing the purchasing quote with each buyer. The new products sales are linked to their adoption by long-term customers that are already buying consumables products for printing. To date, no machine has been sold to new customers.

5. Findings

The single case study analysis reveals that a SME trying to commercialize Industry 4.0 new products faces several issues and barriers that can be either internal or external (see Figure 2).

Fig. 2: Summary of internal and external issues and barriers

Internal
<ul style="list-style-type: none"> • Lack of a formalised innovation plan • Launch plan issues • Lack of a marketing strategy and activities • Revenue model configuration • Liability of newness and smallness
External
<ul style="list-style-type: none"> • Change Resistance & Buyers Innovation Culture • Partnerships and Outsourcing of core development activities • Incentives and policies • Coronavirus Outbreak

Source: author's elaboration

The internal issues and obstacles are mainly related to innovation and NPD-process management. The first issue is the lack of a formalized plan to manage innovation. As a matter of fact, ALFA did not plan any development activities in advance and the linearity of the NPD process has been mostly disregarded in each phase, resulting in a disorganized and chaotic process. This lack will, in turn, lead to the emergence of other issues that will require significant efforts to be managed. The lack of a precise planning in innovation emerged during the interviews with the CEOs, who highlighted that some crucial aspects of the NPD process - such as the concept selection, the users' needs study, the prototype validation - have not been defined yet, even after two years from the release of the new products. Besides, the firm is still defining important elements - such as additional services attached to the product - that usually should be defined before the beginning of the product development process.

“We have to overcome a strictly product-related logic and develop solutions where perhaps data becomes the real value. Industry 4.0 printer machines can lead us to that direction. They are constantly connected and

capable of recording and communicating each type of data: level of paper consumption, production problems, operations required, and so on”.

The lack of an innovation plan is linked to the lack of defining a standardized product portfolio.

“We are trying to create standard machines otherwise we cannot develop our business network” as well as “Innovation cannot be constrained in a machine, but we should be compliant with customers’ needs and regulations”.

The following three issues that emerged are more strictly related to the commercialization phase. First, the product launch not only lacked planning but was even disregarded. The analysis of the buyers’ and users’ involvement according the product characteristics - a critical activity for a successful launch - has been mostly ignored by the company. Second, another critical factor is the launch timing. They missed the right timing to launch the product mostly because no activities were developed to understand the buyers’ requirements and prepare the launch. The CEO stated that:

“When we tried to commercialize new products, time was needed both for us to understand the buyers’ requirements and for the buyers to accept new products and/or technologies. Our biggest fault was to launch the product too early”.

Strictly related, the absence of any marketing and communication activities emerged as the third main issue hindering the commercialization of these new products. The sales team and the customer service are mainly internal, but there are different sale reps that are external brokers. Today, the firm has not yet appointed any salesperson specifically dedicated to the commercialization of the new machines and it lacks a marketing department or any marketing figure inside the organization as well. The communication effort has been limited to presenting the products during some important fair trade by delivering advertising flyers to explain the sustainability-related benefits of their machines.

“I know our communication efforts are barely existent since nobody seems to perceive the added value of our machines” (CEO).

The lack of an adequate revenue model represents the fourth internal issue. As the CEO pointed out: “I think we should develop a new revenue model such as rent or pay per use, or maybe even another different formula”. In fact, Alfa’s core business lies in the production of neutral and customized adhesive labels in huge amount to a variety of firms in different sectors (food, healthcare, FMCG). Consequently, the CEO still struggles to identify how to set-up the revenue model and the marketing activities related to the new products for getting the most out of the resources invested in the NPD process.

The fifth internal issue can be directly linked to the typical SMEs’ lack of resources, thus determining the well-known issue of liability of newness and smallness. Firstly, the printer’s innovativeness required to develop mixed competencies that integrate technical and marketing skills going beyond the expertise of a small manufacturing firm.

“We are just a handful of people here that strives to accomplish too many different tasks. I have tons of innovative ideas, but then I have to deal with the reality of everyday life” (CEO).

Secondly, Alfa is still new in the production of Industry 4.0 printers and is facing several difficulties in supporting the commercialization process of the new products. Alfa showed the barriers of a firm that has just tapped into a completely new business and it has not yet been perceived as reliable and trustworthy as other competitors that have been in the market for a longer time. Regarding these issues, the CEO underlined “If I were “X” [big player in the label industry] I would be able to be paid even for my R&D and customization activities related to the product”.

Then, among the external issues and barriers to commercialization, the first is related to the buyers’ change resistance and their innovation culture. As pointed out by the CEO:

“We notice a high level of reluctance and resistance in buying new solutions, mostly since nobody wants to go against the production manager. [...] In most companies, there are managing directors that stay in that firm for few years, and they often do not want to be remembered as the one who took the wrong decision. [...] Innovation is interesting if it can be useful in that precise moment for the person in charge or in the position to recommend the adoption of your solution. Innovation should also support careers and political interest, inside a customer’s company”.

Consequently, the buyers’ hierarchic structure and their decision-making processes are strongly influencing their willingness to make a change towards the adoption of new technological products. In this case, the resistance seems to be linked to “career dynamics” issues, where the decision of introducing such new complex solutions in the buyer’s production system requires courage and a strong confidence in the benefits of these technologies.

According to the innovation culture, the CEO pointed out that there are two different types of firms: the ones that genuinely believe in the Industry 4.0 opportunities and benefits, pursuing innovativeness and embracing new products; and the ones that look at innovation only if, as the CEO argued “*the price is lower than standard products*”.

Additionally, buying firms should be aware of the potential of new solutions as the CEO suggested:

“Our partner has to be aware that our technologies are going to change his company and its operations and organization... a partner that truly want to go ahead with this technology and believe in it”.

However, to embrace innovation and the related organizational and operational changes, the business network has to be ready to adopt a new technology compliant with the Industry 4.0 principles. Unfortunately, this seems a prerogative of large companies, as suggested by the CEO:

“small firms still do not have the right structure to adopt this technology, and they do not want to pay a premium price for it” and “companies have not yet understood the real potential of our machines. It is difficult to tap into a market with new solutions, especially when there are such consolidated technologies as in the label’s industry”.

The second external factor that has a strong influence in the commercialization of new products is related to the partnership developed, or needed, to exploit the innovation process. The case repeatedly outlines the central role of Universities and R&D centers in supporting the development

of new products. The University helps Alfa with a broad set of technologies capable of managing the machines' data in the cloud environment both for maintenance purposes and for a real-time assessment of their impact on sustainability. However, the benefits of this partnership go beyond the technological expertise of the University. The CEO emphasizes that this relationship should be further leveraged for certifying the Industry 4.0 features to customers and potential buyers. The case company reports "*the collaboration with the University gave us a much greater warranty towards our stakeholders. Being able to tell that our products are certified as Industry 4.0 and sustainable by such a recognized organization, protect us from any future doubts regarding noncompliance with the Industry 4.0 guidelines*" and "*this relationship might help our commercialization process by increasing the awareness in our potential buyers*".

The role of policymaker is the third external factor that seems to have a substantial impact on the buyers' decision to adopt Industry 4.0 new products. As the CEO pointed out "*several companies are willing to adopt such innovation only if there are policies that force them to be compliant with some standard or if they can benefit from some incentives to reduce the investments*". Consequently, the policy makers' intervention might occur in two ways: incentives to support the development and the adoption of new products and rules and legislation that make the transition to new technologies or new products mandatory.

The last external issue that is affecting the NPD and commercialization process of Alfa's Industry 4.0 products is related to the coronavirus outbreak. As pointed by the CEO: "*The pandemic had a negative effect on the new machines' sales. Companies seem to be scared of the situation and the uncertainty it brought; thus, they blocked all the investments, especially on new products. We lost more than 50% of the revenues coming from the sales of printers*".

6. Theoretical Discussion

The study contributes to the extant literature on NPD and Industry 4.0 by providing new evidence on the issues and barriers faced by SMEs when developing and commercializing new products embedding Industry 4.0 technology.

This far, studies have mostly investigated the NPD process of start-ups and larger corporations, leaving incumbent SMEs widely underexplored. Moreover, this article is one of the few attempts to adopt the innovator perspective rather than the innovation adopter perspective. Although there is a well-established literature investigating drivers and barriers in adopting Industry 4.0 technologies - and innovations in general (e.g. Müller *et al.*, 2018; Horváth and Szabó, 2019), very few studies have analysed how an incumbent SME innovator might commercialize new highly technological products.

In this regard, the case analysis outlines both internal and external issues that can hamper the commercialization process of new Industry 4.0 products, thus allowing a better understanding of what is still missing

when managing this process. The lack of a deliberated NPD and innovation plan as well as of any marketing activity and the presence of some typical liabilities of SMEs (i.e. liability of newness and smallness) emerged as main internal issues faced by the company.

The lack of a formalized plan for product innovation and technology development hinders the NPD stage-gate model that could support the commercialization of new products (see Cooper, 2019; Crawford and Di Benedetto, 2008). The literature on NPD specifically suggests developing a marketing plan before deploying the whole NPD process to adapt the product to the users' requirements and effectively market it (Saji and Mishra, 2013). The study findings mirror the "innovation inertia" that has been highlighted as one of the main challenges in the SMEs' innovation processes (see Carter and Jackson, 2019). This is consistent with the current literature emphasizing a "Marketing without Marketing" approach in Italian SMEs (see Varaldo, Dalli and Resciniti, 2006), whereby marketing is frequently underdeveloped and characterized by informal, reactive, and spontaneous techniques (Gilmore *et al.*, 2007), often inspired by the entrepreneur's intuition. SMEs' internal issues in managing marketing and new product commercialization activities often originate from the lack of a marketing department or even a person in charge of the whole process (Horváth and Szabó, 2019). Overall, the study findings provide additional evidence on how the lack of formal planning profoundly affects SMEs' behaviours.

Moreover, previous studies have identified liability of smallness and newness (see Aldrich and Auster, 1986; Stinchcombe, 1965) as the SMEs' issue. The study findings suggest that these barriers play a pivotal role in hampering the commercialization of Industry 4.0 products, mostly due to the complexities of such products which require dedicated knowledge and skills going beyond a small manufacturing firm's expertise.

The study shows how the buyer's change resistance and its attitude toward innovation challenge the commercialization of highly technological product like Industry 4.0 applications. Notably, the adopters' lack of knowledge and expertise about Industry 4.0 products which has been identified as one of the main adoption barriers (e.g. Müller *et al.*, 2018) represents a main issue for innovators' commercialization processes as well. These barriers are also tied to the hierarchy, and the career dynamics within large buyers, where the long decision-making process to introduce new devices and complex solutions requires long-term efforts from the supplier (see Thomas and Main, 2019). Interestingly, government incentives for acquiring and implementing Industry 4.0 products might help innovative SMEs in overcoming buyer-related barriers. As a matter of fact, although innovative products have the potential to provide tangible benefits and advantages, buyers are more eager to adopt new products when there are financial incentives to cover the purchasing and setting up costs, or when regulations demand to be compliant with certifications. Therefore, the study contributes to the Industry 4.0 literature by showing that this paradigm seems to mainly support the commercialization of highly technological products if the innovator can exploit and advertise the related incentives and policies.

Importantly, whilst the literature has emphasized the outsourcing of marketing and sales activities during NPD (Pellika and Lauronen, 2007), the study findings outline that a SME might benefit from the outsourcing of technological development activities to external actors (e.g. University). These partnerships have the potential to be extremely valuable in terms of warranty and authority towards stakeholders, thereby helping SMEs in overcoming commercialization issues.

Lastly, the study offers preliminary insights on the outbreak of the new coronavirus as an important external barrier for SMEs dealing with the commercialization of highly technological products. Such a global event entails tremendous consequences for SMEs by intensifying the main barriers already experienced by the companies, especially those related to the customer side.

7. Managerial Implications

The study allows to draw critical managerial implications able to support SMEs in their commercialization activities of Industry 4.0 devices. The technological innovation created by Industry 4.0 calls SMEs to adopt a new managerial approach.

The internal perspective of the study identifies the pivotal role of strategy and planning as the first step to manage commercialization. Particularly, innovation management and marketing activities are strictly intertwined and, as emerged in the study, the commercialization cannot exist without formalizing and planning both activities. Consequently, the strategy should also incorporate the firm's R&D vision and offer a guidance for the entire organization.

First, SMEs should create a cross-functional team headed by a team-manager who oversees the whole commercialization process and deals with eventual drawbacks or pitfalls. Concurrently, they should plan a marketing strategy without ignoring some important commercialization activities such as the accurate market analysis to identify the new potential buyers' profile and plan the launch. Regarding the first activity, SMEs usually find useful to start the commercialization of new products by approaching their existing customer portfolio and trying to sell their new products. This is also happened in ALFA, but then its lack of any marketing analysis prevents them to engage with the right buyers' profile. SMEs should develop a gradual activity to interact with further key users and key buyers consistent with the profile identified in the strategy.

In addition, once key actors have been identified, the launch should start by involving and convincing them to start using the new product. Thanks to the potential buyers' engagement, SMEs could also overcome the buyers' change resistance and innovation culture issues. In addition, firms might develop several types of communication strategies in order to demonstrate and try the effectiveness of the product. Providing free or controlled trials allows the firm to understand how to build-up the user experience thus creating confidence over the products.

Besides, in order to commercialize Industry 4.0 products and to help the buyer's willingness to change, SMEs should exploit the incentives

enacted by policymakers and governments in order to support the digital transformation of the business and entrepreneurial ecosystem. The commercialization process should leverage these policy measures and promote the incentives among the key potential buyers. In addition, in the investigated case, the partnership with the University seems to have a strategic role in certifying the Industry 4.0 features both for the potential users and for the government.

Lastly, we might draw early implications concerning the coronavirus' impact on Industry 4.0 products' commercialization. Firstly, reaching and engaging new customers appears to be increasingly problematic not only because of the social distance that limits sales meetings, but also because of the customers' motivation to buy. As a matter of fact, in turbulent times the business relationship may start for the wrong reasons, mostly for an isolated customer's need, thus might turning out to be a spot initiative, rather than backed with a strong purpose to establish a long-term relationship with a supplier. Secondly, managing the relationship through digital tools makes it difficult to discuss important issues such as investments in new products and new processes. In addition, since the introduction of highly technological solutions requires training activities in on how to correctly set and use the new products, as well as personalization activities to integrate the machines into the customer production lines, being able to physically meet the buyers appears to be mandatory for successfully commercialize Industry 4.0 products. Finally, the fear related to the uncertainty of the future economic situation brought by the pandemic is turning firms into being cautious and avoiding high and risky investments.

8. Limitations and future research

The study design is subject to several limitations, some of which offer interesting avenues for developing future research.

First, the study is explorative in nature, relying on a single case study, and accordingly, the findings cannot be generalized. However, the case study is considered a single context method (one case, one industry, one country) and it is increasingly and widely applied in different research fields (Dubois and Gadde, 2002).

Notably, the study identified several elements that hinder the commercialization of new high technological products in SMEs operating in the B2B context. Then, the study of other SMEs operating in different sectors and countries might lead to different results and show different paths, thus identifying other hindering factors to NPD commercialization process.

Furthermore, the study relies on interviews with some key informants inside the firm. Albeit following a strict methodological protocol that ensures the informants' reliability, allowed the authors to have only the internal perspective in analyzing the investigated phenomenon. Consequently, future developments of the study should gather additional insights into the customers' perspective in order to better triangulate the results and support the internal key informants' perceptions.

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The supporting role of business models in the promotion of sustainable innovations in the energy sector: an explorative study in the Italian SMEs

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Abstract

Purpose of the paper: *This paper aims to analyze how small-medium enterprises (SMEs) contribute to the development of a sustainable innovations in the energy sector such as geothermal heat pumps (GHPs) by implementing effective sustainable business models.*

Methodology: *The study carried out an exploratory multiple case study with 8 SMEs operating in the Italian GHP market on the role of sustainable business models in supporting the development of sustainable innovations.*

Results: *The analysis shows that sustainable business models exert a supporting function between sustainable innovation and sustainable value creation thanks to their ability to overcome the existing barriers to adopt sustainable innovations (i.e. GHP systems). This supporting role thus results from the firms' capabilities and knowledge to assess and promote the peculiarities of selected sustainable innovation. Moreover, the analyzed business models foresee an ongoing support of customers before and after the adoption of sustainable innovation by communicating potential environmental benefits and providing additional services.*

Research limits: *The main limitation is that the findings derive from a national case study with specific market conditions for GHPs which might influence the development of sustainable business models.*

Practical implications: *The study supports firms aiming to develop and implement business models for boosting sustainable innovations through an effective assessment of selected sustainable innovation and dialogue with policy makers.*

Originality of the paper: *The study opens the black box of unexplored relationships between sustainability innovations and business models by analyzing their main components (value proposition, supply chain and public institutions, customer interface and financial model).*

Key words: business model innovation; business model for sustainability; sustainable innovation; small medium enterprises; sustainable energy

1. Introduction

A growing body of literature characterizes challenging the role of companies for achieving the sustainable development. Companies are both the root cause and solution of many environmental and social problems

(Schaltegger *et al.*, 2016). Therefore, a fundamental shift in the purpose of business and related components is required. In this regard, business model innovation can support this change through redefining and rethinking the purpose of the company and the logic of value creation for delivering sustainability (Bocken *et al.*, 2014) and growth strategy (Chen *et al.*, 2020).

The integration of sustainability into business models thus requires a reconfiguration and/or creation of products, services, competencies, infrastructures, relationships with customers and other stakeholders (Boons and Ludeke-Freund, 2013). This process should be understood and shared with companies that want to embed sustainability. In particular, the investigation of business models for sustainability and their configurations becomes strategic in more polluting and responsible for greenhouse gas emissions sectors such as the energy sector (Latapí Agudelo *et al.*, 2020).

The energy sector, indeed, is facing a deep transformation through the development of renewable energy sources and consequently the increasing decentralization of energy supply whereby passive end-users become active market players. This dynamic is triggered by innovation such as smart meters and ICT tools and increasing environmental challenges in terms of reduction of CO₂ emissions through the adoption of cleaner technologies (Kanellakis *et al.*, 2013). In this context, the traditional business solutions are not able to yield added value for suppliers, customers, and other stakeholders by taking advantage of innovative and sustainable technologies currently available in the energy sector (Burger and Luke, 2017).

This paper carries out an explorative multiple case study on the role of innovative sustainable business models in supporting the development of sustainable innovations such as geothermal heat pumps (GHPs), an attractive and sustainable technology for space heating and cooling. It analyzes how new ways of developing value proposition, supply chain, customer interface and financial models are the main strategic tool to contribute to the diffusion of decentralized and sustainable thermal energy supply at residential and commercial level and the company's growth.

The case-based research presented in this paper concerns a "substitute with renewables and natural processes" business model belonging to Bocken *et al.* (2014)'s sustainable business model archetypes for a better use of renewable energy resources in local thermal energy supply, henceforth a sustainable business model.

This sustainable business model is implemented in the promising but still juvenile Italian GHPs market (Rizzi *et al.*, 2011). GHPs are an interesting technology with a high potential of energy saving and renewable energy production that can be implemented almost everywhere (Saner *et al.*, 2010), but less known by consumers. Previous studies showed that GHPs determine a dynamic business environment characterized by pioneering small-medium enterprises (SMEs) providing sustainable and decentralized solutions for space heating and cooling (Gasbarro *et al.*, 2017). Therefore, the current study aims to investigate how these SMEs contributes to the development of a sustainable innovation such as GHPs by implementing effective and innovative sustainable business models that might play a crucial role in the company's growth. Indeed,

the investigation of the role of sustainable business models in supporting sustainable innovation can provide evidence for helping SMEs to identify and implement growth strategies.

The remainder of the paper is structured as follows: Section 2 presents the theoretical framework on sustainable business models, and their relationship with sustainable innovation as well as related archetypes of sustainable business model innovations. Section 3 describes and discusses the methods used for gathering and analyzing data. Section 4 describes and analyzes the sustainable business models under study. Section 5 discusses the findings regarding the role of sustainable business models in supporting sustainable innovations such as GHPs and provides conclusions concerning the usefulness and implications of this research, its limitations, and directions for future research.

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2. Theoretical background

2.1 *Business model for sustainability: a strategic means to change*

Several scholars provide different perspectives of the business model concept moving from more holistic approaches of doing business (Magretta, 2002; Zott and Amit, 2010; Beattie and Smith, 2013) to organizational and financial dimensions of a business (Teece, 2010), and an overall description of business model components (Osterwalder and Pigneur, 2010).

Although above-mentioned various perspectives, a business model is a concept describing the rationale for how an organization creates, delivers, and captures value, and manages the realization of a firm's strategy (Osterwalder and Pigneur, 2010; Teece, 2010). Business models can thus be defined as a "set of interdependent organizational activities" (Zott and Amit, 2010) and their function is to create value and capture a portion of that value through a series of activities from supply of raw materials to the final consumers (Chesbrough, 2007).

In this context, business models have been considered as a remarkable contributor of sustainable development by creating superior customer value and positive impact on society (Lüdeke-Freund, 2010). Thus, the integration of sustainable dimension into business models can assume different configurations. Therefore, scholars and practitioners are exploring the role of sustainable business models in achieving both economic prosperity and positive effects for the natural environment and society (Boons *et al.*, 2013).

Early work on "sustainable business models" (alternatively defined as "business models for sustainability") dealt with organizational principles of corporate sustainability (Stubb and Cocklin, 2008) or with the identification of business models as means to re-think products, processes and organizations based on the life cycle approach (Hansen *et al.*, 2009; Wells and Nieuwenhuis, 2004). Other studies investigated the relationship between business models and business cases for sustainability (Schaltegger *et al.*, 2012).

All these approaches of investigation focus on organizational value creation with the integration of social and environmental values that can characterize sustainable business models together with related organizational, market and societal transformations. However, an unequivocally recognized definition of the sustainable business model has been debated. In this regard, Boons and Lüdeke-Freund (2013) described a set of requirements for each constituting element of sustainable business models: the value proposition provides ecological and/or social value associated with economic value through the bid of products and services, the supply chain must be regulated by sustainable principles, the customer interface must implement a strong relationship with customers and other stakeholders to assume responsibility for production and consumption paradigms, and the financial model should distribute equitably economic costs and benefits among all actors involved. Moreover, Lüdeke-Freund (2020) argued that the implementation of sustainable business models is a means to foster new business opportunities for sustainability and stimulate organizational development.

Thus, sustainable business models represent a mediating device for implementing a strategy aiming at the business case for sustainability and creating fit between different areas of a firm and its business environment as well as the social actors (Schaltegger *et al.*, 2012; Lüdeke-Freund, 2020). Therefore, the analysis of the constituting elements of sustainable business models might help understanding how companies react to changes in the business environment to tackle environmental and social issues through the implementation of sustainable innovation. In particular, the present study aims to answer to the following research question:

RQ1: How do SMEs operating in the GHPs market develop an effective business model for tackling sustainable challenges in the energy sector?

2.2 Interrelation between sustainability innovation and business model

The integration of economic, environmental, and social concerns at a company level requires new ways of thinking and the adoption of sustainable innovations to effectively pursue sustainable development (Longoni and Cagliano, 2018). In this regard, sustainable innovation is defined as “intentional changes to an organization's philosophy and values, as well as to its products, processes or practices, to serve the specific purpose of creating and realizing social and environmental values in addition to economic returns” (Adams *et al.*, 2016).

Since sustainable innovations pursue the spreading of clean technologies, the implementation of new organizational forms, or the resolution of social issues, business models assume different configurations (Boons and Lüdeke-Freund, 2013).

Lüdeke-Freund (2020) argued that business models related to clean technologies can be distinguished: “(a) new business models can employ given technologies; (b) given business models can take up new technologies; and (c) new business models can be triggered by new technologies and vice versa”. However, business models can support the understanding of the logic of production and consumption systems (Wells, 2008) and assume

a role of mediator between how technologies are made and how they are used (Boons and Lüdeke-Freund, 2013).

Organizational innovations represent the change in the way of doing business toward sustainable development and related business models to promote organizational and cultural changes for answering increasing stakeholder demands but also alternative economic paradigms to integrate needs and aspirations of sustainability (Stubb and Cocklin, 2008; Boons and Lüdeke-Freund, 2013). Therefore, sustainable business models result in an aggregate of several organizational dimensions (Boons and Lüdeke-Freund, 2013).

Social innovations require business models able to support products and services with a social purpose or entrepreneurial and managerial activities aiming to develop social enterprises (Boons and Lüdeke-Freund, 2013). In this context, sustainable business models have the primary purpose of changing the focus of value creation. Seelos and Mair (2005) highlighted that earning money stems from the social value creation.

These three main categories of sustainable innovations highlight the strong relationship with business models. Lüdeke-Freund (2020) pointed out the need for an alignment between sustainability innovations and business models to increase the likelihood of business success of these innovations. Therefore, different degrees of business model innovations are required. Schaltegger *et al.* (2012) identified three typologies of business model innovations: defensive, accommodative, and proactive. Defensive strategies consist of business model adjustment to safeguard the existing business model through risk and cost reduction measures according to a compliance perspective. Accommodative strategies require the implementation of some improvements and integrations of the current business model by considering environmental and social issues. Proactive strategies pursue the redesign of the business model according to sustainability principles.

All these possible configurations of the business model innovation for sustainability can make “challenging for firms to understand how to innovate their business models” (Evans *et al.*, 2017). However, Evans *et al.* (2017) argued that the development of innovative sustainable business models cannot ignore some theoretical foundations related to the concept of creating sustainable value for multiple stakeholders including the natural environment and society, the change of value network of a firm in terms of new purpose, design and governance, systemic attention to stakeholder interests and the internalization of externalities through product-service system (PSS).

Bocken *et al.* (2014) thus categorized possible configurations of sustainable business models in eight archetypes to identify and promote mechanisms and solutions that might strengthen and enhance the embeddedness of sustainability into business purpose and processes. The archetypes aim to foster the development of innovation capacity and new development paths. The analysis stated the importance to investigate sustainable business models according to the level of innovation and technology, system perspective, innovative collaborative approaches as well as education and awareness.

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Therefore, investigation on specific archetypes can support firms in the identification and design of strategies for implementing suitable and effective innovative sustainable business model. For this reason, the study focuses on the sustainable business model archetype “substitute with renewables and natural processes” that consists of the substitution of finite materials with renewable materials through renewable energy supply systems (Bocken *et al.*, 2014). This archetype is adopted to analyze how innovative sustainable business models support SMEs in the implementation of sustainable innovations, such as GHPs, in the energy sector, which leads to our second research question:

RQ2: How does the implemented business model support a sustainable innovation such as GHPs in the energy sector?

3. Methods and data

3.1 Sample definition

We carried out an exploratory multiple case study (Yin, 2009) on the role of innovative sustainable business models in supporting the development of sustainable innovations such as GHPs.

The criteria for the selection of case studies were the implementation of Bocken *et al.* (2014)'s sustainable business model archetype “substitute with renewables and natural processes” to promote and provide sustainable and decentralized solutions for space heating and cooling through GHPs. The technology of GHPs represents an opportunity to trigger energy saving and renewable energy production in local thermal energy supply (Saner *et al.*, 2010). Moreover, GHPs are associated with a dynamic business environment consisting of SMEs (Gasbarro *et al.*, 2017). Therefore, the study selected SMEs operating in the Italian GHP market that has a high potential of development (Rizzi *et al.*, 2011). Thus, an investigation of sustainable business models implemented by SMEs representing most of firms in the Italian GHP market contributes to understand the strategic role of these business models in supporting a sustainable innovation such as GHPs.

The analysis used a purposeful sampling to identify SMEs which have implemented an effective and innovative sustainable business model for fostering GHPs. We selected SMEs listed in the database of the international project Repower , Lombardy Region database for GHPs and specialized websites to gather all relevant information for avoiding the risk of including unsuitable firms. Indeed, firms operating in Italian GHPs market usually are difficult to identify and list because there is not an official national register.

These firms cover more than one role along the Italian GHP supply chain confirming Gasbarro *et al.* (2018)'s evidence. Indeed, heating engineers are directly involved in the design, assembly, quality control and procurement of GHP installation. Due to the peculiarity of the multiple case study methodology, the statistical representativeness of the sample was considered less important than the opportunity of gathering detailed

information. Therefore, 8 out of 19 firms identified and contacted agreed to provide us with detailed information through interview.

Semi-structured phone calls and face-to-face interviews were carried out from May to September 2018. The interviews were based on a semi-structured protocol investigating the firm's competences in developing GHP systems, components of sustainable business model and related barriers. Given the explorative nature of the research, we asked the interviewees to narrate the path that induced the firm to develop a business model able to address sustainability challenges through GHPs and guarantee the company's growth, and the drivers and barriers of the adoption process. Given the small size of the firms, interviews were carried out with the firms' founder or the owner. Each interview lasted between 45 to 60 min. All interviews were recorded and subsequently transcribed. Table 1 shows the characteristics of the firms participating in the study.

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 promotion of sustainable
 innovations in the energy
 sector: an explorative study
 in the Italian SMEs

Tab. 1: Overview of case characteristics

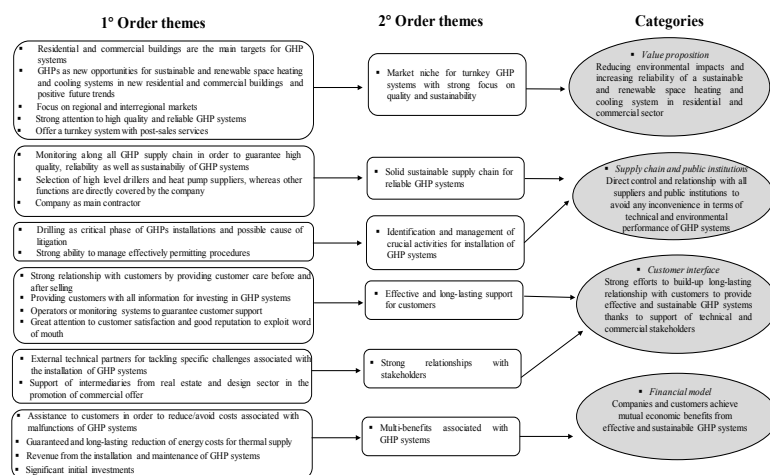
Company	Number of employees	Turnover € (2016)
SMEGeo1	2	448.481
SMEGeo2	2	830.399
SMEGeo3	n.a.	356.420
SMEGeo4	7	1.061.706
SMEGeo5	8	1.067.454
SMEGeo6	27	6.031.454
SMEGeo7	4	981.446
SMEGeo8	1	50.821

Source: our elaboration of Orbis database

Each interview was triangulated with documentation provided by the interviewed firm or collected via web research on the firm's website or using secondary data sources. We analyzed around 1,200 pages of relevant documents including financial reports, sustainability reports, firms' websites, press releases, and internal policies. The data saturation criterion was adopted to finish the data collection.

The data analysis was undertaken by classifying collected information into themes and then categories (Gioia *et al.*, 2013). The resulting themes were a combination of predefined codes based on our literature review and codes resulted from the data (see Figure 1). The entire coding process was done through an inductive and iterative mode aimed at attributing agreed codes to discourses and narratives emerging from our data (Corley and Gioia, 2004). Moreover, we alternated between independently coding data based on categorizations and then jointly appraising the fit of the current categorization scheme and making refinements to the scheme to minimize researcher biases during the data analysis.

Fig. 1: Data structure



Source: our elaboration

4. Results

In this section we describe the components of sustainable business models adopted by interviewed SMEs operating in the Italian GHP market. In this regard, respondents provide a clear framework of the configurations of their business models to support the development of GHPs by assuming a proactive strategy. As Schaltegger *et al.* (2012) argued that a proactive strategy pursues the redesign of the business model by integrating environmental objectives into the core business logic. Indeed, the interviewed firms implement innovative business models to promote GHP systems which allow the achievement of renewable and energy efficiency targets in the local thermal energy supply. Therefore, firms make a special effort to overcome the existing skepticism on GHPs by providing customers with useful information concerning economic and environmental benefits associated with these technologies. Moreover, firms aim to enhance the quality and typology of the offer. In doing so, their business models integrate some additional services that increase the reliability and sustainability of GHP systems such as monitoring activities during GHP systems' lifespan and ongoing assistance.

This proactive strategy was analyzed through the description of Boons and Lüdeke-Freund (2013)'s constituting elements of sustainable business models: value proposition, supply chain, customer interface, and financial model.

4.1 Value proposition

SMEs declared a value proposition that pursues the reduction of environmental impacts and the increase of the reliability of a sustainable and renewable space heating and cooling system in the residential and

commercial sector. Firms have developed this value proposition because they consider GHPs as a new opportunity for implementing sustainable and renewable space heating and cooling systems as declared SMEGeo8: *“GHPs can trigger the implementation of more sustainable space heating and cooling installations and can have a positive market trend in the future”*.

Even though these firms operate in regional and interregional markets, they make a special effort to guarantee high quality and reliable GHPs systems as confirmed by SMEGeo4: *“[...] we work with a higher quality”*. Moreover, the reliability of GHP systems is necessary to provide turnkey installations and real-time customer assistance. Indeed, SMEGeo5 has designed its offer to *“provide real-time support and register the performances of the plants on a cloud server, shared with the customer”*.

The interviews show another crucial aspect associated with the great diffusion of GHP systems in residential and commercial/industrial buildings, whereas the public sector represents a less attractive and marginal market segment. According to some firms, *“the residential sector represents the majority of installed plants, but this is changing year after year: larger plants are constantly increasing”* (SMEGeo4). Therefore, commercial and industrial segments might have a further development in the future, although some firms argued that *“two thirds of the plants that we installed supply commercial or industrial users [...]”* (SMEGeo2). Both segments require high quality standards and the achievement of environmental targets in terms of energy efficiency and reduction of CO₂ emissions. Thus, firms understanding the need to guarantee their niche market by satisfying high demanding customers have designed value proposition focused on quality and sustainability principles.

4.2 Supply chain and public institutions

The analysis highlights the importance of building strong relationships with suppliers for the implementation of reliable, effective, and sustainable GHP systems. These relationships result from a trust between the interviewed firms and the suppliers. For instance, SMEGeo4 stated: *“[...] we have two suppliers which usually work with us, and we trust them”*. In this regard, suppliers can support the implementation of GHP systems through asking *“the supplier for advice regarding possible doubts on the sizing and correct functionality of the plant”* (SMEGeo6). Moreover, firms want to develop long-lasting cooperation with suppliers able to cover specific activities and functions not belonging to their internal competences and expertise. Therefore, firms carry out the selection and supervision of specific functions such as drilling and the supply of heat pumps. Indeed, SMEGeo6 declared that they *“[...] involve external companies only for drilling, [...]. We do not have further partnerships, except the one with the heat pump supplier; [...]”*.

The interviews confirm that SMEs very often *“[...] work as main contractors”* (SMEGeo5). Accordingly, they manage internal competences such as the design and the sale of GHP systems by integrating other external competences of suppliers. Their role thus guarantees the overview of the supply chain to avoid potential criticalities during the installation of

GHP systems. An example is represented by the drilling. SMEGeo8 stated that “[...] during the construction, the drilling phase is problematic. We have always worked well, both in terms of design and sizing, and we have never undergone a litigation; other companies had this kind of problem”.

Another aspect that SMEs cannot overlook regards the permitting procedures. The achievement of permissions requires great effort and time. Firms should be able to dialogue with public institutions by “[...] explaining their activities” (SMEGeo8). Thus, a successful implementation of GHPs results from the ability to manage all the steps of permitting procedure. Indeed, SMEGeo1 recognized that it is important to “[...] make each step according to the right procedure (considering permission and design)”.

4.3 Customer interface

The investigation shows that firms have developed a strong relationship with the customers by providing effective and sustainable GHP systems. The effectiveness and sustainability of these systems depends on the long-lasting support of the customers through the collaboration of the firm's technical and commercial stakeholders. Therefore, the firms interviewed want to “[...] follow personally every phase, being available also to show up if needed, even years after the installation” (SMEGeo4). They make every effort to provide customer care before but also after selling. Firms provide customers with all information to make a decision concerning the investments in GHP systems. Sometimes firms propose the opportunity of carrying out “[...] visits of operating plants to convince the potential customer” (SMEGeo8).

Moreover, some firms guarantee continuous customer support through the availability of operators or the implementation of monitoring systems. SMEGeo5 declared that “[...], every plant which we install is monitored from remote, and we provide real-time support and register the performances of the plants on a cloud server, shared with the customer”. This continuous support aims to achieve customer satisfaction so that firms have a good reputation and “[...] have mainly worked through ‘word of mouth’” (SMEGeo5).

The supply of effective GHP systems is also based on the development of strong relationships with technical partners for tackling specific issues associated with the installation of GHPs. SMEGeo7 stated that: “Drilling is assigned to some partners with which, in some cases, there are also agreements of corporate nature”. The relationship with stakeholders also includes the support of intermediaries “with whom we successfully collaborate since some years. These intermediaries belong to the real estate sector or have commercial experience” (SMEGeo2).

4.4 Financial model

Firms have developed a financial model able to provide multi-benefits associated with GHP systems. Indeed, firms and customers achieve mutual economic benefits resulting from the installation of GHPs.

Firms declared their attention to provide an effective system and help customers to reduce and avoid costs due to malfunctions of GHPs. Effective

GHP systems can guarantee a reduction of energy costs associated with thermal supply. Therefore, “[...] customers should understand that there are potential advantages [...]” (SMEGeo4). The understanding of economic benefits associated with GHP systems overcomes potential oppositions to invest since this technical solution is less known and needs a significant investment.

Firms make revenues because they carry out the installation and maintenance activities of GHP systems. Concerning the installation, firms “manage directly each part of the installation phase: design, assembly, quality control, procurement of technical components, etc.” (SMEGeo1). Maintenance activities require a continuous effort during the lifespan of the plant by implementing a monitoring system and/or providing an operator.

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5. Discussion and conclusions

The study, by carrying out an explorative multiple case study, contributes to the empirical analysis of the components of sustainable business models and their interplay with sustainable innovations such as GHPs, an attractive and sustainable technology for space heating and cooling. Analyzing the main components of these sustainable business models (value proposition, supply chain and public institutions, customer interface and financial model), the study opens the black box of unexplored relationships between sustainability innovations and business models without overlooking the identification of the type of implemented business model innovation.

The paper identifies the development of a proactive strategy within sustainable business models, as described by Schaltegger *et al.* (2012), able to redesign the business model by integrating sustainability objectives into the core business logic.

The analysis confirms the integration of Evans *et al.* (2017)’s theoretical foundations into developed sustainable business models. First, sustainable business models pursue mutual benefits for companies and customers without ignoring the positive effects for the natural environment and society. Indeed, customers installing GHP systems enjoy a decentralized and sustainable thermal energy supply at residential and commercial level associated with a reduction of energy costs, energy consumption and CO₂ emissions. Second, the analyzed sustainable business models show an effective engagement of multiple stakeholders along the GHP’s supply chain and institutional context (i.e. public authorities for permitting procedures) through stable and long-term relationships and beneficial results for all actors involved. Third, sustainable business models integrate a service-based business concept into their framework by providing not only a turnkey installation but also a real-time customer assistance and/or monitoring system to avoid malfunctions and associated environmental impact. Therefore, these business models promote a PSS able to fulfill customer needs through the combination of tangible products and intangible services according to sustainability principles. We thus argue that:

P1: The more innovative business models address mutual benefits for companies, customers, the natural environment, and society, the more likely they design and promote actions for integrating sustainability objectives in the companies' strategy.

P2: The more innovative business models establish long-term relationships and benefits for stakeholders along the supply chain and institutional context, the more likely they identify and address sustainability objectives in the companies' strategy.

P3: The more innovative business models assume a service-based business approach, the more likely they design and promote actions for integrating sustainability objectives in the companies' strategy.

Moreover, the analyzed business models promote the firms' great effort to support customers before and after the selling of GHP systems representing a sustainable innovation that might be difficult to communicate to customers even though it has several advantages in terms of enhancement of environmental performance and reduction of energy costs during its lifespan. Therefore, these business models communicate potential environmental benefits of GHP systems together with their technical effectiveness.

Sustainable business models are also characterized by their commitment to overcome the customers' potential resistance to GHP in terms of the management of technical-regulatory issues and relationship with all actors involved in the supply chain.

P4: The more sustainable business models can communicate environmental benefits of promoted sustainable innovations, the more likely sustainable innovations are promoted.

P5: The more sustainable business models tackle potential resistance to sustainable innovations, the more likely sustainable innovations are promoted.

As stated by Lüdeke-Freund (2020), these sustainable business models exert a supporting function between sustainable innovation and sustainable value creation thanks to their ability to overcome the existing barriers to adopt GHPs. The supporting role of the sustainable business model thus results from the firms' capabilities and knowledge to assess and analyze the peculiarities of a specific sustainable innovation (i.e. GHP systems). The presence of specific capabilities and knowledge associated with a selected sustainable innovation represents a competitive advantage for the analyzed firms and guarantees the business success of their own sustainable innovation through the development of a suitable business model. Moreover, these firms can design and implement specific growth strategies associated with sustainability principles. However, these firms as SMEs facing resource constraints prefer to operate in regional and interregional markets where they have a full control of the institutional

context and their supply chain (e.g. suppliers, partners, public authorities, etc.) and can avoid or reduce potential risks by guaranteeing a high quality installations and services. The choice of developing sustainable business models that operate in a niche market currently supports the success of selected sustainable innovation but can be a potential risk for its future growth and sustainable value creation. Therefore, business models should be transformed or renewed to trigger a long-term transition towards sustainable mass markets by taking into account the institutional context (Schaltegger *et al.*, 2016; Gasbarro *et al.*, 2017). In this regard, sustainable business models can benefit from a specific policy support. This leads to the following propositions:

P6: The more companies have capabilities and knowledge to analyze the peculiarities of sustainable innovation, the more likely sustainable business models play a supporting role between sustainable innovations and sustainable value creation.

P7: The more companies face resource constraints, the more likely sustainable business models support sustainable innovations in a niche market.

The study also provides some managerial implications. The empirical results suggest that companies who want to develop business models for boosting sustainable innovations should identify the peculiarities of selected sustainable innovations and tackle potential issues that can produce opposition to their adoption. Furthermore, companies should identify and potentially acquire internal and external capabilities to support an effective implementation of sustainable innovations without ignoring the availability of their resources. Thus, the findings of this study can support the implementation of promotion and communication actions in sectors characterized by unknown or less diffused technologies which require detailed information for persuading potential customers. Therefore, these above-mentioned activities provide companies with all the necessary components for designing and implementing effective strategies which strengthen competitive and growth opportunities associated with sustainable innovations. However, this process can be influenced by the size of companies. Indeed, SMEs should assess the external acquisition or internal development of capabilities by considering potential resource constraints. Another managerial implication regards the ability of companies to dialogue with policy makers to foster the implementation of effective policies to remove non-technical barriers to the implementation of sustainable measures and opportunities (i.e. renewable energy and energy efficient solutions).

There are some limitations to this study. First, the research is limited by the selection of Italian SMEs for analysis. The selected SMEs have implemented an effective and innovative sustainable business model in the juvenile market that has a high potential of development. Further studies might investigate the development of sustainable business models for fostering sustainable innovations in mature markets. Second, the study

investigates the development and implementation of innovative sustainable business model in SMEs. Future studies might focus on large companies to understand if sustainable business models assume a different configuration compared to SMEs. Third, the analysis focuses on the development of business models to exploit sustainable innovations but does not compare the development of business models to sustain traditional innovations. Further investigation might examine the dynamics between the development of business models for sustainable innovation and traditional ones.

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Environmental sustainability and food packaging. The role of packing material in purchasing decisions¹

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Abstract

Purpose of the paper: 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 in the packaging management, one of the relevant components of the marketing mix.

Originality of the paper: 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 the packaging material in the consumers' evaluation process.

Key words: packaging material; attitude; perceived quality; perceived risk; purchase intention; willingness to pay

1. Introduction

The primary function of packaging is to contain and protect the product from agents that can compromise its quality (i.e., dirt, moisture, breakage, shocks, vibrations, compression, changes in temperature, theft). Secondary, and equally important, is the information function relating to the knowledge and use of the product: description, composition, size, place of production, brand, guarantees, instructions for disposal.

In the current market context, characterized by growing competition and important changes in the relationship between companies and consumers, packaging takes on a strategic marketing role (Rundh, 2005;

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Luceri *et al.*, 2020). This is due to its ability to attract the attention of consumers when they are in front of the store shelf, to facilitate brand recognition, and to influence the perception and evaluation of the product quality, personality and uniqueness. Thanks to this ability, the product packaging is fully part of the factors that determine brand positioning and image in terms of brand recognition, brand association (e.g., George, 2005; Keller, 2009; Orth and Malkewitz, 2008; Silayoi and Speece, 2007; Stewart, 2004; Underwood and Ozanne, 1998) and brand choice (e.g., McDaniel and Baker, 1977; Prendergast and Pitt, 1996; Rettie and Brewer, 2000). Therefore, decisions related to the communicative elements of the packaging are of crucial importance. Given the influence on the consumer's evaluation and decision-making process, developing in-depth knowledge on these elements is fundamental for improving product communication and supporting the sales strategy (Vergura and Luceri, 2018). The present study intends to contribute to the scientific debate on the marketing role of the packaging by focusing the attention on the packing material.

The marketing literature has shown that product evaluation and purchase decision are influenced by both the verbal and visual elements of the package (e.g., Andrews *et al.*, 2013; Aschemann-Witzel and Hamm, 2010; Faulkner *et al.*, 2014; Garretson and Burton, 2000; Gorton *et al.*, 2010; Hoegg and Alba, 2011; Hogg *et al.*, 2010; Liaukonyte *et al.*, 2013; Luceri and Zerbini, 2019; Luceri *et al.*, 2020; Raghubir and Greenleaf, 2006; Saba *et al.*, 2010; Schoormans and Robben, 1997; Silayoi and Speece, 2004; Tan and Tan, 2007; Underwood *et al.*, 2001; Underwood and Klein, 2002; Wansink and Chandon, 2006). The first ones include the information provided by the package, namely ingredients, country of origin and nutritional value; the second ones concern colour, shape, material and graphic signs (e.g., brand, logo, product image). Most of the studies have focused on elements such as colour, shape, graphics and nutritional claims (i.e. information regarding the nutritional properties of a product). By contrast, the marketing role of packing material is much less investigated; furthermore, most studies have concentrated on its sustainability characteristics (e.g., Barber, 2010; Magnier and Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015) rather than its composition (e.g., Adam and Ali, 2014; Holliswood *et al.*, 2013; Kariyawasam *et al.*, 2006; Luceri *et al.*, 2020). To fill the aforementioned gaps in the literature, this article proposes and discusses the results of an experimental study aimed at investigating the consumers' evaluation and purchase intention towards the package materials (plastic, glass, polylaminate, tin) with which the following food categories are mainly marketed: milk, extra virgin olive oil, tomato sauce and fruit juice. The article is structured as follows. The next paragraph is dedicated to the theoretical background and the research objective. Subsequently, the methodology used in the study and the results obtained are described. The work ends with a discussion of the managerial implications and prospects for future research.

2. Literature review

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Environmental
sustainability and food
packaging. The role
of packing material in
purchasing decisions

Today the product packaging takes a role similar to that of other marketing levers, being a vehicle for communication and branding (Rettie and Brewer, 2000). Several factors explain its importance in the purchasing decision-making process. First, the packaging is the last element that consumers see before making the final purchase choice when they are in front of the store shelf (whether physical or virtual). In this circumstance, its characteristics - such as colour, graphics and information provided - have a decisive impact on the identification of the product (i.e., on being noticed or ignored) and on its attractiveness. This is true for impulse goods, namely products with unplanned purchase (Herrington and Capella, 1995), as well as for goods about which the consumer does not have preliminary information and/or has not developed expectations. These are all cases in which the likelihood that the purchase intention and decision are developed according to what is communicated in the store increases. Second, today consumers are often forced to buy quickly due to the reduction in the time available for carrying out daily activities. This is a situational influence that can lead to buying fewer products than actual needs and/or what is planned (Herrington and Capella, 1995). A package capable of attracting attention in the store fulfils the important function of helping the consumer to fill the shopping cart quickly (Silayoi and Speece, 2004; 2007). These evidences have led some authors to define packaging as an intrinsic characteristic of the product or brand that informs consumers about its personality and quality, influences the brand recognition and creates positive or negative associations with the brand (e.g., Keller, 2009; Orth and Malkewitz, 2008; Silayoi and Speece, 2007).

Given the importance of the communicative role of the product package, marketing literature has been interested in studying the impact of its verbal (e.g., ingredients, nutritional value, country of production and nutritional claims) and visual signs (colour, size, shape, material and graphics) on consumer behaviour. Many scholars have highlighted that both types of elements are able to attract the consumer attention, create expectations about the contents of the packing and, therefore, to influence the product evaluation and the purchase decision (e.g., Andrews *et al.*, 2013; Aschemann-Witzel and Hamm, 2010; Barber, 2010; Faulkner *et al.*, 2014; Garretson and Burton, 2000; Gorton *et al.*, 2010; Hoegg and Alba, 2011; Hogg *et al.*, 2010; Liaukonyte *et al.*, 2013; Luceri *et al.*, 2020; Luceri and Zerbinì, 2019; Magnier and Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015; Raghurir and Greenleaf, 2006; Saba *et al.*, 2010; Schoormans and Robben, 1997; Silayoi and Speece, 2004; 2007; Tan and Tan, 2007; Underwood *et al.*, 2001; Underwood and Klein, 2002; Wansink and Chandon, 2006). However, despite the strong interest in this topic, the impact of packaging material on the consumers' evaluation and perception is still poorly explored. Most of the studies have investigated the communicative power and the ability to attribute value to the product of verbal and visual elements like colour, shape, graphics and claims. The opportunities of improving the package performance (healthiness and safety of the content, practicality, sustainability) thanks to new solutions or

combinations of materials offered by modern technologies have not yet fully attracted the interest of the marketing literature. Only the sustainability characteristics of the packaging have been further investigated. Specifically, the researchers focused on the comparison between sustainable and non-sustainable packages. This is justified by the growing concern for the environmental impact of products' production and consumption by both consumers and companies (Marthino, 2015). The first have become more careful in purchasing choices as a result of the increased awareness that individual behaviours generate collective negative consequences on the planet health (Kilbourne and Pickett, 2008; Shaw and Newholm, 2002). For their part, companies have integrated sustainability into their marketing strategy to reassure stakeholders, in particular the consumers. Among the actions undertaken, the adoption of sustainable packaging to preserve and protect the products stands out in importance. In light of this market interest in environmental friendly packaging, some authors have analysed the impact of sustainable packaging on consumers' (a) evaluation process, (b) attitude and (c) behaviour during both the purchase phase and the disposal/recycling phase (e.g., Barber, 2010; Magnier and Schoormans, 2015; Magnier *et al.*, 2016; Marthino *et al.*, 2015). For example, it has been shown that the product quality perception increases when it is protected by a sustainable package (Magnier *et al.*, 2016). Other studies have focused on the effect of the transparency of the material - namely, the possibility of seeing or not the product - on the product perception and purchase intention (Billeter *et al.*, 2012; Chandran *et al.*, 2019; Simmonds *et al.*, 2018; Vilmay-Yavetz and Koren, 2013). Few contributions in literature have investigated the relationship between packaging material and consumer behaviour. The majority focused on the fresh milk category and found consumer preference for glass and polylaminate (more commonly known as Tetrapak, the trademark of the company that made up tetrahedron-shaped plastic-coated paper carton) over carton and plastic (Adam and Ali, 2014; Holliswood *et al.*, 2013; Kariyawasam *et al.*, 2006). Polylaminate is considered safe, capable of guaranteeing the purity of the content and easy to handle (Kariyawasam *et al.*, 2006). Despite showing the highest purchase intention (Adam and Ali, 2014), glass has some undoubted disadvantages: the heaviness and the need for washing before disposal (Kariyawasam *et al.*, 2006). More recently, Luceri *et al.* (2020) investigated the quality judgment and the consumer purchase intention with respect to two packaging materials for extra virgin olive oil: polylaminate and glass. Results showed that the attitude towards the product and its assessment in terms of perceived quality and risk are worse in the case of polylaminate and translate into a lower purchase intention and a lower willingness to pay.

In light of what emerged from the literature, this study intends to enrich the knowledge on the role of packaging material in order to provide useful insights for the marketing policies of food companies. The goal is to investigate if and how the consumer's perception and evaluation, as well as the purchase intention, differ when products are packaged in different materials. Therefore, the following research question is formulated:

RQ: Does the packaging material influence the consumer's product perception, evaluation, and purchase intention?

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In order to answer the research question, several constructs which are relevant in the consumers' decision-making process and allow to measure their assessments, perceptions, and behavioural intention were investigated: attitude towards the product, perceived risk, perceived quality, purchase intention, and willingness to pay.

Attitude is defined as the degree to which an individual has a favourable or unfavourable evaluation or appraisal towards an object that can be a subject, an event, or a behaviour (Ajzen and Fishbein, 2005). Attitude creation is a process that arises from learning, experience and exposure to environmental stimuli. In the context of purchasing and consumption choices, these stimuli derive from the marketing environment (Bagozzi, 1986; Wang and Heitmeyer, 2006). Since packaging represents a marketing lever, no wonder that packaging cues - and, among these, packaging material - are able to influence the creation of the consumer's attitude towards the product. Perceived risk is defined as the degree to which individuals feel the uncertainty and consequences associated with their actions, on a rational and objective level as well as on an emotional and subjective level (Bauer, 1960). It is a cognitive process that has received great attention in literature due to the crucial role it plays in different contexts, including purchasing decision making (e.g., Hunter-Jones *et al.*, 2008; Kwun and Oh, 2004; Liao *et al.*, 2010; Pavlou, 2003; Stone and Grønhaug, 1993). Potential risk choices can, indeed, negatively influence the behaviour of individuals (e.g., Keil *et al.*, 2000; Nicolaou and McKnight, 2006). Perceived product quality represents the consumer judgment of the overall excellence or superiority of a product (Anselmsson *et al.*, 2007). As such, quality expectation is able to influence the consumer choice among different product alternatives (e.g., Narasimhan and Sen, 1992; Steenkamp, 1989; Steenkamp and Van Trijp, 1996). Moreover, marketing literature highlighted that when information regarding the product quality is difficult to pre-obtain, packaging attributes are used as proxy of quality (Ampuero and Vila, 2006; Inch and Florek, 2009; Honea and Horsky, 2012; Venter *et al.*, 2011). Considering this evidence, if a high-risk perception associated to the use of a product packaged in a particular material can decrease the purchase intention, a high perceived quality can act in the opposite direction favouring the choice. The last measured dimension is the behavioural intention, operationalized as buying intention and willingness to pay.

3. Methodology

A 4 x 3 between subject factorial design was conducted to manipulate the product category (milk, extra virgin olive oil, tomato sauce and fruit juice) and the packaging material (glass, polylaminate, plastic/tin). For each product category, in order to control the potential bias due to brand familiarity, a fictional brand was identified, and three versions of the pack

were created, one for each material identified. Specifically, plastic, glass and poly laminate were used for fruit juice and milk, while tin instead of plastic was used for tomato sauce and extra virgin olive oil. Combining the product category and the pack material, twelve experimental stimuli (Figure 1) were created using a packaging design software. Each stimulus was shown to a single experimental group.

Fig. 1: Experimental stimuli



Source: own elaboration

In total, 270 subjects took part in the study. The participants' average age was 30.9 years old, ranging from 20 to 68 (SD = 12.56), while 70 per cent were female and 30 per cent male. The respondents were equally and randomly distributed among the twelve experimental conditions and balanced by gender and age. The average age was 30.43 years old for milk (n=70), 32.47 years old for extra virgin olive oil (n=68), 30.54 years old for tomato sauce (n=66) and 30.14 for fruit juice (n=64).

During the recruitment phase, the socio-demographic characteristics and the frequency of purchase of the categories under study were identified; this information allowed to select, for each group, only buyers of the category. In addition, in order to control for the expected bias generated by the predisposition towards sustainability and environmental protection, the attitude towards the environment was measured using the five-item scale developed by De Magistris and Gracia (2008) (Alpha=0.908). The Mann-Whitney U non-parametric test showed no significant differences among experimental groups for each product category (p>0.05).

The experiment was conducted in a laboratory. Each participant was welcomed into the room and informed about the procedures for carrying out the study. They were seated in front of a computer for the video

administration of the experimental stimuli. Subsequently, each subject filled in a structured questionnaire aimed at measuring the variables of interest through scales that have been well validated in the literature. Attitude towards the product was assessed through three sets of seven-point bipolar adjectives (Mueling *et al.*, 1991). The five-item scale proposed by Jo (2007) was used to measure the perceived product quality, while the four-item scale developed by Keh and Pang (2010) was used to measure the perceived risk. Finally, purchase intention and willingness to pay were assessed using, respectively, Putrevu (2008) and Konuk (2019) scales, each one composed of three items. All the items, except those related to the attitude towards the product, were detected on a self-anchored scale at 7 points (1=completely disagree; 7=completely agree). Table 1 shows the scales used and the relative internal reliability indices (Cronbach's α).

Data analysis was performed using the IBM SPSS statistical software (release 25.0).

Tab. 1: Scales' items and Cronbach's alphas

Variables	Items	Cronbach's α
Attitude towards the product (Mueling, Laczniak and Stoltman, 1991)	Bad - Good Unfavorable - Favorable Negative - Positive	0.938
Perceived quality (Jo, 2007)	The "name of the product" packed in the "name of the material" has an excellent quality The "name of the product" packed in the "name of the material" seems reliable The "name of the product" packed in the "name of the material" is safe The "name of the product" packed in the "name of the material" has excellent characteristics The "name of the product" packed in the "name of the material" can give me an excellent consumer experience	0.939
Perceived risk (Keh and Pang, 2010)	The thought of buying "name of the product" packed in the "name of the material" makes me feel uncomfortable The thought of buying "name of the product" packed in the "name of the material" gives me a feeling of anxiety The thought of buying "name of the product" packed in the "name of the material" makes me feel tension The thought of buying "name of the product" packed in the "name of the material" worries me a lot	0.935
Purchase intention (Putrevu, 2008)	The next time I buy "name of the product", I will consider "name of the product" packed in the "name of the material" The next time I consider purchasing "name of the product", I will collect information on "name of the product" packed in the "name of the material" The next time I buy "name of the product", I will buy "name of the product" packed in the "name of the material"	0.724
Willingness to pay (Konuk, 2019)	I am willing to spend extra in order to buy "name of the product" packed in the "name of the material" It is acceptable to pay a premium to purchase "name of the product" packed in the "name of the material" I am willing to pay more for "name of the product" packed in the "name of the material"	0.961

Source: own elaboration

4. Results

To answer the research question, the Mann-Whitney U non-parametric test was used. The means of the variables of interest for each material in the four product categories investigated are shown in Table 2.

Tab. 2: Means for categories and materials

Variables	Material	Milk	Fruit juice	Extra virgin olive oil	Tomato sauce
Perceived quality	Glass	22.70	23.15*	21.41*	24.17*
	Polylaminate	20.83	20.05	16.17*	19.96
	Plastic	20.16	18.63*	-	-
	Tin	-	-	19.32	16.62*
Attitude towards the product	Glass	14.44	28.90	13.32*	14.65
	Polylaminate	15.04	24.00	9.46*	12.90
	Plastic	14.12	26.46	-	-
	Tin	-	-	12.18*	12.86
Perceived risk	Glass	7.13	4.50	4.59*	4.57*
	Polylaminate	5.52	4.81	10.17*	7.00*
	Plastic	8.04	4.17	-	-
	Tin	-	-	8.82*	7.52*
Purchase intention	Glass	12.09	13.85*	17.09*	16.26*
	Polylaminate	13.78	14.19*	8.75*	11.96*
	Plastic	12.40	11.13*	-	-
	Tin	-	-	11.50*	11.62*
Willingness to pay	Glass	12.87*	12.90*	14.00*	13.87*
	Polylaminate	9.65*	8.38*	6.38*	7.68*
	Plastic	6.80*	6.38*	-	-
	Tin	-	-	6.95*	5.10*

* Significant difference compared to at least one of the other materials in the category

Source: own elaboration

Starting from the milk category, the willingness to pay is the only variable that is influenced by the type of material. Specifically, consumers are willing to spend more for the product packaged in glass, then in polylaminate ($U=166.50$, $p<0.05$) and in plastic ($U=97.5$, $p<0.05$); at the same time, the willingness is higher for milk in polylaminate than for milk in plastic ($U=188.50$, $p<0.05$).

Even fruit juice is characterized by a greater willingness to spend if proposed in a glass bottle compared to polylaminate ($U=108.50$, $p<0.05$) and to plastic ($U=82.00$, $p<0.05$). Plastic is the material for which the lowest purchase intention is recorded (vs glass $U=148.00$, $p<0.05$; vs polylaminate $U=145.00$, $p<0.05$). Finally, glass has better judgments than plastic also with regard to the product quality perception ($U=150.5$, $p<0.05$).

Extra virgin olive oil and tomato sauce categories are those in which the packaging material plays a more decisive role. Regarding tomato sauce, glass is the most successful material, with a positive effect on the purchase intention (vs tin $U=92.50$, $p<0.05$; vs polylaminate $U=108.00$, $p<0.05$)

and on the willingness to pay (vs tin $U=43.00$, $p<0.05$; vs poly laminate $U=93.50$, $p<0.05$). Simultaneously, the perceived risk is also lower than other materials (vs tin $U=143.00$, $p<0.05$; vs poly laminate $U=174.50$, $p<0.05$), as well as perceived quality which is higher for glass than for tin ($U=102.00$, $p<0.05$). Finally, respondents stated they were more willing to pay for tomato sauce packed in poly laminate than in tin ($U=148.50$, $p<0.05$).

Glass is also the preferred material for extra virgin olive oil. Glass is associated, on the one hand, with a lower perceived risk than tin ($U=128.00$, $p<0.05$) and poly laminate ($U=101.00$, $p<0.05$) and, on the other hand, a greater purchase propensity both in terms of intention and willingness to pay (vs tin $U=97.50$, $p<0.05$; $U=84.00$, $p<0.05$; vs poly laminate $U=46.50$, $p<0.05$; $U=86.50$, $p<0.05$). When the oil is offered in poly laminate the perceived quality and the attitude towards the product worsen. With regard to perceived quality, the difference seems significant only with reference to glass ($U=148.50$, $p<0.05$), while for the attitude towards the product Mann-Whitney U test shows a difference towards both the glass ($U=128.50$, $p<0.05$) and the tin ($U=168.00$, $p<0.05$).

5. Discussion and conclusion

The literature on the role of packaging has provided empirical evidence of the informative and persuasive power of this marketing lever. Various studies have shown how visual and verbal elements of the package are able to influence the product quality judgment and, consequently, to guide the purchasing behaviour. For example, the presence of the product image draws the consumer's attention, communicates information about the brand and helps to build its image (e.g., Underwood and Klein, 2002; Underwood *et al.*, 2001). The colour of the pack affects the consumers' emotional response and purchase intentions (e.g., Luceri and Zerbini, 2019), while nutritional claims can have a negative impact on the experience of some product attributes, such as taste (e.g., Lähteenmäki *et al.*, 2010; Raghunathan *et al.*, 2006).

Among the visual elements of packaging, the material is the least investigated. While most of the literature has focused on aspects related to sustainability, only a few studies have compared the different packaging materials in order to understand their impact on the purchasing behaviour. This research draws its inspiration from this gap in the literature. In particular, consumers' perception and behavioural intention with respect to the different materials with which food categories are currently marketed (i.e., milk, extra virgin olive oil, tomato sauce and fruit juice) have been investigated. Results showed that glass receives the most favourable cognitive response in terms of lower perceived risk and higher product quality, purchase intention and willingness to pay. The latter variable is more than double compared to the other materials considered: tin, poly laminate and plastic. Extra virgin olive oil is the category with the strongest preference for glass. Instead, in the case of milk, the evaluation of glass is quite equivalent to that of the other materials. In general,

traditional plastic does not have a good image. Probably due to the very current problems of environmental pollution, consumers attribute a low quality to milk and fruit juices packaged in plastic and declare themselves less willing to purchase and to recognize a premium price.

The research has both theoretical and managerial implications. From the theoretical point of view, the results enrich the literature on the role of packaging as a communication tool by showing how the material - like the other elements (i.e., shape, text and images) - influences the process of evaluation and choice of the product.

From a practical and managerial point of view, some useful indications emerge for companies and product managers in order to support the strategic marketing decisions with particular reference to the package lever. Consumers judge materials differently and, consequently, attribute a different value to identical products depending on the material used for packaging. The quality and risk perception and the purchase intention change even if the materials are equivalent in terms of product protection and maintenance of the organoleptic characteristics. For example, the literature has shown that consumers appreciate the possibility of seeing a food product inside the package and are willing to pay more to buy it (Sommonds *et al.*, 2018). As a result, the material becomes a core element in the product development process.

However, the evidence of a different experience with different materials must not lead to the error of excluding, a priori, the use of materials that suffer a disadvantage in perceptual terms. Marketing objectives must also be pursued through information and education. When consumers consider only certain types of materials as the standard for a given category, they value them better than the less-used ones. The challenge for companies is to help consumers overcome the resistance to change by understanding the reason why. Simple familiarity with the material? Prejudice on the product storage capacity? Misinformation on disposal methods? The answer to these questions paves the way for different marketing policies.

The results of this study offer insights for future research. Firstly, since the perception of the packaging material appears closely related to the product category, it is appropriate to replicate the study also with reference to other food and non-food categories. Secondly, the use of other research techniques - such as the focus group or the taste test - would allow to measure more in depth the consumers' perception towards the various materials, involving other senses besides the visual one (specifically, touch and taste).

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The tourist experience in the digital era: the case of Italian millennials

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Abstract

Purpose of the paper: *The digital revolution is producing several economic and societal changes. The tourism sector, which is characterized by products with high information content and intangible value, is one of the main industries involved in these changes on both the supply side and the demand side. This paper examines how digital technologies impact tourists' consumption experiences throughout the entire customer travel journey (planning, booking, experiencing, and sharing), with a special focus on millennials.*

Methodology: *On an empirical level, this research study aimed to describe the tourism-related buying and consumption behaviors of a sample of approximately 700 Italian consumers.*

Results: *The results of this empirical study highlighted that new technologies are used in all stages of the digital customer journey. Most of the respondents were experts in travel planning through digital technologies. The smartphone is mainly used by younger millennials, while the computer is mainly used by older millennials. With respect to social media, millennials prefer Instagram and Facebook for sharing content during and after trips.*

Research limitations: *This research study focused on the center of Italy, and the sample was not representative. Another limitation of this study was that the sample was made up of students, who do not have secure jobs and mainly depend on their parents' incomes.*

Practical implications: *The practical implications that emerged from this study specifically related to attracting and retaining tourists and increasing their overall customer experience.*

Originality of the paper: *This study contributes to deepen the knowledge of millennials' behaviors as tourists.*

Key words: tourism experience; digital traveler; millennials; digital tourism; tourist journey

1. Introduction

Digital technologies have introduced relevant innovations in all economic sectors, including the tourism sector, and they are radically changing the world in which we live. Gelter (2017) highlighted that the evolution of technological devices-from powerful smartphones and tablets to *smart* watches, bracelets, glasses, and lenses-has deeply changed people's lifestyles and habits. Notably, a recent study by Dorcic and colleagues

(2019) showed that smartphone use has become a daily habit, even during travel, depending on users' previous habits and the availability of Wi-Fi in tourist destinations (Wang and Fesenmaier, 2013; Mang *et al.*, 2016). Travelers are also increasingly using new technological devices that generate forms of augmented reality (AR), which adds digital elements to a live view, and virtual reality (VR), which replaces real life with virtual, alternative worlds (Beck *et al.*, 2019). These technologies can improve the overall tourist experience. Through the use of AR, for instance, content of potential interest to the digital traveler can be added and viewed using the camera on a smartphone (Scholz and Smith, 2016). Moreover, 3D printing, action cameras, and 180-degree double lens cameras have been increasingly adopted by tourists to document their travel experiences, share these experiences on their social media profiles, and obtain personalized souvenirs.

In addition to the evolution of hardware, rapid innovation is taking place in the realm of Internet-specific software. Through the use of smart agents, virtual worlds, personalized websites, and integrated games, tourists can experience VR and post comments while companies can engage in data mining and intelligent machines, which enhance their ability to provide a better tourism experience. Notably, the advent of Web 4.0 could plausibly usher in an era of greater integration between smart systems and people's everyday lives (Pencarelli, 2019). Through Web 4.0, it will be possible to guide tourists in their purchasing decisions, facilitate their movements, and make their tourism experiences more pleasant by offering flexible, targeted packages and connecting travelers with intelligent electronic agents. New technological solutions will also be available for the real-time management of consumer relationships (Parise *et al.*, 2016); such solutions include remote experts that help consumers in the pre-purchase phase and digital assistants (e.g., Siri for Apple and Google Now for Android) that provide price comparisons between similar offers.

Notwithstanding the increasing digitalization of both the tourism industry and tourist behavior, the investigation of the tourist experience in the digital era remains a current issue. Some contradictory and ambiguous situations have emerged because tourists are very inclined to share videos, images, and personal data but are also increasingly worried about the possibility of losing their right to privacy, as online information can be used for commercial purposes by actors in the business ecosystem. Moreover, this topic has received little investigation in relation to the younger segment of the tourist population, including millennials.

Recent research based on generational cohort theory has shown that individuals from different generations have different concerns, motivations, and behaviors related to the use of information technologies and social and ethical values (Chen *et al.*, 2017; Feng and Xie, 2014; Miltgen and Peyrat-Guillard, 2014; Moqbel *et al.*, 2017). Generation classification is still debated among scholars (Leask, Fyall and Barron, 2014). However, most researchers agree that the main generations are Generation Z (the iGeneration or post-millennials), millennials (Generation Y), Generation X, baby boomers, and the Silent Generation.

With regard to the years of birth constituting each generation, a number of studies (e.g., Bolton *et al.*, 2013; Brosdahl and Carpenter, 2011; Li *et al.*, 2013) have used the following birth dates for each cohort: Generation Y (born after 1981), Generation X (1961-1981), baby boomers (1946-1960), and the Silent Generation (1925-1945). However, there are no exact birth dates that define the millennials (Gen Y or Yers); generational time spans are not uniform and may differ across countries or even overlap due to the intensive use of the Internet (Soulez and Guillot-Soulez, 2011). Table 1 describes the demographic cohorts of Gen Y used in previous studies.

Tab. 1: Generation Y age range

Author (year)	Gen Y age range
Weiler (2005)	1980 and 1994
Meier <i>et al.</i> (2010)	1980-2000
Bolton (2013)	Born after 1981
Kattiyapornpong (2009)	1979 and 1995
Raunio (2014)	1977-2003
Saxena and Jain (2012)	1980-1995
Williams and Page (2011)	1980-2000
Cavagnaro <i>et al.</i> (2018)	1980-1994

Source: Adapted from Choudhary and Gangotia (2017).

Generation Y may be conventionally divided into two age groups (Barton *et al.*, 2014). The older portion of millennials faced relative prosperity in comparison to the younger portion of millennials, which was challenged by recession effects and economic turbulences (Bolton, 2013), such as the worldwide economic crisis of 2008. However, millennials are usually considered the market of the future, as they will influence the digital marketing strategies of companies in the coming years (Pencarelli *et al.*, 2018). Millennials represent 24% of the world's population. In Italy, they represent 8.03 million individuals of the total population, divided fairly evenly between males (50.5%) and females (49.5%). Furthermore, millennials have been proclaimed as the next big consumer spending group, more active travelers compared to their older counterparts, and frequent users of digital devices and social networks to acquire and share tourism information (Li *et al.*, 2013). Notably, millennials travel more frequently, explore more destinations, and spend more when they are on vacation compared to other generations. Moreover, they are constantly searching for information and new sensations (Benchendorff *et al.*, 2010; Schiopu *et al.*, 2016; Monaco, 2018).

Nevertheless, there is a shortage of knowledge regarding the behavior of millennials as tourists (Hong and Arthur, 2019; Garikapati *et al.*, 2016; Blumenberg *et al.*, 2012). In addition, studies focusing on digital technologies and the demographic characteristics and behaviors of social media users are scarce (Amaro *et al.*, 2016). Travelers exhibit different behaviors with regard to their use of social media for travel planning (Zeng and Gerritsen, 2014), and every generation of tourists has a unique set of

behavioral and display demand characteristics (Salazar, 2018; Glover, 2009; Huang and Petrick, 2009). Therefore, the present study aimed to investigate how digital technologies impact tourists' consumption experiences, with a special focus on millennials, throughout the entire travel cycle (dreaming, planning, booking, experiencing, and sharing). This study also aimed to identify factors that could enhance and/or hinder the adoption of these digital technologies.

Three main research questions were used to operationalize the purpose of this study in greater detail:

RQ1: How do millennials use hardware tools in the customer travel journey?

RQ2: How do millennials use software platforms in the customer travel journey?

RQ3: How different are the subgroups of millennials (namely, older and younger Yers) in terms of the customer travel journey?

Overall, this study provided practical implications for the tourism business/industry by providing a deeper understanding of the relationship between young travelers and the new digital technologies they use to search for information, to book accommodations, to aid in their travel experiences, and to return home from their trips.

The rest of the paper is structured as follows. Section 2 details the literature background of the present study by analyzing how digital technologies impact the traveler experience and how they can be used in the different steps of the tourism experience. Section 3 describes the methodology of the study, while Section 4 illustrates the research findings. These findings are discussed subsequently in Section 5. Finally, Section 6 concludes the paper by detailing the practical implications of these findings and proposing future research directions.

2. Theoretical background

2.1 The impact of new technologies on the tourism experience

The digital revolution has produced several changes in the tourism industry and enhanced the development of a new tourism ecosystem (Pencarelli, 2019). This ecosystem includes all actors that are directly involved in the creation of experiential value, such as tourists, area residents, tourism service providers, transportation companies, and tourism intermediaries. Through the use of new technologies, these actors can be always connected to each other as well as with service providers (e.g., telecommunications, banks, and payment services); social media platforms (e.g., Facebook, Twitter, and Instagram); public institutions; support technologies for bookings (e.g., Sabre and Amadeus); tourism infrastructures (e.g., theme parks and museums); tourist information and welcome offices; and other companies belonging to different sectors (e.g., healthcare and commerce) that support travelers during their trips

(Barile *et al.*, 2017). This has led to the emergence of a new tourism global value web, as suggested by Paraskevas (2005), which explicitly incorporates fluidity and technology into a chain model “consisting of several value webs continuously inventing and offering unique value propositions and competing for greater market share (upgrading their position in the global value web)” (Paraskevas, 2005, p. 11).

The literature has clarified that customer value is created during experiential encounters (i.e., while the tourist is experiencing a tourism offer). The value that arises from a tourism experience consists of two elements: (1) the value of use, which is related to the length of the experience, and (2) the cumulative value, which is connected to the duration of the experience’s effects (Ortega and Franco, 2019). Tourism companies may create value by acting inside the customer sphere according to the customer expectations, knowledge, memory, and sense of identity (Cutler and Carmichael, 2010). Alternatively, tourism companies may co-create value by acting inside the provider sphere (the joint sphere described by Gronroos and Voima, 2013) and in appropriate experience escapes (Mossberg, 2007). In designing an experience, companies should take into account what sets of stimuli are likely to engage tourists in unique, personal, memorable, and positive experiences by considering all phases of the tourism consumption process (from the initial search for information to the purchasing decision, the booking, the experience itself, and finally, the memories).

Tourists are the main actors in the tourism performances provided by single enterprises and tourism systems; as such, tourists should be involved throughout the entire tourism consumption process, from early inspiration to post-travel activities. In a value co-creation process, the intensity of active participation and the use of technology may vary greatly (Neuhofer *et al.*, 2012, 2014). The authors found that the tourism experience begins with a low level of involvement and a low intensity of technology use. Then, it progresses to tourism experience co-creation with the company but still lacks the integration of technology. The next step is the technology tourism experience, which is characterized by a high level of technology use but remains predominantly company-centric due to the low level of consumer involvement. The final step is the fully technology-enhanced tourism experience, in which the design, delivery, and value creation of the tourism experience maximize the potential offered by both co-creation and technology (Forlani and Pencarelli, 2018).

However, the digitalization of the tourism sector does not always have positive impacts on the experiences and well-being of tourists (Neuhofer, 2016). Sometimes, technology destroys value and significantly reduces people’s mental, psychological, and emotional well-being by involving them in negative experiences. The first case of customer value destruction is caused by the circulation and diffusion of data that violates people’s right to privacy. In the digital environment, trust represents a key factor in enhancing tourists’ experiences while reducing their risk perception. In this respect, Morosan and DeFranco (2016) found that app-related privacy concerns negatively influence consumers’ intentions to use hotel apps. Similarly, Wozniak *et al.* (2018) highlighted that mobile users’ information

privacy concerns negatively affect tourist behavior throughout the mobile customer journey. Other cases of value destruction in technology-driven tourism experiences relate to situations in which continuous connection to digital equipment does not allow the tourist to rest adequately and disconnect from the worries of everyday life, thus reducing the benefits of the holiday itself. A literature review by Dorcic and colleagues (2019) highlighted that using a smartphone for work purposes during a vacation is not healthy by showing that tourists' relaxing is generally reduced when they are not disconnected from their smartphones while vacationing.

Excessive digital immersion can also generate frequent interruptions on the part of business actors operating in the tourism ecosystem. These business actors are oriented to propose commercial offers or information concerning events of interest to the customer, whose profiles, habits, and preferences are made known by their digital footprints.

Moreover, technology use often fails to facilitate interactions between tourists and local communities as well as consumer-to-consumer relationships, thus reducing the overall quality of the tourist experience. An excessively technology-driven experience can even lead to dramatic tragedy, such as a road accident or even the death of a tourist taking a travel selfie. Wherever interactions between people are replaced by interactions with technology, there is a risk that social exchanges will dry up and become impoverished, leaving people imprisoned within the digital environment and thus weakening the authenticity and value of the tourism experience (Pencarelli, 2019).

In summation, prior research on the relationship between the digital revolution and the tourism experience has remained relatively inconclusive due to its contradictory findings. Therefore, this topic is still worthy of analysis, as it is relevant to the investigation of ways in which new technologies can be used in the different stages of the tourism experience to improve overall tourist satisfaction and perceived value.

2.2 How digital tourists use new technologies

The increasing adoption of new technologies has deeply changed the ways in which tourists collect information, evaluate tourism products, and purchase tourism products (Sciarelli *et al.*, 2018). Tourists-especially young tourists (Schiopu *et al.*, 2016; Femenia-Serra *et al.*, 2019)-are becoming digital travelers and avid users of social media channels such as YouTube, Snapchat, and Whisper; seek game-based entertainment; and are moving away from the traditional social media (e.g., Facebook and Twitter). Tourists typically have positive attitudes toward the use of mobile games to enhance their customer value and experience, especially when such applications are useful, enjoyable, and compatible with their locations (Shen *et al.*, 2020; Nunes and Mayer, 2014). Moreover, tourists are increasingly driven by curiosity and thus appreciate opportunities to gather practical information about their destinations through digital devices (Xu *et al.*, 2016).

Changes in tourist behavior related to the digitalization of the economy are evident in the phases before, during, and after a trip. The

pre-consumption phase of a trip begins with the dream. In the next steps of this phase, the tourist compares alternatives, talks to their friends and/or relatives, chooses the best options, plans the specifics of the trip in real-time contact with the service providers, books the trip, and finally, purchases the product. In this phase, digital consumers can choose from a worldwide range of destinations and accommodations; this wide range of options has made the decision-making process more challenging and complex than it was in the past (Buhalis and Law, 2008). However, digital travelers (especially millennials) are able to obtain information quickly, enabling them to narrow down and specify their expectations. Most digital travelers use search engines before choosing their destinations and modes of travel. Then, they may simply use their phones to make reservations, especially for simple tourism products that are considered financially and emotionally low-risk and thus require little forethought or organization. However, personalized advice may be needed for purchasing more complex and high-risk tourism products. Therefore, the pre-consumption phase can include consultations with a travel agent (Pencarelli, 2019).

In general, digital travelers primarily go online to search for information because most of them believe that it is where they will find the best prices (Law *et al.*, 2014). They also tend to consult online reviews and opinions posted by other users and relate with their friends on social media platforms. Travelers consider this information to be reliable and helpful for the purpose of choosing a product with a good quality-to-price ratio and avoiding making a poor decision. In fact, travel content created online is generally considered to be more credible and trustworthy than reviews from professionals or marketer information (Fotis *et al.*, 2012; Gretzel and Yoo, 2008). In the pre-consumption phase new digital technologies also allow tourists to use smartphones, computers, special platforms, or smart lenses to sample offers in AR or VR (Beck *et al.*, 2019).

During the consumption phase, the digital traveler is constantly connected and downloading information concerning destinations, restaurants, hotels, other service providers, prices, events, local traditions, weather conditions, friends nearby, special offers, environmental emergency alerts, transportation timetables, and so on. In the present day, Internet technology is available everywhere, thus qualifying most places as *smart destinations*. This allows everyone, everywhere, to access efficient Wi-Fi networks at any time, thus allowing them to obtain data and information much faster than they can through conventional telecommunications (e.g., phone services). Travelers in the consumption phase must first search for ideas on where to go. Social media plays an important role in providing such ideas, reducing risk, and making it easier for travelers to imagine potential destinations (Gretzel and Yoo, 2008). Before a trip, travelers typically consume social media (i.e., read and view user-generated content) but do not actively participate by creating content.

Digital tourists use apps and other services to acquire information, photos, videos, and other content, which they may then share in their interactions with friends, relatives, and the social communities to which they belong. This activity takes place during the trip, making the tourism experience an opportunity to engage the traveler's entire social network

in his/her personal adventure in real time through comments and reactions to the narrative being shared. Since millennials are increasingly relying on other customers' recommendations and opinions (Li *et al.*, 2013), they tend to use various social media channels to share content contextually. During this phase, travelers consume social media not only to find destination-related information but also to produce comments and reviews and to share videos and photos. Social platforms are also used by tourists in emergency or crisis situations, such as when a crime has been committed, when there has been a terrorist attack, during weather-related emergencies, during political unrest, or during health outbreaks; in these situations, smartphone technology and information sharing can help tourists quickly understand and resolve problems (Law *et al.*, 2014). Tourists also use digital technology to make payments for goods and services purchased during their trips.

In the phase after the trip, called the post-consumption phase, the digital tourist finds another occasion to affirm his/her identity and give more meaning to the just-completed experience. As they did during their trip, a tourist may turn to blogs and websites to share photos and videos with their friends and with the public after their trip as well (Shao, 2009; Fotis *et al.*, 2012; Parra-López *et al.*, 2012). Once the tourist has returned to their everyday life, they can go back and relive their travel experience through a thoughtful retelling of it. Each story is built around a collage of various content elements that are personal and personalized, through which the storyteller establishes a sort of personal brand to identify themselves as an expert in the eyes of their followers. All of this takes place in a context in which personal data is transmitted and saved in a way that is not always protected or safe; this presents another managerial challenge with respect to data privacy protection and cybersecurity.

Finally, tourists' buying and consumption behaviors are changing significantly in all the aforementioned travel phases. Tourists have become extraordinary generators of content that is uploaded to the web through various social channels to be shared and commented upon by friends and followers. In this respect, tourists can be considered SoLoMO, as suggested by Ejarque (2015): Social, as they are faithful users of social media; Local, as they look for information through localized applications to enhance the destination experience; and Mobile, as they are constantly connected to mobile devices. Within this context, digital travelers play a growing role in the tourism ecosystem as both animators and co-creators of information and communication value.

3. The research method

The present study aimed to answer the research questions by means of empirical analysis. A structured questionnaire was administered online to a sample of young Italian consumers aged between 18 and 35 years old. This questionnaire was distributed via computer-assisted web interviewing (CAWI) over a two-month period (from September 1st to October 31st, 2018). The decision to use the web as the vehicle for dissemination of the

questionnaire was the result of a series of methodological considerations and advantages associated with the use of CAWI (Di Fraia, 2004)¹. A total of 723 young people attending Urbino University completed the questionnaire voluntarily.

According to the National Student Registry, there were 14,557 students attending Urbino University during the survey period. Brasini and colleagues' (2002) formula [1] was applied to find that the number of questionnaires that had to be administered to produce statistically significant results was 374. Therefore, our sample can be considered statistically significant, at least at the time of data collection.

$$n = \frac{Z^2 a / 2N}{4(N-1)\theta^2 + Z^2 a / 2} = \frac{1.96^2 \times 14,557}{4(14,557-1) \times 0.05^2 + 1.96^2} = 374.31 = 374 \text{ [1]}$$

where:

n = sample size

Z²a/2 = confidence level = 1.96, computed using the tables of the standard normal distribution

N = population size

θ = margin of error (set at 5%)

From a qualitative standpoint, university students were selected because they were representative of the young, well-educated portion of the Italian population. Although scholars often include individuals aged between 18 and 25 years in this group (Sari *et al.*, 2015), the average age of graduation in Italy is 26 years and a large percentage (more than 25%) of people in Italy between 30 and 34 years old are still attending university. Moreover, only approximately 50% of Italian graduates are employed within three years of graduation (Almalaurea, 2016; Eurostat, 2016)². Therefore, Italian people aged 18 to 35 years old are mainly college students, and even those who have graduated tend to be very similar to college students in terms of social status and lifestyle characteristics. Students attending Urbino University are particularly representative of Italy's young population, as more than 25% of these students traveled to attend the Urbino University over 250 km and 48.6% traveled from outside of the Marche region (ISTAT, 2016)³. Table 2 summarizes the sociodemographic characteristics of the sample.

¹ Compared to its advantages, the CAWI method presents some limitations, mainly related to the self-selection of respondents, which has some implications especially in terms of sample representativeness.

The data obtained, therefore, are significant but cannot be considered as representative of the entire population (Di Fraia, 2004).

² http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_and_social_conditions (accessed 15 May 2020). www.almalaurea.it/sites/almalaurea.it/files/docs/universita/profilo/Profilo2016/report_xviii_rapporto_profilolaureati-def.pdf (accessed 15 May 2020)

³ www.istat.it/it/files/2016/11/Studenti-e-bacini-universitari.pdf (accessed 15 May 2020).

*Tab. 2: Sample profile and sociodemographic characteristics of older and younger Yers**

	Millennials, overall sample	Older Yers	Younger Yers
N	723 (100%)	311 (43%)	412 (57%)
Gender			
Female	76%	70%	80%
Male	24%	30%	20%
Area of residence			
North of Italy	5%	7%	5%
Center of Italy	78%	79%	77%
South of Italy	17%	14%	18%
Occupation			
Student	66%	47%	80%
Working student	34%	53%	20%
Educational level			
High school diploma	62%	32%	85%
Three-year degree	27%	44%	14%
Master's or five-year degree	11%	24%	1%

* Younger Yers include millennials born between 1995 and 2000, while older Yers include those born between 1983 and 1994 (Balton *et al.*, 2014).

Source: Authors' elaboration.

With respect to the first two stages (searching for information and booking), the respondents were asked to indicate what devices and software they used to plan and book their journeys. The questionnaire then focused on the online actions carried out by the respondents during and after travel (that is, the consumption and post-consumption stages), such as:

- The extent to which the respondents shared their travel experiences online through photos, comments, stories, videos, or ratings;
- The extent to which the respondents used digital check-in services; and
- The devices used by the respondents to share their travel experiences online.

To create the questionnaire items, the authors drew from the literature on social media marketing and digital travel journeys (adapted from Monaco, 2018; Schioppa *et al.*, 2016; Amaro *et al.*, 2016; Cox *et al.*, 2009). A seven-point Likert scale was used to evaluate the items, except for the items concerning online activities during and after travel, which were measured using a three-point scale.

The data were processed using SPSS software. Descriptive statistics were performed to summarize the participants' responses and make inferences about the survey data. Additionally, a chi-squared test was conducted to detect statistically significant results. An independent samples t-test was performed to statistically test the equality of means and to analyze differences in behavior between the younger millennials and the older millennials.

The year of birth was taken as a discriminating factor for the development of the independent samples t-test by distinguishing between older and younger millennials (Yers). A growing number of scholars have

suggested splitting Generation Y into younger and older millennials (e.g., Bolton *et al.*, 2013; Debevec *et al.*, 2013; Garikapati *et al.*, 2016; Schewe *et al.*, 2013). Younger millennials value autonomy to control their environment and are heavy consumers of social media, as they value the personalized services and instant communication provided by social media (Youn and Kim, 2019). Compared to older millennials, younger millennials are less concerned about politics, sustainability, saving, and making mistakes in life (Debevec *et al.*, 2013; Bordonaba-Juste *et al.*, 2020). Differences and associations were considered significant at $p < 0.05$.

4. Findings

4.1 Overall profile of the respondents as tourists

When millennials decide to travel (Table 3), they reported that they prefer to organize every part of the holiday (81%), giving priority to adventure holidays. Older Yers were more likely to prefer organizing their trips on their own compared to younger Yers, but this difference was not statistically significant.

Tab. 3: Type of holiday preferred by the respondents

Which of these two sentences do you identify with?	Millennials, overall sample	Older Yers	Younger Yers
When I decide to travel, I organize every part of my trip on my own; my absolute priority is adventure.	81%	83%	80%
When I decide to travel, I want an already organized program (an all-in package); my absolute priority is relaxing.	19%	17%	20%
Chi-squared test	0.863		
Df	1		
Sig.	0.353		

Source: Authors' elaboration.

The organization of travel was highly influenced by reviews from other travelers (mean = 5.07, range: 1-7). The independent samples t-test was conducted to compare the influence of online reviews between older and younger Yers. The test revealed no significant difference in the scores of the two groups ($t(721) = 0.173$, $p = 0.863$).

Google Maps appeared to be the most frequently used mobile travel app among the respondents, followed by Booking and TripAdvisor (Table 4).

The independent samples t-test showed some differences between the older Yers and the younger Yers. For one, there was a statistically significant difference in their usage of Airbnb, Trivago, Skyscanner, PiratinViaggio, GoEuro, and Momondo. Notably, Airbnb and Skyscanner were used more often by older millennials than by younger millennials, while the contrary applied to the remaining mobile apps.

Tab. 4: Mobile travel app usage

	Millennials, overall sample		Older Yers		Younger Yers		T-test		
	M	SD	M	SD	M	SD	t	df	Sig.
Google Maps	5.41	1.885	5.47	1.863	5.37	1.903	.687	721	0.492
Booking	4.60	2.003	4.70	1.971	4.52	2.026	1.196	721	0.232
TripAdvisor	4.11	1.958	4.15	1.945	4.07	1.969	.554	721	0.580
Google Street View	3.72	2.304	3.80	2.281	3.66	2.321	.844	721	0.399
Airbnb	3.00	2.123	3.20	2.102	2.85	2.130	2.184	721	0.029*
Trivago	2.82	1.848	2.61	1.734	2.98	1.917	-2.700	721	0.007*
Skyscanner	2.48	2.043	2.78	2.129	2.25	1.947	3.425	721	0.001*
eDreams	2.18	1.698	2.21	1.669	2.15	1.722	.458	721	0.647
Expedia	2.01	1.551	1.91	1.391	2.09	1.660	-1.562	721	0.119
BlaBlaCar	2.01	1.569	2.06	1.571	1.97	1.569	.738	721	0.461
Piratin Viaggio	1.92	1.589	1.76	1.406	2.04	1.706	-2.368	721	0.018*
Uber	1.62	1.338	1.65	1.378	1.60	1.308	.521	721	0.602
Kayak	1.50	1.137	1.46	1.030	1.53	1.211	-.898	721	0.370
GoEuro	1.43	1.116	1.30	0.874	1.53	1.260	-2.906	721	0.004*
Momondo	1.35	0.949	1.27	0.807	1.41	1.041	-1.991	721	0.047*
Citymapper	1.33	1.051	1.32	1.060	1.33	1.045	-.037	721	0.971

* The mean difference is significant at the 0.05 level.

M = mean, SD = standard deviation, t = t-value

Source: Authors' elaboration.

4.2 The information search phase

With regard to the information search phase, respondents searched for information mainly through free search on the web (mean = 5.23), online booking sites (mean = 4.17), and social media (mean = 3.43; Table 5). Almost all the t-tests carried out to investigate this phase showed a statistically significant difference between the older Yers and the younger Yers, except for the t-tests concerning free search and social media usage.

Tab. 5: Information search phase

	Millennials, overall sample		Older Yers		Younger Yers		T-test		
	M	SD	M	SD	M	SD	t	df	Sig.
Free search on the web	5.23	1.781	5.32	1.777	5.17	1.783	1.068	721	0.286
Online booking platforms (e.g., Booking and Expedia)	4.17	1.95	3.94	1.953	4.34	1.931	-2.745	721	0.006*
Social media	3.43	1.908	3.41	1.896	3.46	1.918	-0.357	721	0.721
TV (e.g., movies and documentaries)	3.12	1.858	3.3	1.91	2.98	1.809	2.23	721	0.026*
Magazines/books (e.g., travel guides)	3.08	1.893	3.25	1.976	2.95	1.82	2.069	721	0.039*
Travel blogs	2.91	1.905	3.08	1.885	2.78	1.911	2.128	721	0.034*
Tour operator websites	2.35	1.703	2.12	1.569	2.53	1.779	-3.239	721	0.001*
Travel agencies	1.72	1.265	1.6	1.173	1.81	1.325	-2.213	721	0.027*

* The mean difference is significant at the 0.05 level.

M = mean, SD = standard deviation, t = t-value

Source: Authors' elaboration.

The millennials mainly used smartphones and computers for research and for making reservations (Table 6). The younger Yers used smartphones more frequently than the rest of the sample, confirming the mobile-oriented attitude of this group. However, a chi-squared test of independence showed no statistically significant difference between the older and younger Yers in terms of their preferred devices for research.

Tab. 6: Devices used by millennials in the information search phase

Type of device	Millennials, overall sample	Older Yers	Younger Yers
Smartphone	51%	46%	54%
Computer	46%	51%	42%
Tablet	3%	2%	3%
Do not carry out this activity online	1%	1%	1%
Chi-squared test	6.872		
Df	3		
Sig.	0.076		

Source: Authors' elaboration.

4.3 The booking phase

With regard to the booking stage (Table 7), 55% of the respondents used websites and aggregator platforms to book their travel, together with the websites of the airline companies or structures in which they would stay (37%). The chi-squared test showed no statistically significant difference in preferred booking channels between the older Yers and the younger Yers.

Tab. 7: Booking channels used by millennials

Booking channel	Millennials, overall sample	Older Yers	Younger Yers
Online booking platforms (e.g., Booking and Expedia)	55%	55%	56%
Website of the airline and/or structure in which they would stay	37%	40%	34%
Travel agency (physical location)	7%	5%	8%
Website of a specific tour operator (e.g., Alpitour or Eden Viaggi)	1%	1%	2%
Chi-squared test	6.877		
Df	3		
Sig.	0.076		

Source: Authors' elaboration.

For making reservations (Table 8), the computer was the preferred device of most of the sample. A chi-squared test of independence showed that there was a significant difference in the preferred devices for making reservations between the two groups (Sig. = 0.038). In particular, the younger Yers used computers less frequently than the older Yers, even for those younger Yers who did not book their travel online.

Tab. 8: Devices used by millennials for booking

Type of device	Millennials, overall sample	Older Yers	Younger Yers
Computer	80%	82%	78%
Smartphone	14%	14%	14%
Do not carry out this activity online	4%	1%	5%
Tablet	3%	3%	3%
Chi-squared test	8.444		
Df	3		
Sig.	0.038*		

* The chi-squared test is significant at the 0.05 level.

Source: Authors' elaboration.

4.4 The consumption phase

During travel, the millennials preferred to share content mainly on Instagram and on Facebook (Table 9). An independent samples t-test showed a difference between the two defined groups of millennials in terms of their preference to share content on Instagram versus Facebook. Content was shared on Instagram more frequently by the younger millennials, while content was shared on Facebook more frequently by the older Yers.

Tab. 9: Online activity during travel

	Millennials, overall sample		Older Yers		Younger Yers		T-test		
	M	SD	M	SD	M	SD	t	df	Sig.
Sharing content on Facebook	1.93	0.7	2.06	0.669	1.82	0.706	4.74	721	0.000*
Sharing content on Instagram	2.36	0.785	2.21	0.821	2.48	0.736	-4.616	721	0.000*
Sharing content on other social platforms	1.21	0.486	1.21	0.498	1.21	0.477	-0.014	721	0.989
Localizing oneself on Facebook	1.57	0.715	1.62	0.708	1.53	0.719	1.614	721	0.107

* The mean difference is significant at the 0.05 level.

M = mean, SD = standard deviation, t = t-value

Source: Authors' elaboration.

The millennials mainly used smartphones to share content during travel (89%), although 9% of the sample did not share anything on the web (Table 10). The younger Yers tended to use smartphones more frequently than the older Yers. Moreover, the older Yers did not share their travel more frequently than the younger Yers. However, a chi-squared test of independence showed no statistically significant difference between these groups in terms of the devices they used to share content during travel.

Tab. 10: Devices used by millennials to share content during travel

Device	Millennials, overall sample	Older Yers	Younger Yers
Smartphone	89%	86%	91%
Do not share anything online during travel	9%	11%	7%
Computer	2%	3%	2%
Tablet	0%	0%	0%
Chi-squared test	4.933		
Df	3		
Sig.	0.177		

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Source: Authors' elaboration.

4.5 The post-consumption phase

After travel, the millennials preferred to share content summarizing their journeys mainly on their Instagram profiles (mean = 1.84) and their Facebook profiles (mean = 1.50). They also preferred to share reviews on TripAdvisor (mean = 1.58) and similar platforms (Table 11). An independent samples t-test showed statistically significant differences between the two groups of millennials in terms of their preference to share reviews on TripAdvisor, share reviews on hotel Facebook pages, or share content summarizing their journeys on Instagram. Notably, the first two activities were practiced more frequently by the older Yers, while the younger millennials preferred to share content summarizing their journeys on their Instagram profiles.

Tab. 11: Online activities carried out after travel

	Millennials, overall sample		Older Yers		Younger Yers		T-test		
	M	SD	M	SD	M	SD	t	df	Sig.
Sharing reviews on TripAdvisor	1.58	0.676	1.66	0.68	1.51	0.667	2.924	721	0.004*
Sharing reviews on the Facebook pages of hotels, tour operators, or travel agencies	1.25	0.5	1.32	0.551	1.2	0.45	3.345	721	0.001*
Sharing reviews on the Instagram pages of hotels, tour operators, or travel agencies	1.23	0.508	1.22	0.499	1.23	0.515	-0.313	721	0.755
Sharing content summarizing the journey on one's own Facebook profile	1.5	0.677	1.55	0.703	1.47	0.655	1.572	721	0.117
Sharing content summarizing the journey on one's own Instagram profile	1.84	0.825	1.66	0.783	1.97	0.831	-5.172	721	0.000*

* The mean difference is significant at the 0.05 level.
M = mean, SD = standard deviation, t = t-value

Source: Authors' elaboration.

The device most frequently used by the millennials to share content after travel was the smartphone (Table 12). A chi-squared test showed that the younger millennials used smartphones significantly more frequently than the older millennials (Sig. = 0.036).

Tab. 12: Devices used by millennials to share content after travel

Device	Millennials, overall sample	Older Yers	Younger Yers
Smartphone	70%	67%	72%
Computer	15%	20%	12%
Do not share anything on the web after travel	13%	12%	14%
Tablet	2%	2%	1%
Chi-squared test	8.547		
Df	3		
Sig.	0.036*		

* The chi-squared test is significant at the 0.05 level.

Source: Authors' elaboration.

5. Discussion

The present study highlighted several interesting issues regarding the impact of the digital revolution on young tourists' behavior in their digital travel journeys. Law *et al.* (2018) stated that digital technologies influence travel patterns and tourist behavior before, during, and after trips by providing convenient, instant access to information, social connections, support, and an interactive sharing platform. Our empirical research supported this proposition, highlighting the relevance of online reviews and electronic word-of-mouth in the organizational process of travel (Gabbianelli and Pencarelli, 2019) and thus confirming that most young people are considerably influenced by reviews and prefer to book accommodations and organize trips after consulting the opinions of other travelers.

In the first two stages of the digital travel journey (before the trip), millennials tend to use the web and online booking platforms to search for information and book their travel accommodations. In both of these phases, younger millennials appear to contact travel agencies more frequently than older millennials. The methods and tools used by tourists to acquire information have changed impressively over time, and the major decisions and evaluations of tourists appear to be most heavily influenced by word-of-mouth and clicks within social networks, which serve as expressions of the tourist experience (Coshall, 2009). Overall, millennials tend to use computers to find information and book travel accommodations, and younger Yers tend to use PCs more frequently and use smartphones less frequently compared to older Yers.

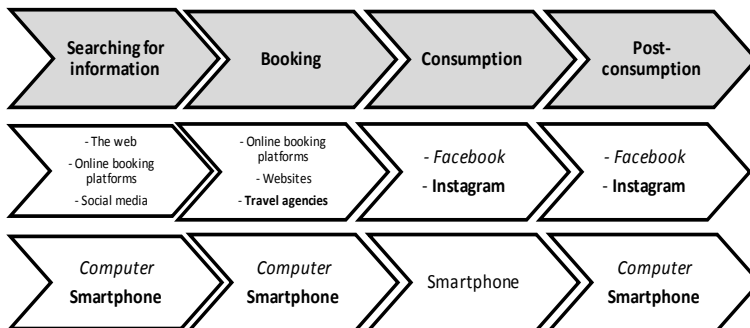
During their trips (i.e., in the consumption phase), millennials tend to share content such as photos, videos, and stories on their social networks. In particular, younger millennials prefer to share this content on Instagram, while older Millennials prefer to share this content on Facebook. Nearly all the respondents used smartphones to share content during their trips.

After their trips (i.e., in the post-consumption phase), millennials prefer to share content that summarizes their travel experiences on their social networks. As in the consumption phase, older Yers are more active

on Facebook while younger Yers prefer to use and share content on their Instagram profiles in the post-consumption phase. Although millennials consider it very important to consult online reviews in the decision-making process, young travelers do not seem to be extremely active in giving their opinions or sharing reviews on the social media pages of hotels, travel agencies, or tour operators. Rather, they prefer to share reviews on online booking platforms, such as TripAdvisor and Booking. This behavior is consistent with the findings of previous research highlighting the fear of losing one's right to privacy when sharing information online (Morosan and DeFranco, 2016). Finally, younger millennials used smartphones more frequently to share content after their trips, while older millennials used PCs more frequently for this purpose.

In summation, the present study showed that digital technologies impact all stages of the travel journey, even though younger travelers appear to be trying to connect more closely with travel agencies. With respect to device use, the survey confirmed that the younger travelers were smartphone natives, while the older Yers tended to use computers in certain stages of the customer journey. The predominance of smartphone use over computer use observed among the younger participants was in line with the unstoppable development/evolution of the mobile world that has been witnessed by several works of research (Wang *et al.*, 2012; Wang and Xiang, 2012). Fig. 1 summarizes the software and hardware tools used by the millennials during their digital travel journeys.

Fig. 1: Mapping the millennial traveler's digital journey



* Italics indicate older Yers, bold indicates younger Yers, and the remaining text describes the common aspects of the two groups.

Source: Authors' elaboration.

6. Conclusions and implications

Young tourists generate advances in technology by encouraging innovation through their consumer preferences and habits. These habits include making online reservations, interacting with travelers through social networks, and using mobile devices and applications to plan and conduct travel. This paper provides an overview of the major studies related

to the impact of new technologies on the tourist experience. Furthermore, this paper also shows how millennials use digital technologies in their travel journeys. The main purpose of the present study was to gain a better understanding of how millennials use hardware and software tools in their travel and whether millennials of different ages behave differently.

This paper contributes to the current literature on the relationship between the digital revolution and the tourist experience by providing evidence concerning the use of modern devices and software platforms by tourists to assist them in all stages of the customer journey. Millennials largely use computers to search for information on the web and book their travel accommodations, but they mainly use smartphones to share their travel experiences during and after travel (RQ1). Millennials find information by making free searches on the web. In addition, millennials use online booking platforms both to search for information and as their primary channels for booking. Young consumers tend to share their travel experiences on social networks, particularly Instagram and Facebook (RQ2).

Moreover, this study revealed some age-related differences among millennials (RQ3). Before their trips, younger Yers tend to try to gain closer contact with travel agencies. During and after their trips, younger millennials prefer to share their travel experiences on Instagram while older millennials tend to share these experiences on Facebook. With regard to device use after travel, younger Yers are smartphone natives whereas older Yers tend to use computers.

On the demand side of tourism, the advent of new technologies has radically modified the behaviors of digital travelers; this is especially true for young tourists, who are especially inclined to take an active part in the value creation process. Millennials, particularly the younger portion of the generation, grew up with smartphones in their hands and benefited from innovative applications that make life seem easier. Therefore, from a theoretical point of view, this paper confirms prior claims that the use of digital technology aids in all phases of the customer journey and enriches the behavioral framework of millennials. This paper also highlights several important differences between the younger and older portions of the millennial generation.

Furthermore, the findings of this article have several managerial implications that could be particularly useful for hospitality managers. First, the present study provided evidence that new technologies are used during all stages of the travel planning process, albeit to different extents and for different purposes. As mentioned previously, young people exhibit a strong tendency to use online search engines. Therefore, it would be relevant for hospitality managers to focus on the search engine optimization (SEO) of their websites in order to become more visible. Moreover, young tourists tend to inform themselves about travel accommodations through social media platforms, and online review sites (e.g., TripAdvisor) have a strong impact on their decision-making. Therefore, hoteliers and social media managers should monitor positive and negative comments closely and deal with them promptly. By analyzing comments in online communities, hotels and other travel-related companies can better understand what

their guests like and dislike about them and their competitors (Dellarocas, 2003). As a consequence, tourism-related businesses must be visible on search engines and spotlighted on social media channels in order to grow their online reputations.

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Appropriate communication activity management is needed by the accommodation industry, by intermediaries (e.g., travel agents and tour operators), and by all the economic and institutional operators of the tourism value ecosystem (e.g., transport companies, cultural institutions, spas, event organizers, and tourist destinations) to fit customized content to the motivations of specific tourists (Rita *et al.*, 2018). Given that tourists interact through a high number of touch points (e.g., review sites, social media, real-time messaging apps, and online travel agencies), it is critical for hoteliers to be reactive on all channels 24/7. A good customer relationship management (CRM) system can be used to process data from all sources and present a clear, readable recap of each customer's needs, tastes, and shopping habits. Furthermore, the use of data management and CRM systems to produce quality service and personalization can serve as a driver of customer loyalty.

The increasing use of technological devices by tourists has implications not only at an operational level but also from a strategic standpoint. As suggested by Salazar (2018), effective segmentation must be taken into account, as tourists' values may differ. Therefore, a special focus was given to millennials in this paper. Our findings revealed that members of this generation prefer to proactively plan and execute their travel by deciding upon their own itineraries. Thus, it is likely that this generation tends to be creative. Tourism companies should understand the unique interests, personalities, and lifestyles of tourists to tailor unique personal experiences to their customers. Tourist proactivity could also lead to the development of new motivations to travel, aimed at exploring different lifestyles, new experiences, and new places. As noted by Ketter (2020), digital tourists prefer to travel "off the beaten track", typically preferring places that are less popular and more "authentic." Therefore, new destinations that are capable of providing genuine experiences should be promoted through the web. Finally, the web may shift millennials' attentions toward peer-to-peer accommodation instead of traditional hotels. Therefore, the tourism industry should consider new offerings, such as posh hostels or new hotel sub-brands, specifically aimed at the millennial market.

Although these implications did not emerge clearly from the results of the present study, they should be considered by companies in light of previous research demonstrating a recognized need to develop digital marketing processes through innovations in the informational, strategic, and operational components of marketing practices (Kannan and Li, 2017). All of these practices can be realized by skilled hoteliers and tourism managers. Digital transformation is a challenge involving not only new digital technologies but also people, who are its main drivers (Giannini, 2019). In addition, a firm's ability to manage such change instead of being disrupted by it will depend on how the firm uses products, services, and data to influence (or even change) its own and other players' positions in the tourism ecosystem (Paiola, 2017).

Millennials are relevant not only due to their present impact on tourism but also as the tourists of the future (Richards and Wilson, 2004). The tourism sector must take this generational change into account to design future-proof products and services. Like the young tourist of today, the middle-aged tourist of the 2030s and 2040s will have completely different needs, wants, and travel behaviors from those of the contemporary middle-aged tourist (Cavagnaro *et al.*, 2018).

The present study had some limitations, including the origin of the respondents and the localization of the university, which focused mainly on the center of Italy. Despite the importance of this university and the enrolled students' representativeness of the country, wider samples could be beneficial for future investigations. Future studies should use larger sample sizes and increased sample variety, perhaps by involving different universities. In addition, the CAWI method presented some limitations mainly related to the self-selection of respondents, which has some implications for sample representativeness (Di Fraia, 2004). To increase the generalization of the present findings, these results should be tested further in more representative sample settings. Another limitation of this study was the fact that the sample was made up of students, who do not often have secure jobs and mainly depend on their parents' incomes. Non-student millennials could display different behaviors in the digital tourist journey. Future research could also investigate millennials' motivation to travel, their preferred payment methods in the travel customer journey, and their travel decision-making style. Furthermore, future research may compare the tourism consumption habits of other generations.

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Determinants of commitment and opportunism of institutional investors' behaviour: an empirical investigation on Robo-voting Phenomenon¹

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Abstract

Purpose of the paper: Recent research identifies a troubling number of institutional investors that automatically follow the advice of their proxy advisors so that they can prove to have complied with their fiduciary duties in a practice known as robo-voting. Therefore, our central research questions are: How could the characteristics of institutional investors affect robo-voting phenomenon? How could robo-voting phenomenon favour the creation of new opportunistic behaviour, changing the scope of shareholder engagement?

Methodology: Our paper directly addresses these questions by using ANCOVA (Analysis of Covariance) to test the effect of characteristics of institutional investors on the dependent variable under study. We use a manually constructed sample of coverage information from 123 Annual General Meetings held by large Italian companies in the 4-year period 2015 to 2018 and the voting reports of three proxy advisors.

Findings: We show that such voting based on robo-voting phenomenon is restricted to specific types of institutional investors and it may be highlighted as a negative aspect of a duty to 'demonstrate' engagement on the part of institutional investors. Specifically, this duty could depend on location, strategy and category of institutional investors.

Research limits: We refer only to the Italian market and it may be considered as a peripheral market by investors.

Practical implications: We argue that legal enforcement of the conceptual and operational spectrum of engagement duties currently sits uncomfortably upon institutional investors and proxy advisors.

Originality of the paper: We think it is important to consider how to promote shareholder engagement in general in a European context and at the same time curb negative activism by some shareholders.

Key words: corporate governance; shareholder engagement; proxy advisor; shareholder voting; institutional investors; robo-voting

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1. Introduction

In recent years, scholars and policy makers have been asking for increased shareholder engagement, emphasising that the overall corporate governance framework must ensure the long-term sustainability of EU companies². The increasing focus on shareholder engagement and the long-term viability of companies raises questions about the link between shareholder engagement and shareholder accountability (Birkmose, 2018). According to traditional corporate governance theories, shareholders are relied upon to monitor and control the boards of investee companies, but agency theory and stakeholder theory do not justify a shareholder duty to play an active role in monitoring and controlling the board of directors. On the contrary, the Shareholder Rights Directive of 2017 (SRD II) emphasises that shareholders (and in particular institutional investors) should play a more active role in ensuring that companies are accountable not only to shareholders but also to civil society and it is quite clear to institutional shareholders that they are expected to be engaged. After all, institutional investors are generally fiduciaries for the ultimate economic owners of the assets they are investing, which obligates them to a duty of care and loyalty that includes exercising the voting rights on shares in their portfolios (Larcker *et al.*, 2015; McNulty and Nordberg, 2016). Therefore, the amendments to the SRD II may indicate a paradigm shift (Chiu and Katelouzou, 2017; Sergakis, 2019) in which shareholders are given a strengthened role in the corporate governance of investee companies. However, this shift seems to highlight a specific phenomenon called *robo-voting*: institutional investors automatically follow the advice of their proxy advisors so that they can prove to have complied with their fiduciary duties (Doyle, 2018; Rose, 2019). This is to support corporate criticism of the voting process which considers it to be a 'box-ticking' and 'one-size-fits-all' approach in which investors do not take into account the specific circumstances of the individual companies in which they hold shares (Jahnke, 2019).

In our opinion, this phenomenon highlights, on the one hand, an unintentional vote by institutional investors under the existing setup, possibly hampering engagement required by SRD II, determining an opportunistic behaviour. On the other hand, it emphasises the debate on formalistic vs meaningful compliance for an effective and more ethically driven corporate governance by institutional investors. The international literature on these issues is growing, but little is known on how institutional investors approach shareholder voting (Cucari, 2018; Boone *et al.*, 2019; Cucari *et al.*, 2019) and whether the increased attention to active ownership and proxy voting from policymakers has translated into enhanced shareholder engagement efforts by institutional investors (Gomtsian, 2018).

² The EU Commission set out a number of initiatives and most recently the Shareholder Rights Directive was amended (see Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement, hereinafter SRD II).

Based on this, we suggest the existence of a heterogeneity across institutional investors in several dimensions related to shareholder voting and analyse these issues, considering as well the opportunistic perspective of institutional investors. Therefore, our central research questions are: *How could the characteristics of institutional investors affect robo-voting phenomenon? How could robo-voting phenomenon favour the creation of new opportunistic behaviour, changing the scope of shareholder engagement?*

Our paper directly addresses these questions by using ANCOVA (Analysis of Covariance) to test the effect of characteristics of institutional investors on the dependent variable under study. We use a manually constructed sample of coverage information from 123 Annual General Meetings (AGMs) held by large Italian companies (FTSE MIB index's components) in the 4-year period 2015 to 2018 and the voting reports of three proxy advisors (ISS, Glass Lewis and Frontis Governance).

Our study contributes to the literature in several ways.

First, the increasing significance of shareholder voting in corporate governance requires better understanding of how institutional investors perform their engagement duties and investment stewardship role (Gomtsian, 2018). In our opinion, robo-voting phenomenon can alter engagement duties and create some opportunistic behaviour.

Second, this paper extends the growing but US-dominated literature on the link between shareholder voting and proxy voting advisory (e.g., Cai *et al.*, 2009; Ertimur *et al.*, 2013; Larcker *et al.*, 2015) and contributes to the current European debate on the power of proxy advisors (Hitz and Lehmann, 2018) and on the heterogeneity of institutional investor strategies.

Third, our findings add to the debate developed by Arjoon (2006), who stated that effective governance means 'adhering to ethical principles, not merely complying with rules', and we argue that legal compliance and a rules-based approach in themselves are not sufficient to guarantee institutional investors will adhere to their own duties.

Generally, our results show that some characteristics could increase some robo-voting phenomenon, and this could raise concerns about risks driving both proxy advisors and institutional investors towards an even more formalistic conception of their role. This situation can exacerbate the communication gap between all market actors by further dissociating these actors.

Our results have important implications for policy makers. We think that it is important to consider how to promote shareholder engagement in general in a European context and at the same time curb negative activism by some shareholders. We suggest there is a need to shape legal norms so as to enable institutional investors to fulfil their duties in a meaningful and not formalistic way. We argue that a strict enforcement framework impedes such a goal; thus, policy makers need to maintain social and not legal enforcement when designing the modus operandi of engagement duties so as to maintain the benefits of engagement and business ethics within the investment chain.

The remainder of the paper is structured as follows. Section 2 provides theoretical background, reviews of the major related literature and presents

our hypotheses. Section 3 explains our research design and method. Section 4 introduces the empirical analysis. Section 5 offers discussion and Section 6 concludes.

2. Theoretical background, literature review and hypotheses development

2.1 Shareholder engagement and opportunistic behaviour of institutional investors

Agency theory traditionally concerns principal-agent conflicts between shareholders and management that originate from such a separation (Jensen and Meckling, 1976). According to Perrow (1986, p. 14), agency theory is extremely biased as principal-agent models almost invariably assume that the agent is opportunistic and the principal is not. With regards to this, opportunism has always been an ‘agent’s thing’ (Shapiro, 2005; Dalton *et al.*, 2007; Sobol, 2016). Only recently has it been proposed to take into account the concept of the opportunism of the principal in order to fully capture the reciprocal nature of the problems arising in agency relationships. For example, Zardkoobi *et al.* (2017) considered the opportunistic short-term-oriented behaviour of shareholders towards CEOs.

Here, we argue that principal-principal conflicts, which constitute the common argument between the ‘controlling shareholders’ and the ‘minority shareholders’ (Young *et al.*, 2008; Esposito De Falco, 2017), could also create new forms of opportunistic behaviour (Popov and Simonova, 2006). Opportunistic behaviours are considered ethically and economically troublesome since they disrupt otherwise mutually beneficial contractual relationships (Arika, 2020, p. 573). Our understanding of how a behaviour of principals (institutional investors) is opportunistic is very limited. According to Arika (2020), opportunistic behaviours are objectively and unequivocally defined by the content of contracts and therefore their observation is straightforward. Therefore, an opportunistic behaviour is a behaviour that violates contracts (formal contracts or relational contracts).

In this paper, we take a step toward filling this gap and examine how some institutional investors attain opportunism, that is to say, how they vote completely in alignment with external recommendations by proxy advisors and not with an internal analysis. This behaviour could raise some concerns which need to be addressed and could be in contrast to the ‘law of stewardship’ introduced in several jurisdictions to define the institutions’ and asset managers’ responsibilities towards their investee companies and promote sustainable forms of engagement on the part of institutional investors (Chiu and Katelouzou, 2017). Much of the corporate governance literature focuses on the identification and examination of internal mechanisms (i.e., board of directors, incentives) or external mechanisms (i.e., market for corporate control) that limit manager opportunism (Walsh and Seward 1990; Dalton *et al.* 2007). Here, we argue that shareholder engagement needs to be considered as an instrument to reduce opportunistic behaviour by some shareholders to the detriment

of others. From this perspective, we advocate the need to introduce an engagement policy for all institutional investors and asset managers and a form of disclosure-based regulation of institutional investors' investment policies and strategies, their arrangements with asset managers and the accountability of asset managers to institutional investors.

Based on this framework, the rights and duties of shareholders have always been included in the academic debate on how to ensure good corporate governance. However, while the Shareholder Rights Directive of 2007 (SRD I) focused on expanding formal rights in the context of an Annual General Meeting, the SRD II, also known as the Directive on Long-term Shareholder Engagement, seized upon the potential of transparency requirements and investor dialogue as transformative corporate governance tools in the hands of engaged investors (Ahern, 2018, p. 89).

Specifically, according to SRD II, effective and sustainable shareholder engagement is one of the cornerstones of the corporate governance model of listed companies, which depends on checks and balances between corporate bodies and different stakeholders. Greater involvement of shareholders in corporate governance is one of the levers that can help improve the financial and non-financial performance of companies, including environmental, social and governance factors. Consequently, it is important to consider how to curb negative activism by some shareholders in order to promote an effective shareholder engagement.

2.2 Legal and ethical compliance of institutional investors and proxy advisors

Although the use of proxy advisors does not necessarily imply that investors take a passive governance role (McCahery *et al.*, 2016), institutional investors might not control the votes associated with all the shares held in their portfolios due to legal and technical problems associated with introducing a full electronic proxy voting system (Mallin, 2001; Belinfanti, 2010). More generally, they use analysts' research as an input into their valuation models and investment strategies (Brown *et al.*, 2015; Bilinski *et al.*, 2019). According to some authors, the influence of proxy advisors has transformed proxy voting by institutional investors, and their importance is so flagrant that their activities have attracted the attention of scholars and policy makers³. From our perspective, this situation and the ongoing debate on the role of proxy advisors and institutional investors' voting provides an excellent opportunity to study the engagement duties of

³ In the American context, on 11 October 2017, Representative Sean Duffy introduced the Corporate Governance Reform and Transparency Act of 2017, which enhances transparency in the shareholder proxy system by providing for, among other things, the registration of proxy advisory firms with the SEC, disclosure of proxy firms' potential conflicts of interest and codes of ethics and the disclosure of proxy firms' methodologies for formulating proxy recommendations and analyses. At the same time, the European Commission and the European Securities and Markets Authority (ESMA) raised concerns about the role and influence of proxy voting advisors at European GSMs. The ESMA's recommendation was based on its finding that while there was no clear evidence of market failure in relation to proxy advisors' interaction with investors and issuers, stakeholders raised a number of concerns regarding the independence of proxy advisors and the accuracy and reliability of their advice.

investors going beyond *legal vs ethical* compliance (Sama and Shoaf, 2005; Arjoon, 2006; Fotaki *et al.*, 2019).

Longstaff (1986) argued that an overemphasis on legal, that is, formalistic, compliance mechanisms could be at the expense of ethical considerations since people may have fewer reasons to form their own opinions and take personal responsibility for the decisions they make. This idea led us to study the *robo-voting* phenomenon, which happens when institutional investors automatically follow the advice of their proxy advisors so that they can prove to have complied with their fiduciary duties (Doyle, 2018; Rose, 2019).

As said by Arjoon (2005), distinguishing between legal and ethical compliance can help to explain why legal compliance mechanisms are insufficient and may not be addressing the real and fundamental issues that inspire ethical behaviour. More generally, most authors emphasise that firms need to achieve an optimum mix between adherence to regulatory requirements and ethical principles in order to be able to create and sustain value for their stakeholders in the long run (see, for example, Sama and Shoaf, 2005; Verhezen, 2010).

In this framework, soft law norms (disclosure duties based upon the 'comply or explain' principle) correspond to the need to focus more on educational efforts to enable institutional investors (and proxy advisors) to prepare themselves for more meaningful compliance while aiming to understand the benefits of more engagement with other constituencies in the market. At the same time, soft law norms are vital to all recipients of such disclosures so as to clarify the variety of expectations that they should have with respect to the engagement duties, the content of the new requirements and the informational contours of the information disclosed.

Notwithstanding the 'comply or explain' flexibility offered to institutional investors (and proxy advisors), these disclosure duties operate within a legal framework that can trigger legal enforcement mechanisms if violated. Indeed, we are witnessing a legalisation of stewardship via the introduction of a duty to 'demonstrate' engagement which is based on public interests that aim to re-regulate this area (Chiu and Katelouzou, 2017). This 'legalisation trend' may have serious consequences on the efficiency of these duties and the behaviour of the concerned market actors, driving them towards a formalistic compliance and depriving them of the benefits of meaningful engagement and business ethics (Sergakis, 2019).

Consequently, legal enforcement refers to the administrative measures and sanctions imposed upon proxy advisors and investors for not complying with the engagement duties. In contrast, social enforcement relates to informal enforcement strategies, such as 'naming and shaming' via the disclosure not only of the violations themselves (e.g., public warning instead of the imposition of pecuniary sanctions) but also of the formal sanctions imposed (e.g., pecuniary sanctions). Legal sanctions that result into penalties belong to the legal enforcement spectrum. Other administrative measures that purport to sanction the concerned persons by disclosing either the penalty itself or a public warning should be seen as social sanctions since they pay attention to a meta-regulatory

function, namely the expected reputational effects of such actions upon the concerned shareholders and their ramifications upon the reaction stemming from market actors.

The crucial question, therefore, arises in relation to what is the most optimal enforcement framework to ensure compliance with these disclosure duties. Most importantly, in our opinion, it is crucial to avoid the creation of a hard and inflexible compliance framework that will drive institutional investors to more 'robo-voters'.

We argue that this outcome will be very likely since investors will have serious concerns that they will be sanctioned if they fail to prove the exercise of their fiduciary duties. Robo-voting phenomenon will therefore become the preferred way forward that will allow them to demonstrate engagement with proxy advisors and will enable them to avoid sanctions.

2.3 Literature review and hypotheses development

Shareholder voting has increased in importance during the last decade, and the ability of proxy advisors to influence investor voting becomes particularly significant as the importance of shareholder voting increases (Choi *et al.*, 2010; Calluzzo and Kedia, 2019).

Although the influence of proxy advisors is difficult to quantify, the literature on these issues is growing (Sauerwald *et al.*, 2018; Song *et al.*, 2020). Prior studies have investigated the impact of the largest proxy advisor (Bethel and Gillian, 2002), the level of agreement between ISS and Glass Lewis (Ertimur *et al.*, 2013), the conflicts of interest in the proxy advisor industry (Li, 2018), the difference between local and foreign proxy advisors (Heinen *et al.*, 2018) and the role of proxy advisors in a specific market (Hitz and Lehmann, 2018).

A number of studies have found that proxy advisors have a substantial impact on say-on-pay vote outcomes (Ertimur *et al.*, 2013; Larcker *et al.*, 2015) and that some firms change the composition of executive compensation so as to avoid a negative recommendation from proxy advisors (Bethel and Gillan, 2002; Morgan *et al.*, 2006; Malenko and Shen, 2016; Balsam *et al.*, 2016).

In the European context, Hitz and Lehmann (2018) found that the supply of proxy advisory services is incrementally higher in countries with comparatively weak investor protection standards and that they vary with firm characteristics in a way that suggests that outside ownership drives the demand for proxy advisor services.

Based on descriptive analyses, these authors found that proxy advisors' recommendations were associated with voting outcomes and that stock prices reacted to the publication of negative recommendations, in line with recent US evidence. Heinen *et al.* (2018) found that the three proxy advisors ISS, Glass Lewis and IVOX (German-based local proxy advisor which was acquired by Glass Lewis in 2015) differ significantly in their voting recommendations. In particular, the local proxy advisor stands out, suggesting that the information content provided by local proxy advisors differs from that provided by foreign proxy advisors. In addition, they found that the local proxy advisor had an incremental impact on voting

outcomes and, finally, that the impact of proxy advisors was stronger for companies with a larger free float.

Another group of studies has focused on the influence of proxy advisory firms on voting by institutional investors, finding a correlation between these firms' recommendations and the typology of companies and shareholders (Bethel and Gillan, 2002; Ertimur *et al.*, 2010; Iliev and Lowry, 2015). However, most research on institutional owners has not differentiated among types of investors (Hoskisson *et al.*, 2002), and the literature on shareholder voting lacks a specific focus on institutional investors' heterogeneity, in which minority shareholders often tend to be seen as a unique block (Webb *et al.*, 2003; Çelik and Isakkson, 2014; Abdioglu *et al.*, 2015).

For example, Larcker *et al.* (2015) suggested that non-blockholders and passive institutional investors are particularly likely to follow the advice of proxy advisors. Malenko and Shen (2016) showed that the influence of ISS was stronger in firms in which institutional ownership was larger and less concentrated and in which there were more institutions with high turnover or small positions, consistent with the hypothesis that such shareholders have stronger incentives to rely on ISS instead of performing independent governance research (Iliev and Lowry, 2015). Belcredi *et al.* (2017) analysed how different classes of investors (in particular, institutional investors) voted on say-on-pay and how their votes were related to proxy advisors' recommendations. They found, among other results, that institutional shareholders' votes were strongly correlated with proxy advisors' recommendations; this was particularly true for non-blockholders (holding less than 2% of the share capital), which have lower incentives to carry out autonomous research.

Quite the opposite, Aggarwal *et al.* (2014) showed that investor voting has become more independent of ISS recommendations. They found that institutional investors gave more attention to voting and conducted their own analysis regarding the voting decision on a case-by-case basis. According to these authors, an explanation for this result is that institutional investors increasingly developed their own policies. After all, as reported by Dent (2014), the overall influence of proxy advisors is not significant, and the proxy advisors' influence cannot be precisely measured for a different reason, for example, it may be largely the result of a self-fulfilling prophecy. In this regard, both voting by institutional investors and recommendations of proxy advisory firms can be influenced by the same factors that they have identified as important (Choi *et al.*, 2010).

Despite the involvement of institutional investors in the European corporate governance, the academic research on institutional investors and their fiduciary duties (i.e., voting) is relatively unexplored. Given the importance of institutional investors in firm governance, a better understanding of their voting behaviour is needed. However, it is noted that different types of institutional investors have different investment strategies and supervisory characteristics for corporate governance (Almazán *et al.*, 2005; Shen, 2019). Therefore, we should not consider institutional directors as a monolithic group (Dong and Ozcan, 2008).

Çelik and Isakkson (2014) identified seven different features that

influence how an institution will behave as an owner: i) purpose, ii) liability structure, iii) investment strategy, iv) portfolio structure, v) fee structure, vi) political/social objectives and vii) regulatory framework. Institutional investors can also be broken down on other dimensions that can affect how they function as shareholders (Coates, 2015): i) size, ii) investment strategy or style, iii) sponsorship or affiliation, iv) level of intermediation, v) nationality, vi) distribution channel and vii) liquidation method.

Therefore, it seems clear that several context-specific and investor-specific variables might affect the stewardship behaviour of institutional investors (Ivanova, 2017) and, in particular, their tendency to comply with proxy recommendations. The aim of this paper is to investigate these variables and their effects on the robo-voting phenomenon. Understanding the key determinants of institutional investors' behaviour is essential to promote efficient supervision by shareholders, especially considering the current trend toward increased concentration of equity ownership in the hands of a small number of (institutional) investors (Bebchuk *et al.*, 2017). As such, the voting behaviour of institutional investors can substantially affect the results of shareholders' consultations.

To shed light on the level of institutional investors' fulfilment of their fiduciary duties, we are interested in the extent to which evidence of compliance with proxy advisors' recommendations varies according to specific characteristics of institutional investors and is thus associated with institutional investors' differences.

The first dimension that we take into account is the regulations that are in place in the home country of the institutional investors. This variable might play a key role in determining how institutional investors engage in stewardship activities (Ryan and Schneider, 2002; Morgan *et al.*, 2006). In particular, we deem discriminant the opposition between mandatory and discretionary shareholder voting. We argue that in countries where shareholders are required by law to vote, institutional investors might be pressured to find the quickest and cheapest way to fit legal mandates without carefully considering the issues up for vote (Larcker *et al.*, 2015). To the contrary, when shareholder voting is only discretionary, institutional investors can properly engage in research activities on the spur of their true interest in executing their voting rights. Given these premises, we state the following:

Hp1: Robo-voting varies across institutional investors based on the regulations in place in their countries of residence (location).

In addition, remarkable differences in the institutional business model may induce a different behaviour by institutional investors (Sherman *et al.*, 1998). Cox *et al.* (2004) suggested that long-term institutional investment is positively related to corporate social performance. In other words, differences in robo-voting are not only driven by the national legislations but also by the investment strategy adopted by institutional investors, as well as their incentives and resources to gather information and to engage in corporate governance (Bennett *et al.* 2003; Cox *et al.* 2004; Elyasiani *et al.* 2010; García-Meca *et al.*, 2017).

Regarding proxy advisor recommendations, Iliev and Lowry (2015) showed that mutual funds vary greatly in their voting behaviour and also in their reliance on recommendations. McCahery *et al.* (2016) showed that voice intensity, as reflecting the spectrum of voice actions, is significantly negatively related to institutions' preferences for liquidity, positively related to investors with longer holding periods and not related to size of investors. Therefore, in light of the previous arguments, we affirm that:

Hp2: Robo-voting varies across institutional investors based on their investment styles.

Since there are different types of institutional investors (i.e., mutual funds, hedge funds, pension funds, insurance companies, etc.), we should probably be careful not to attribute the same 'stewardship tendencies' to all of them. We should rather consider that different types of institutional investors have heterogeneous preferences (Hoskisson *et al.*, 2002; Chen, 2019). For example, according to Brickley *et al.* (1998), it is possible to divide institutional investors into pressure-sensitive institutional investors and pressure-tolerant institutional investors. The first type, pressure-sensitive institutional investors, often have business and investment relationships with corporate management. The second type, the pressure-resisting institutional investors, have no other business links with the company and they can better resist the pressure of management, pay more attention to the long-term value of the company and play a certain supervisory role for the management. Furthermore, some authors suggest that institutional investors with multiple blockholdings face time constraints in monitoring their portfolio firms and are thus less likely to perform effective monitoring functions (Kempf *et al.*, 2017; Kang *et al.*, 2018). Thus, we make the following prediction:

Hp3: Robo-voting varies across institutional investors based on the category to which they belong.

3. Research method

3.1 Sample and Data

Our study analyses shareholders' votes and proxy advisors' recommendations on remuneration policy at 123 AGMs held by large Italian companies (FTSE MIB index's components) in the 4-year period 2015 to 2018.

This analysis focuses on Italian listed companies for two reasons. First, the previous literature has focused on the Anglo-Saxon context and we maintain that the Italian context, representative of continental European models of corporate governance, is also relevant for research due to its characteristics (Ciampi, 2015; Sancetta *et al.*, 2018). Second, the Italian context is the only major market where listed companies have to publish the minutes of general shareholder meetings on the corporate website, and

the minutes must include details of votes per resolution at asset owners' level.

The analysis exclusively refers to the vote on remuneration policy ('say-on-pay vote'), as it is generally the most controversial resolution in almost every market, and it is the resolution for which voting recommendations of proxy advisors differ the most due to the large variety of aspects to be analysed and differences in voting guidelines. We have analysed the recommendations of these three proxy advisors: ISS, Glass Lewis and Frontis Governance, which is the Italian partner of the European network of proxy advisors ECGS.

We analysed 106 institutional investors that voted in at least 3 AGMs every year or at least 10 AGMs in any year from 2015 to 2018, including all the Italian investors and foreign investors with more than EUR 3 billion in assets under management. By doing so, all the largest investors that are more active in the Italian market were analysed, including those which might have changed their voting policy in any of the years under analysis.

The main sources of information are the minutes of general shareholder meetings, the websites of listed companies and institutional investors. Proxy advisors' voting recommendations were provided by the proxy advisors themselves or obtained from market research published by proxy solicitors or other entities active in the proxy voting business.

3.2 Analysis Methods

Based on the nature of our data, we employed the analysis of covariance (ANCOVA) to test the hypotheses. Indeed, what we are interested in is to assess differences between groups of investors in the amount of robo-voting, while taking constant the effect of investors' size and voting experience. ANCOVA, belonging to the framework of analysis of variance (ANOVA), is specifically suited to test the magnitude of mean differences on the dependent variable between the levels of the categorical independent factors by assessing the significance level of the F value.

At the same time, compared with techniques such as ANOVA, ANCOVA allows us to control for the influence of numerical covariates. Indeed, ANCOVA is the generally accepted statistical technique for testing for the existence of significant differences between group means while assessing the influence of other covariates (Goodwin, 2003).

To store and edit data and to carry out the analysis, we used the SPSS (v. 22) software programme as a database management and analysis tool.

3.3 Variables and Measurement

For each institutional investor, we calculated the percentage of times its votes were in line with external recommendations during our period of analysis. This variable, called robo-voting, is our dependent variable.

With regards to the independent variables, we considered relevant characteristics of institutional investors, namely: investors' location, main investment strategy adopted and category of institutional investors. These are categorical factors made of discrete levels and represent the predictors for which we want to test the effect.

We also posited that the robo-voting phenomenon may be negatively related to the size of the investor, since smaller investors might be less motivated to embark on big research efforts to make better decisions. By the same token, more experienced investors voters may have developed more functional voting mechanisms and so they might be less affected by proxy recommendations. Given these considerations, we included for the control variables in the model two quantitative variables, namely investors' size and voting experience.

Table 1 shows a summary of the measurement of these variables and an Appendix is available

Tab. 1: Description of independent variables and measurement

Variable Label	Causal role	Description	Measurement
Location	Independent variable	Location of investor's headquarter or decision-making branch	Continental Europe; Italy; North America; UK & Australia
Strategy	Independent variable	The main strategy according to which the majority of assets are invested	Active, quantitative (or passive) and mixed (for investors equally using both active and quantitative strategies)
Category	Independent variable	Institutional investor type	Alternative investor/hedge fund; Dependent Asset; Independent Asset; Pension and sovereign funds
Size	Control variable	Assets under management (AUM)	Total market value (\$) of all the financial assets managed by institutional investors on behalf of their clients and themselves
Experience	Control variable	Voting on AGM	Total number of AGMs that the investor participated in over the 2015-2018 period
Robo-voting	Dependent variable	Amount of voting aligned with proxy recommendations	Percentages of votes aligned with proxy recommendations in all the AGMs held over the 2015-2018 period

Source: our elaboration

4. Results

The main results of the ANCOVA are presented in Table 2.

Tab. 2: ANCOVA effects. Dependent variable: Robo-voting

	Sum of Squares	df	Mean Square	F	Sig.
Intercept	7.732	1	7.732	526.730	.000
Location	.191	3	.064	4.336	.007
Strategy	.097	2	.049	3.307	.042
Category	.132	3	.044	3.002	.035
Size	.119	1	.119	8.137	.006
Experience	.001	1	.001	.052	.821
Category * Location	.289	8	.036	2.465	.019
Strategy * Location	.080	4	.020	1.357	.256
Category * Strategy	.007	4	.002	.120	.975
Error	1.160	79	.015		
Total	82.588	106			

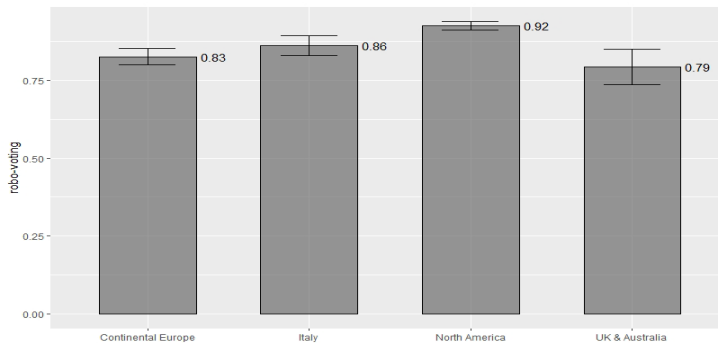
Source: our elaboration

In general, the coefficient of determination ($R^2 = .438$) indicates that the model is able to explain almost 44% of the variability of the response variable around its mean.

Looking at the influence of the single variables, it turns out that the main effects of the independent factors are all significant, namely location ($F=4.336$, $p<.01$), strategy ($F=3.307$, $p<.05$) and category ($F=3.002$, $p<.05$).

Indeed, North American investors show, on average, the highest percentage of robo-voting (Figure 1), while investors in UK and Australia have the lowest percentage.

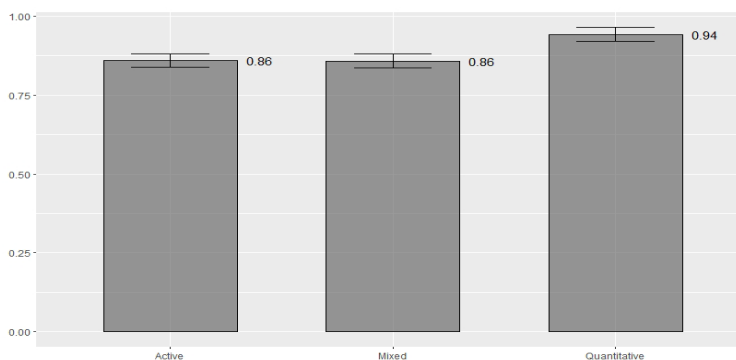
Fig. 1: Comparing means in robo-voting by location



Source: our elaboration

As for the strategy adopted by the institutional investors, we can see that investors using a quantitative strategy are those with the highest mean of robo-voting percentage (Figure 2).

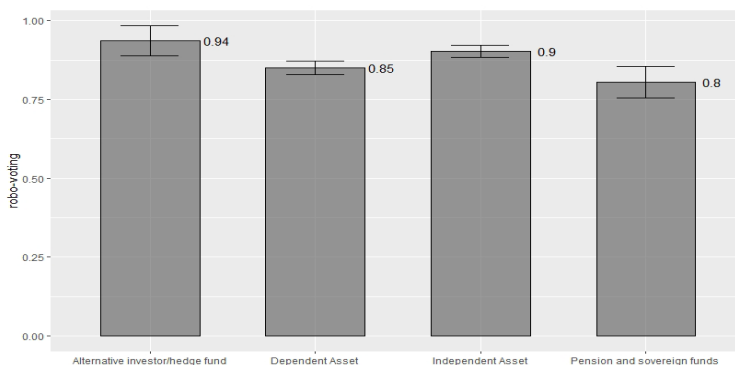
Fig. 2: Comparing means in robo-voting by strategy



Source: our elaboration

The category that investors belong to also has a significant effect on robo-voting since it looks like alternative investors and hedge funds have the highest propensity to follow proxy recommendations, while pensions and sovereign funds have the lowest one (Figure 3).

Fig. 3: Comparing robo-voting means by investors' category



Source: our elaboration

There is also a significant negative effect of Assets Under Management on robo-voting ($\beta = -5.816E-05$, $t = -2.853$, $p < .01$) so that bigger investors seem to be less likely to blindly follow proxy recommendations. The other control variable-investors' voting experience-has no significant effect on the dependent variable.

In addition, the interaction term between investors' category and location is significant ($F = 2.465$, $p < .05$). In order to inspect this interaction more deeply, we looked at the estimated marginal means of the combinations of levels of the interacting variables (Table 3).

Tab. 3: Estimated marginal means of LOCATION*CATEGORY on ROBO-VOTING

LOCATION	CATEGORY	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Continental Europe	Alternative investor/hedge fund
	Dependent Asset	.833	.028	.778	.888
	Independent Asset	.803	.056	.692	.914
	Pension and sovereign funds	.797	.047	.705	.890
Italy	Alternative investor/hedge fund	.636	.123	.391	.882
	Dependent Asset	.842	.063	.717	.967
	Independent Asset	.872	.067	.739	1.006
	Pension and sovereign funds	.780	.138	.505	1.056
North America	Alternative investor/hedge fund	.948	.061	.827	1.070
	Dependent Asset	.935	.036	.863	1.007
	Independent Asset	.943	.024	.895	.991
	Pension and sovereign funds	.892	.069	.755	1.030
UK & Australia	Alternative investor/hedge fund	.977	.086	.806	1.148
	Dependent Asset	.734	.061	.613	.856
	Independent Asset	.945	.074	.798	1.092
	Pension and sovereign funds	.280	.137	.008	.552

Source: our elaboration

Specifically, it seems that in countries like the United Kingdom, Australia and North America, alternative investors and hedge funds are the category of investors that are the most involved in robo-voting. On

the contrary, among Italian investors, hedge funds are the least prone to robo-vote⁴.

In summary, the analysis shows that investors' location, strategy and category have an influence on the robo-voting phenomenon. In addition, the size of the investor negatively affects the propensity for robo-voting, whilst voting experience has no significant effect.

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5. Discussion

Many institutional investors use the services of proxy advisors, specifically the recommendations on how to vote in general meetings of listed companies. However, the use of proxy advisors should not exempt institutional investors from their fiduciary duty to act in the best interests of their clients by taking voting decisions in their best interest. According to Business Roundtable members, the recent high incidence of voting immediately on the heels of the publication of proxy advisory reports suggests that investors may not be spending sufficient time evaluating proxy advisors' guidance and determining whether it is in the best interests of their clients or, alternatively, that they simply outsource the vote to the proxy advisor. From this perspective, the robo-voting phenomenon could be a proxy of opportunistic behaviour and highlight a new problem regarding the interpretation of the relationship within the proprietary system in which the issue of opportunism is not only related to the role of proxy advisors but also to the fiduciary role of institutional investors. As suggested by Malenko and Malenko (2019), the market efficiency view does not take into account the collective action problem among shareholders. They showed that because shareholders do not internalise the effect of their actions on other shareholders, there may be excessive overreliance on proxy advisors' recommendations and, as a result, excessive conformity in shareholders' votes. Because of the collective action problem, the amount of resources they are willing to spend on acquiring information internally or externally in order to be adequately informed on each and every vote is minimal, requiring them to seek the services of a low-cost provider of voting recommendations.

In this framework, the meaningful engagement amongst institutional investors and proxy advisors goes hand-in-hand with an ethical stance that our paper aims to decipher and advance.

Based on our results, we identify specific factors (*location*, *strategy* and *category*) that may influence robo-voting and could be understood as determinants of opportunism in institutional investors' behaviour.

Regarding location, the result could depend on the fact that US investors are obliged to vote at all general meetings held by investee companies, while other investors (like French institutional investors) have to adopt a voting policy and annually report on the implementation of their own policy on a

⁴ It is important to highlight that we consider the country where voting decisions are taken as the main location of the institutional investors, regardless of the actual country of incorporation. Therefore, we considered as 'Italian' those alternative investors and hedge funds that take voting decisions from Italy, despite being headquartered in the United Kingdom.

'comply or explain' basis. In this way, the French legislation seems to have supported the development of investors' specific skills, allowing them to consciously exercise voting rights and fulfil fiduciary duties. In this regard, legal compliance seems to push investors through a 'robo-voting' or 'just comply' approach, as they are more worried about mere compliance with the law than about an informed and aware exercise of active ownership. Therefore, we argue that to maintain the same amount of flexibility in enforcement, provisions should not contain legal sanctions against market actors in the area of engagement duties but should leave enforcement to the market at large by focussing on social sanctions only. This stance will be likely to preserve the following benefits: independence of voting, meaningful fulfilment of fiduciary duties, constructive engagement with proxy advisors, avoidance of mindless compliance and ultimately an ethical stance that serves clients' interests and not liability concerns.

Regarding strategy, investors using a quantitative strategy are those with the highest mean of robo-voting percentages. This result goes against the statements of all large passive investors, who claimed to be the most active of all in monitoring governance precisely because the voice option is the only option available to them in case of bad practices since they do not have total discretion in selling. Therefore, we confirm the idea that the rise of passive investing is good news for investors, who benefit from greater diversification and lower costs, but the implications for corporate governance are less positive. As reported by Shapiro Lund (2018, p. 495), 'passive fund managers will also be likely to adhere to low-cost voting strategies, such as following a proxy advisor's recommendation or voting "yes" to any shareholder proposal that meets pre-defined qualifications. After all, since the goal of an index fund is to meet, not beat, the market, the investors would not derive any competitive benefit from receiving highly informed and precise recommendations and therefore would have no incentive to spend the money that the creation of such recommendations would require.

Regarding category, our results show how only pressure-resistant investors (Brickley *et al.*, 1988), such as pensions and sovereign funds, are more independent, and this could demonstrate their commitment. This is consistent with the idea that pension funds tend to invest for the long term and actively monitor management relative to other types of institutions (Bushee, 2001).

Taken together, these findings suggest that it is inappropriate to attribute the shareholder's voting decision to the 'power' of the proxy advisor. As said by Choi *et al.*, (2010), information provided by a proxy advisor affects the shareholder vote; the proxy advisor has some limited influence but inferring from this correlation that the advisor has power over the shareholder vote is an overstatement. Institutional investors should therefore consider the analysis of proxy advisors as an input into their own decisions, based on voting guidelines defined by taking into account the needs of their clients and their investment strategies. The key problem is that institutional shareholders might be paralysed by rational reticence or rational apathy. Thus, this type of problem might increase the incentives of institutional investors to cast their votes as robo-voting actors.

Therefore, maintaining robo-voting practices will impede institutional investors from fulfilling their duties towards their clients. In this regard, we propose that social enforcement (ethical compliance) mechanisms can be seen as a first (experimental) approach to drive stewardship strategies that will allow a gradual and steady transition towards legal enforcement (legal compliance) once these norms have been interpreted and used consistently at both national and EU levels. For example, the engagement duties could justify the option of social enforcement due to their novel and still relatively unknown character both for national competent authorities and for market actors. Intervening directly with legal enforcement, as is currently the case with the Shareholder Right Directive II, without passing through this social and ethical compliance (soft law stage) will ultimately impede greater convergence in the understanding, application and optimal use of these duties at the expense of clarity, engagement, stewardship and good governance.

6. Conclusion

In line with the growing academic literature on the role of proxy advisors' recommendations in institutional investors' voting, this paper explores the extent to which proxy advisors' recommendations affect investors' votes, distinguishing between different investor characteristics.

Examining say-on-pay voting practices of 106 institutional investors between 2015 and 2018 at 123 general meetings of large Italian corporations and comparing them to three proxy advisors' recommendations (ISS, Glass Lewis and Frontis Governance), our paper considers how compliance within a legal enforcement operational spectrum interacts with ethical and meaningful practices that can also have an impact upon proxy voting.

We identify some specific determinants of commitment and opportunism of those institutional investors that strictly vote in alignment with external recommendations (including proxy advisors and issuers' proposals).

We argue that such voting based on *robo-voting phenomenon* is restricted to specific types of institutional investors and, more importantly, that this might be the negative by-product of a duty to 'demonstrate' engagement on the part of institutional investors. Specifically, this duty could depend on location, strategy and category of institutional investors.

Our study contributes to the literature in the following ways.

First, from a policy perspective, we argue that legal enforcement of the conceptual and operational spectrum of engagement duties currently sits uncomfortably upon institutional investors and proxy advisors. Indeed, social enforcement has significant merits in the area of these engagement duties and should stand as a viable alternative to legal enforcement, at least at the current stage.

We argue that, if imposed, legal enforcement in this area will legitimise investor disengagement and will make shareholder apathy more justified in the eyes of the public because the primary concern will be the avoidance

of liability instead of the development of engagement practices⁵. Another major concern about the perils of legal enforcement at this stage which merits particular attention is that it does not fit harmoniously with the conceptual premise of the new shareholder duties that relate to the engagement and interaction with other market actors.

We strongly believe that the main benefit of these duties is to trigger further engagement in the markets, increase the educational benefits or disclosure in this area and gradually fight against shareholder apathy. The imposition of legal enforcement thus risks weakening the educational benefits that can derive from increased disclosure in this area. Such a stance also risks compromising business ethics that promote engagement and the fulfilment of duties towards the ultimate beneficiaries. We therefore argue in favour of a flexible regulatory stance that incentivises actors to continue engaging and not to depend on robo-voting practices that may assist in avoiding liability but ultimately put business ethics in jeopardy.

Second, to the best of our knowledge, our paper is the first to study the determinants of opportunism of the behaviour of institutional investor who can also influence the quality of corporate decision making.

We provide empirical evidence that the robo-voting behaviour depends on some characteristics of investors. In addition, since the existing literature on these topics is based on data from US firms, and analyses in other contexts such as Europe are infrequent, this study contributes to the European evidence: the robo-voting, the practice of institutions to automatically rely on both proxy advisors' recommendations and in-house policies without an evaluation of the merits of the recommendations or the analysis underpinning them, is also diffused in the Italian context.

As with any study, this one is not without limitations. However, these limitations provide opportunities for further research. First, we refer only to the Italian market, which may be considered as a 'peripheral market' by investors (particularly by North American investors), both in terms of culture/practices and size of investments, and they might be less incentivized than their European colleagues to spend time and resources on in-depth analysis. A more in-depth and precise analysis should compare the behaviour of the investors themselves in different markets. Second, we included some specific characteristics of institutional investors derived from literature and experience. Therefore, future research should consider other characteristics, such as investment horizon and liquidity portfolio.

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⁵ In addition, the wording of Article 14b of the EU Directive 2017/828 (SRD II) is very broad and can be interpreted in many different ways, raising concerns about its applicability across the EU and the ensuing consequences for the automatic use of services, as highlighted in our study.

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Appendix

Tab. 1A: Category: Frequency Distribution

	Frequency	Percent	Cumulative Percent
Alternative investor/hedge fund	7	6.6	6.6
Dependent Asset	43	40.6	47.2
Independent Asset	43	40.6	87.7
Pension and sovereign funds	13	12.3	100.0
Total	106	100.0	

Source: our elaboration

Tab. 2A: Location: Frequency Distribution

	Frequency	Percent	Cumulative Percent
Continental Europe	32	30.2	30.2
Italy	11	10.4	40.6
North America	50	47.2	87.7
UK & Australia	13	12.3	100.0
Total	106	100.0	

Source: our elaboration

Tab. 3A: Strategy: Frequency Distribution

	Frequency	Percent	Cumulative Percent
Active	53	50.0	50.0
Mixed	37	34.9	84.9
Quantitative	16	15.1	100.0
Total	106	100.0	

Source: our elaboration

Tab. 4A: Quantitative variables' descriptive statistics

		Experience	Size	Robo-voting
N	Valid	106	106	106
	Missing	0	0	0
Mean		65.26	424.83	.87
Median		64.50	197.41	.90
Mode		123	ND	1.00
Std. Deviation		35.68	735.83	.14
Variance		1273.45	541445.21	.02
Minimum		11	1.540	.39
Maximum		123	5243.220	1.00
a. Multiple modes exist. The smallest value is shown.				

Source: our elaboration

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Co-produzione di valore nei servizi museali e performance multidimensionali: un approccio dinamico a supporto del management culturale¹

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Abstract

Contesto della ricerca: nei piccoli centri urbani la co-produzione di servizi museali può essere una leva per la generazione di valore pubblico.

Obiettivi del paper: lo scritto mira ad illustrare come un approccio multidimensionale di performance governance sia in grado di offrire una prospettiva sistemica per l'identificazione degli outcome gestionali, organizzativi e di comunità nonché di evidenziare leve per il miglioramento dei processi di generazione di valore nei musei e a beneficio della comunità.

Metodologia: dapprima si è proceduto alla revisione della letteratura sul tema della co-produzione di servizi pubblici. Per analizzare le performance di tali contesti collaborativi si è costruito un framework multidimensionale, poi applicato ad un caso di studio. Infine, si è proceduto al riscontro delle proposizioni avanzate.

Risultati: l'articolo evidenzia in che modo la co-produzione sia in grado di apportare risorse aggiuntive rispetto a quelle in possesso all'organizzazione istituzionalmente responsabile del servizio. Inoltre, dall'applicazione del modello al caso emergono misure di performance gestionali, organizzative e di comunità.

Limiti della ricerca: le limitazioni attengono alla reperibilità di informazioni quantitative per valutare gli effetti della iniziativa.

Implicazioni pratiche: l'identificazione di performance driver fa emergere gli effetti della disponibilità di risorse sui diversi livelli di performance, evidenziando le connessioni causali che rivelano il contributo della co-produzione agli outcome.

Originalità del paper: l'articolo sviluppa il framework analitico Dynamic Multidimensional Performance Governance ed evidenzia il contributo che la co-produzione offre ai processi di generazione di valore nei piccoli centri.

Parole chiave: co-produzione; collaborative governance; servizi museali; performance; governance; dynamic performance management

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Co-production of museum services and multidimensional performance: a dynamic approach to support cultural management

Context of the research: in small urban centres, the co-production of museum services can be a lever for the generation of public value.

Purpose of the paper: the paper aims to illustrate how a multidimensional approach to performance governance can offer a systemic perspective for the identification of managerial, organizational and community outcomes. It aims as well to highlight levers for the improvement of value generation processes in museums and for the benefit of the community.

Methodology: the literature on public services co-production was first reviewed. A multidimensional framework was built to analyze the performance of the collaborative context; then it was applied to a case study. Finally, we proceeded to check the proposed propositions.

Results: the article highlights how co-production is able to bring additional resources to those held by the institution responsible for the service. Furthermore, from the application of the model to the case, management, organizational and community performance measures emerge.

Limitations of the research: the limitations concern the scarce availability of quantitative information to evaluate the effects of the initiative.

Practical implications: the identification of performance drivers brings out the effects of the availability of resources on different levels of performance, highlighting the causal connections that reveal the co-production contribution to the outcomes.

Originality of the paper: the article develops the Dynamic Multidimensional Performance Governance analytical framework and highlights the contribution that co-production offers to value generation processes in small towns.

Keywords: co-production; collaborative governance; museum services; performance; dynamic performance management

1. Introduzione

Negli ultimi dieci anni, la crescente complessità del settore pubblico (Bouckaert *et al.*, 2017; OECD, 2017) ha richiesto nuove logiche di erogazione dei servizi pubblici (Osborne *et al.*, 2012; Osborne, 2020). Diversi studi hanno evidenziato come la co-produzione possa rappresentare una modalità alternativa per l'erogazione di servizi (Alford, 2016; Nabatchi *et al.*, 2017a), una “nuova via” (Sicilia *et al.*, 2015a), rispetto al classico ricorso allo “Stato” o al “mercato”.

Nel contesto italiano, non infrequentemente i piccoli centri urbani sono testimoni di esperienze di co-produzione relative, ad esempio, alla raccolta differenziata dei rifiuti, all'assistenza domiciliare, o ancora a percorsi di partecipazione alla redazione del bilancio dei comuni, alla valutazione della dirigenza e alla pianificazione territoriale (Storlazzi, 2006; Bartocci e Picciaia, 2013). Anche nel settore culturale, la co-produzione è stata impiegata per l'erogazione di servizi e, in particolare, in quei contesti caratterizzati da prossimità geografica tra *community* e museo, essa ha

rappresentato una leva per l'innovazione nella produzione culturale e la fruizione di servizi museali (Brown e Peers, 2003, p. 3; Harrison, 2005; Museums Association, 2014).

Queste evidenze pongono sfide di adeguatezza e sostenibilità ai modelli manageriali tradizionali, in quanto implicano che la *governance* e la gestione di tali relazioni collaborative inter-istituzionali (Borgonovi, 2004) siano estese anche ai soggetti non istituzionalmente responsabili dell'erogazione del servizio (Nabatchi *et al.*, 2017b, p. 771). In questo senso, si pone l'esigenza di esplorare le implicazioni della co-produzione e identificare quali dimensioni ne caratterizzano la performance (Sorrentino *et al.*, 2018). Infatti, obiettivo del lavoro è comprendere in che modo i sistemi di performance management possano supportare la governance network (Klijn, 2008) nel miglioramento degli outcome riferibili al servizio. Ci si è chiesti, quindi, su quali fattori il management museale possa far leva per migliorare gli outcome del servizio di co-produzione e quali misure di performance siano in grado di cogliere tali miglioramenti.

In questa prospettiva, lo scritto discute il caso "Museo Civico di Castelbuono" (MCC), un museo di un piccolo centro urbano localizzato in Sicilia, che ha per oggetto il servizio di visita guidata della sede museale. L'analisi evidenzia in che modo la comprensione delle relazioni causali sottostanti ai risultati permetta una migliore gestione delle strutture relazionali tra i soggetti coinvolti, così da potenziare l'attitudine del network a co-produrre il servizio, migliorare la performance dell'ente museale e generare valore per la comunità.

A questo scopo l'integrazione del *Dynamic Multidimensional Model of Network Performance* (Cepiku, 2014) con l'*outcome-based Dynamic Performance Management* (DPM) approach (Bianchi, 2016) consente di esplorare in chiave causale i diversi livelli performance.

Dopo l'introduzione, il secondo paragrafo definisce il concetto di *co-production* e discute la rilevanza della co-produzione in ambito culturale. Nel terzo paragrafo viene costruito il *framework* utile per l'analisi del caso. Nel quarto paragrafo sono illustrati gli aspetti relativi alla strategia e alla metodologia di ricerca. Caso di studio e discussione sono trattati rispettivamente nel quinto e nel sesto paragrafo. Infine, riflessioni di sintesi e implicazioni manageriali concludono il lavoro.

2. La co-produzione in ambito culturale

La co-produzione configura una modalità di attuazione della governance collaborativa (Alford, 2014, 2016; Bovaird e Loeffler, 2016; Cepiku, 2016; Edelenbos e van Meerkerk, 2016; Pestoff *et al.*, 2013) allorquando il confine tra la governance e la produzione del servizio è "poroso" (Alford, 2016, p. 159). Per esservi co-produzione alcuni input impiegati nel "processo di produzione" (Ostrom, 1996) devono essere apportati da soggetti esterni rispetto alla organizzazione istituzionalmente deputata alla erogazione del servizio (Bovaird *et al.*, 2016; Pestoff *et al.*, 2013).

Il concetto di co-produzione è emerso negli studi di *public management* a partire dagli anni '70 del secolo scorso (Ostrom e Ostrom, 1971). Da allora la sua pregnanza rispetto alla realtà dei servizi pubblici appare

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essersi rafforzata. Infatti, è sempre più evidente, come le amministrazioni pubbliche dipendano dalla partecipazione delle comunità per l'attuazione delle politiche e per l'erogazione dei servizi, tanto più di quanto le comunità dipendano da esse (Osborne, 2018; Osborne *et al.*, 2016).

La co-produzione è stata oggetto di diversi studi nel settore culturale e più in particolare nel *management* dei musei. Tre argomenti principali caratterizzano la produzione scientifica sul tema: partecipazione delle comunità/audience, intervento nei processi di produzione culturale e ruolo della tecnologia nel supportare partecipazione e coinvolgimento. La letteratura ha dibattuto sul significato di valore culturale (Hewison e Holden, 2004) e su come una maggiore partecipazione del pubblico possa incrementare il livello di accountability e di legittimazione delle istituzioni culturali, sviluppando l'idea che le decisioni riguardanti il patrimonio culturale debbano coinvolgere non solo gli esperti di *heritage*, ma anche il pubblico più in generale (English Heritage, 2008). Dindler (2014), Smith e Iversen (2014) hanno posto l'accento sul ruolo dell'*engagement* per il mantenimento di strutture relazionali tra organizzazioni che gestiscono patrimonio culturale e comunità, anche con riferimento a diverse tipologie di audience. Più specificamente, alcuni lavori hanno preso in esame il rapporto tra organizzazione museale e soggetti esterni, enfatizzando la relazione esistente tra istituzione culturale e comunità di riferimento (Brown e Peers, 2003; Harrison, 2005) anche di tipo virtuale (Affleck e Kvan, 2008).

La partecipazione e le relazioni sociali hanno consentito a diversi musei di esplorare le possibilità offerte dalla co-produzione come meccanismo di contribuzione esterna nelle fasi di produzione culturale, sfumando la distinzione tra produttore e consumatore delle mostre (Davies, 2010). L'interesse non si è limitato agli aspetti di partecipazione delle comunità (Heywood, 2009), ma ha riguardato anche il modo in cui l'audience interviene nel processo di fruizione/creazione dell'opera d'arte (Mulhearn, 2008) e alle possibilità che le nuove tecnologie offrono (Morrison, 2009) per incrementare le capacità co-creative dei visitatori (Pera, 2017).

Appare evidente che apertura verso l'*audience* e inclusione del pubblico siano aspetti centrali - quasi obbligatori - per le strategie dei musei contemporanei. Infatti, la partecipazione emerge come obiettivo relazionale tra pubblico e museo (Bandelli e Konijn, 2015) e caratterizza il progetto stesso di museo (Knudsen, 2016). Pertanto, appare cruciale comprendere come supportare il management museale nella gestione di tali relazioni sociali e, in particolar modo, quando la performance riferibile alla co-produzione di un servizio pubblico è influenzata dalle interazioni interne al network (i.e., la governance).

Secondo una prospettiva prevalente, il valore pubblico generato è il risultato dell'interazione tra i partner che si configura in modo relazionale piuttosto che transazionale (Alford, 2016). Tuttavia, alcuni autori hanno criticato tale prospettiva "sociale", ponendo enfasi, invece, sulla natura professionale della relazione (Boyle e Harris, 2009). Oggetto di dibattito in letteratura è anche la natura del contributo fornito dai soggetti coinvolti nella relazione: la co-produzione esiste solo se i contributi sono volontari o può essere concettualizzata anche in caso di coercizione? Secondo Whitaker

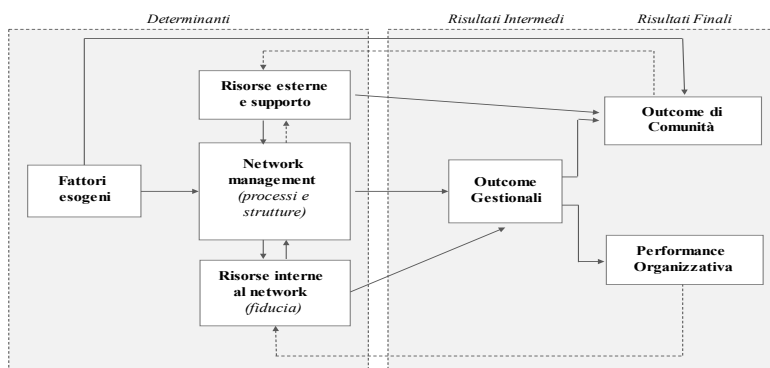
(1980) l'aspetto volontario è predominante, mentre per Alford (2016) la volontarietà è il fulcro della co-produzione, ma essa potrebbe includere misure di ottemperanza per spingere gli utenti a cooperare. Entrambe le componenti - relazionale e volontaria - richiedono che la logica di azione debba essere gestita dai soggetti aderenti al contesto di governance e che siano adottati appositi sistemi di gestione delle performance a livello inter-istituzionale (Pillitu, 2008).

3. Un approccio dinamico e multidimensionale alle performance dei network

I sistemi di gestione delle performance sono meccanismi atti a sostenere l'attitudine dei decisori a governare la complessità dinamica e a supportarli nel percorso di attuazione di politiche sostenibili (Bianchi *et al.*, 2017). A livello di network appaiono essere fondamentali per l'ottenimento di risultati (*outcome*) durevoli nel tempo (Klijn *et al.*, 2010). Il concetto di *outcome* è qui inteso come l'impatto di un programma, in ragione dei fini che contribuisce a raggiungere, rispetto agli obiettivi prefissati (de Kruijf e de Vries, 2018) o alle più ampie attese dei cittadini (Levy *et al.*, 1975). In esso si sostanzia un aspetto saliente dei risultati delle aziende pubbliche (Bouckaert e Halligan, 2008; Van Dooren *et al.*, 2015) che richiede un apposito approccio per la sua analisi.

La performance riferibile ad un processo di co-produzione si realizza su differenti livelli tra loro interdipendenti (Cepiku, 2014). Provan e Milward (1995, 2001) hanno sviluppato un modello volto alla misurazione dell'efficienza di un network basato su tre livelli di analisi: a livello organizzativo/partecipativo, a livello del network ed a livello della comunità. Cepiku (2014, p. 142) ha revisionato tale modello smussando la dicotomia esogeno/endogeno, nonché ampliando la gamma delle determinanti della performance. Tale modello (figura 1) consta di due principali elementi: le determinanti e i risultati intermedi e finali. Le determinanti sono distinte in fattori esogeni, risorse e supporto esterno, processi e strutture del network, nonché risorse interne, processi e caratteristiche strutturali del network, nonché risorse interne, anche a carattere immateriale, come la fiducia tra i soggetti.

Fig. 1: Modello dinamico e multidimensionale della performance dei network



Fonte: Cepiku, 2014, p. 178.

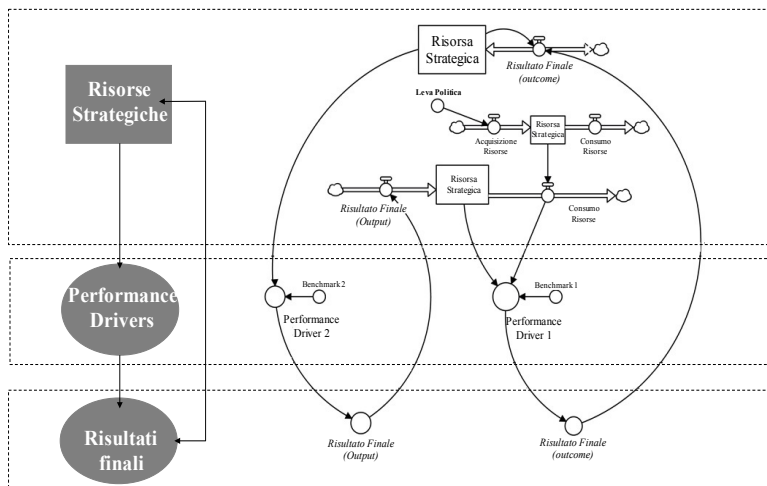
Gli *outcome* intermedi (e.g., la qualità dell'interazione tra i soggetti) sono influenzati dai processi e dalle strutture del network, insieme alle risorse interne. Gli *outcome* finali sono invece ricondotti a due livelli: performance organizzativa e performance di comunità (Cepiku, 2014, p. 179). Gli outcome a livello di comunità sono determinati dai risultati intermedi e dal contributo aggiuntivo dato dalle risorse esterne, mentre la performance a livello organizzativo è determinata dai processi interni al network. Tale modello multidimensionale si presta ad essere utilmente impiegato per l'analisi della performance del processo di co-produzione di servizi pubblici attraverso un network. Se in tali sistemi appare relativamente fattibile gestire i risultati a breve termine (*output*) di una singola organizzazione, il livello di difficoltà aumenta quando si tratta di governare gli *outcome* prodotti da contributi aggregati di molteplici soggetti (Bovaird *et al.*, 2016; Klijn, 2016; Osborne *et al.*, 2016) in ambienti caratterizzati da complessità e dinamismo (il network locale).

Per governare tale complessità, il modello multidimensionale della performance dei network può essere opportunamente integrato con l'approccio *Dynamic Performance Management* (DPM) proposto da Bianchi (2016). Il DPM evidenzia, *in primis*, i processi di accumulazione e degrado delle risorse e le connessioni con i soggetti a cui queste appartengono. Inoltre, differenzia le risorse in base alla loro natura - come risorse fisiche, di capacità, d'informazione o generate da routine gestionali (e.g., conoscenza, immagine, capitale sociale) o, ancora, finanziarie (Bianchi, 2016; Morecroft *et al.*, 2002). L'approccio DPM esplicita i meccanismi di feedback consentendo l'individuazione di leve efficaci per il miglioramento dell'impatto delle politiche sulla comunità. Esso supporta le esigenze di comprensione dei *trade-off* nel tempo e nello spazio, dei ritardi temporali che intercorrono tra decisioni e risultati ed evidenzia le relazioni non lineari che influenzano gli *outcome*. L'adozione di una prospettiva sistemica (Forrester, 1961; Sterman, 2000) alla gestione delle performance consentirebbe di superare visioni statiche e settoriali dei risultati, migliorando il disegno delle politiche (Ghaffarzadegan *et al.*, 2011).

La figura 2 presenta i tre livelli concettuali su cui si basa il DPM. Procedendo dal basso verso l'alto: risultati finali (*output e outcome*), performance driver e risorse strategiche (Bianchi, 2016).

Seguendo questa logica, il DPM richiede, *in primis*, di mettere a fuoco gli *output e outcome* del sistema. In secondo luogo, l'analisi implica l'identificazione di quei fattori critici che influenzano i risultati finali. I performance driver sono definiti in termini relativi tra il livello in essere delle risorse strategiche ed uno standard. Ad esempio, il driver "competenze/competenze desiderate" influisce sulla qualità del servizio offerto, in quanto, a parità di altre condizioni, ad un livello di competenze, quanto più prossimo al livello desiderato, corrisponde un minor livello di errori nell'erogazione del servizio.

Fig. 2: I tre livelli concettuali su cui basa il Dynamic Performance Management

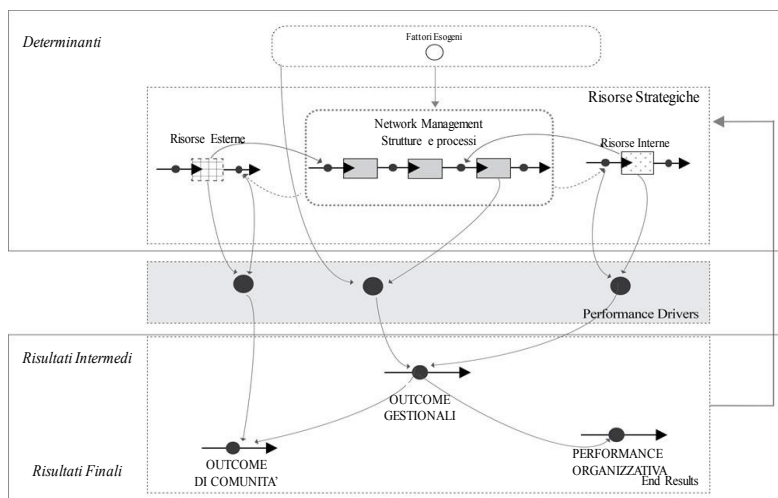


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Fonte: adattamento da Bianchi, 2016.

Esplicitando le relazioni causali, il DPM fornisce ai decisori una chiave di lettura riguardo le leve politiche che, modificando la dotazione o il mix di risorse strategiche, influenzano i performance driver e per questa via i risultati finali, ossia gli *outcome* del servizio di co-produzione. Questi ultimi, attraverso un meccanismo di *feedback*, incrementeranno le risorse strategiche a monte, rendendo una politica sostenibile nel tempo. L'integrazione tra modello multidimensionale della performance dei network e DPM è rappresentata graficamente in figura 3.

Fig. 3: Rappresentazione grafica dell'integrazione concettuale tra i due modelli di analisi della performance



Fonte: ns. elaborazioni

L'approccio concettuale così costruito mantiene gli elementi proposti da Cepiku (2014, 2016), aggiunge i vantaggi offerti dall'approccio sistemico (Sterman, 2000) e rafforza l'analisi della performance attraverso una visione "strumentale" e *outcome-based* (Bianchi, 2016, p. 73), estendendo quindi il dominio classico dei sistemi di performance management (Bouckaert e Halligan, 2008) verso il "performance governance" (Halligan *et al.*, 2012). Pertanto, tale *framework* può essere utilmente adottato per analizzare - a più livelli - la performance del processo di co-produzione oggetto del caso di studio.

4. Strategia e metodologia della ricerca

Si è ritenuto che il ricorso al caso di studio potesse costituire una strategia efficace per comprendere in che modo la *governance network* (Klijn, 2008) possa essere supportata attraverso l'adozione di sistemi di performance management nel miglioramento della performance riferibile ad un processo di co-produzione di servizi museali, nonché per identificare, con riferimento al caso oggetto di analisi, misure di risultato atte a sostenere "criticamente" il management culturale nelle attività di design, erogazione e gestione del servizio.

La metodologia della ricerca è caratterizzata da quattro fasi successive. Nella prima si è proceduto alla revisione della letteratura sul tema della co-produzione di servizi pubblici, discutendo i principali argomenti inerenti alla *co-production* nel settore culturale. Considerato l'obiettivo del lavoro, si è ravvisata l'esigenza di costruire un *framework* per l'analisi della performance (si veda *supra*, paragrafo 3) del processo di co-produzione oggetto del caso di studio. Ciò si è reso necessario per comprendere il contributo che la letteratura sulla misurazione della performance dei network, incrociata con quella relativa al performance management dinamico, può fornire al perseguimento degli obiettivi della *governance collaborativa*, nonché al miglioramento dei risultati della stessa.

Nella seconda fase, è stato selezionato il caso di studio MCC (Turrini, 2002). Esso appare rilevante poiché presenta i tratti caratteristici di volontarismo su cui si basa la co-produzione, mostra contributi e benefici di diversa natura, ed ha delle dimensioni significative rispetto alla realtà in cui avviene.

Ai fini dello sviluppo del caso si è fatto ricorso all'uso di molteplici fonti, in modo da tracciare un profilo adeguato del contesto (Morris e Wood, 1991) ed offrire indicazioni sul processo, sulle motivazioni e sull'impegno civico. Infatti, per comprendere le ragioni della partecipazione, risulta necessaria una ricerca contestuale-sensitiva che possa andare al di là di un'analisi meramente descrittiva della *governance* (Lang *et al.*, 2013, p. 237). Poiché nessuna singola fonte detiene un vantaggio assoluto (Yin, 2013, p. 116) e per aumentarne la validità interna, nello sviluppo del caso di studio è stato necessario validare le informazioni attraverso molteplici fonti (Lewis *et al.*, 2007). In tabella 1 sono riportate il tipo di fonte utilizzata, la fonte specifica e la motivazione sottostante all'uso della

stessa. In particolare, l'utilizzo di diverse fonti documentali, le interviste, nonché la somministrazione di questionari hanno consentito l'acquisizione degli elementi necessari per analizzare il caso sotto il profilo qui esplorato. Al contempo, la realizzazione di interviste semi-strutturate ai principali decisori ha permesso di raccogliere evidenze sulle caratteristiche del servizio e sui tratti distintivi del processo di co-produzione.

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Tab. 1: Tipologia di fonti impiegate nello sviluppo del caso e motivazione per la consultazione

Tipo di fonti	Fonte	Motivazione
Documentale	ProLoco Website	Comprendere scopo del servizio e modalità di partecipazione e fruizione del servizio.
Documentale	Accordi Comune Museo e Pro-LoCo	Comprensione del ruolo degli attori all'interno del processo.
Documentale	Report gestione museo 2016	Comprensione strategie e posizionamento del MCC.
Intervista semi-strutturata	Presidente Pro-LoCo [2 interviste]	Comprendere il ruolo dei soggetti e le risorse apportate dai volontari.
Intervista semi-strutturata	Direttore MCC [1 intervista]	Comprendere mission dell'organizzazione, offerta culturale e interazione nel processo.
Intervista semi-strutturata	Volontari Pro-LoCo [6 interviste]	Conoscenza delle competenze dei volontari e delle motivazioni.
Questionari	Visitatori del Museo [20 questionari]	Comprendere le aspettative dei visitatori e i punti di forza e debolezza del servizio.
Osservazione partecipante	Partecipazione alla visita guidata	Comprendere il tipo di servizio.

Fonte: ms elaborazioni

Nella terza fase, seguendo un approccio deduttivo, si è proceduto alla applicazione al caso del modello concettuale costruito ad hoc con l'obiettivo di identificare i diversi livelli di performance e le relative misure, nonché proporre una griglia di indicatori.

Nella quarta fase, si è proceduto al riscontro delle proposizioni avanzate nello studio attraverso 5 interviste - con domande a risposta aperta e multipla - agli attori chiave (il Presidente e il Direttore del Museo Civico, l'Assessore al Turismo del Comune di Castelbuono, il Presidente della Pro-LoCo e un volontario impegnato nell'erogazione del servizio). La tabella 2 sintetizza e aggrega domande e relative risposte.

Tab. 2: Sintesi delle domande e relative risposte in forma aggregata

1	In che misura ritiene che la seguente definizione descriva le modalità attraverso cui il servizio di assistenza turistica viene erogato a mezzo della collaborazione tra Comune, Museo Civico, Pro-Loco (volontari) e visitatori? <i>Una modalità di agire collettivo attraverso cui organizzazioni, individui e professionisti del settore pubblico contribuiscono e partecipano con competenze e risorse all'erogazione di un servizio a fronte del quale essi ottengono benefici di diversa natura che sono per essi rilevanti.</i>		
	Molto [3]	Abbastanza [2]	Poco [0]
2	Può segnare l'area corrispondente all'interno della matrice di valutazione della tipologia e della portata delle relazioni tra professionisti erogatori-utenti nel disegno del servizio e nelle modalità operative di erogazione? (Bovaird, 2007, p. 848).		
	Tutti e cinque gli intervistati hanno segnato l'area corrispondente al concetto di co-production (pieno coinvolgimento di professionisti e utenti/volontari/comunità sia nel disegno che nella erogazione del servizio) [5].		
3	Può descrivere il beneficio atteso dalla sua organizzazione a fronte della compartecipazione all'erogazione del servizio?		
	Risposte aperte: - attuare la mission dell'organizzazione; - promuovere il patrimonio del territorio - efficienza nell'erogazione del servizio;	- miglioramento della relazione Museo-Cittadini; - opportunità professionali per giovani qualificati; - miglioramento della qualità della visita; - rispondere alle esigenze delle diverse audience.	
4	In cosa si sostanzia il valore creato dal servizio?		
	Risposte aperte: - miglioramento dell'esperienza turistica; - miglioramento dell'immagine di Castelbuono; - miglioramento della soddisfazione del turista;	- incremento della produzione culturale (esperienza formativa del visitatore); - creazione di ricchezza per la comunità, il territorio e le attività commerciali (come effetto della catena del valore);	
5	Quali risorse tangibili e intangibili tale valore contribuisce ad alimentare?		
	Risposte aperte: - qualità percepita; - immagine del territorio;	- budget del Museo; - livello di coinvolgimento dei cittadini; - produzioni culturali.	
6	In che misura i visitatori assistiti possono modificare/personalizzare il tipo di accompagnamento (es. percorso, durata, lingua, contenuti differenziati per audience)?		
	Alta [0]	Media [5]	Bassa [0]
7	Il contributo offerto dai volontari della Pro-Loco alla erogazione del servizio avviene:		
	In forma individuale [4]		In forma collettiva [1]
8	Come avviene il processo di selezione dei volontari?		
	Risposta aperta: attraverso percorsi di adesione all'associazione e selezione in base alle competenze richieste.		

Fonte: elaborazione nostra

Infine, per validare la griglia di indicatori di performance identificati in questo studio, si è proceduto a somministrare un questionario (tabella 5) finalizzato a catturare il livello di consenso sulle misure di performance e sulle relazioni causali "risorse-driver-risultati" proposte in questo studio.

5. La co-produzione della visita guidata del “Museo Civico” di Castelbuono

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Il caso di studio analizza il processo di co-produzione del servizio di visita guidata offerto ai visitatori del “Museo Civico” di Castelbuono (MCC), un piccolo centro urbano localizzato in Sicilia (Italia). MCC è una istituzione culturale del Comune di Castelbuono ed ha sede presso il Castello Comunale dei Ventimiglia, che per secoli ha rappresentato la dimora della famiglia aristocratica dei Ventimiglia. Dal 1920 il bene è proprietà comunale dopo essere stato acquistato dai cittadini attraverso una raccolta fondi. Oggi il castello conserva ed espone manufatti liturgici legati al culto di Sant’Anna, patrona del piccolo centro nonché la pregiata Cappella Palatina in cui sono custodite le reliquie della Santa. Oltre alla sezione di arte sacra, due ulteriori sezioni del museo sono dedicate a fornire informazioni storiche, archeologiche ed architettoniche sul castello e sulla evoluzione urbanistica del piccolo centro. Una sezione d’arte contemporanea e due sale dedicate alle mostre temporanee completano l’offerta del museo.

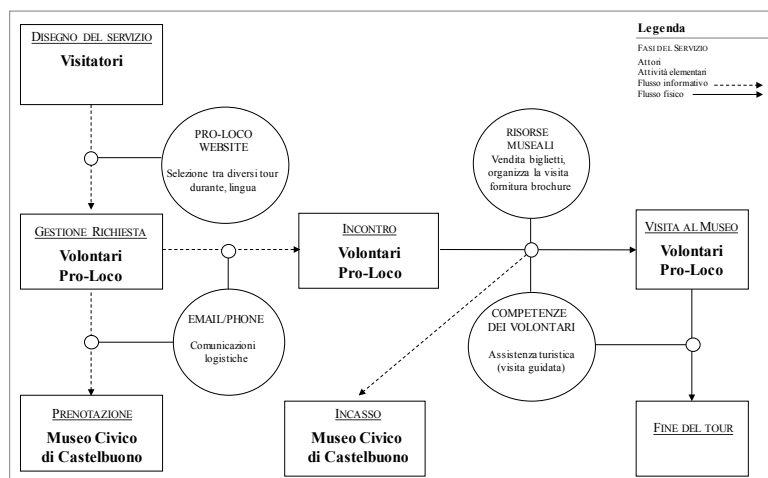
Il flusso dei biglietti venduti dall’istituzione culturale segna un aumento medio del 3% annuo nell’ultimo quinquennio, passando da 35.000 nel 2014, a circa 40.000 visitatori a fine 2018. Il servizio di visita guidata offerto presso l’MCC coinvolge tre attori principali: l’istituzione museale, la Pro-Loce e gli stessi visitatori (e.g., cittadini residenti e turisti). Il museo ha un proprio personale di servizio, mentre la Pro-Loce impiega sette volontari nei compiti di assistenza turistica al museo, coprendo complessivamente 6150 ore di servizio all’anno. La logica del servizio si sviluppa seguendo lo schema presentato in figura 4 e si compone di sette fasi. Nella prima i visitatori hanno la possibilità di personalizzare il servizio, scegliendo tra percorsi di diversa durata, nonché tra lingue alternative (inglese, tedesco, giapponese e italiano). In seguito ad una prenotazione, nel caso di gruppi organizzati o recandosi direttamente presso la biglietteria del museo, la richiesta è gestita dai volontari che la inoltrano all’amministrazione del museo. Il museo, in questa fase, ha il compito di vendere i biglietti e raccogliere il denaro, mentre i volontari della Pro-Loce di erogare il servizio di visita guidata, in base alle modalità concordate.

L’analisi delle fasi inquadra la partecipazione al processo come una forma di co-produzione “individuale” (Bovaird *et al.*, 2015; Loeffler e Bovaird, 2016). Per beneficio individuale si intende un ritorno, utilità, o giovamento a favore di un singolo soggetto. Il beneficio collettivo si realizza quando il ritorno è riferibile a più soggetti indistintamente, se alla comunità nella sua interezza (Alford, 2002, 2014). Tuttavia, non è escluso che tali benefici possano sovrapporsi o produrre esternalità positive (Nabatchi *et al.*, 2017a). Allo stesso modo, contributo individuale e collettivo si differenziano per l’eventualità che il primo possa essere apportato senza la necessaria partecipazione degli altri soggetti, obbligatoria, invece, nel secondo caso (solista vs orchestra) (Bovaird *et al.*, 2016).

Nel caso oggetto di studio, il contributo al processo di co-produzione avviene in forma individuale e su base volontaria. I soggetti sono mossi dal desiderio di partecipare alla cosa pubblica, anche in presenza di bassi

incentivi riconducibili a meccanismi di mercato (Alford, 2009). Ciascun visitatore trae individualmente beneficio dal processo, diversamente dal museo che persegue il proprio interesse collettivo (Pestoff, 2012) rispettando la propria missione istituzionale (i.e. valorizzare, preservare e promuovere il patrimonio culturale di Castelbuono) e ai volontari che partecipano attivamente alla vita della comunità. Tale sinergia tra benefici genera valore pubblico e privato (Alford, 2016; Löffler *et al.*, 2008).

Fig. 4: Descrizione del processo di co-produzione del servizio “visita guidata” presso il MCC



Fonte: elaborazione nostra

Valore che può essere ricondotto a tre livelli di performance: i) gestionale; ii) organizzativa (*outcome* finale) e iii) di comunità (*outcome* finale). La tabella 3 evidenzia i livelli e identifica diverse misure di risultato associate alle organizzazioni cui si riferiscono.

Tab. 3: Livelli, misure di performance e organizzazioni coinvolte

Livello di performance	Misure di performance	Organizzazioni coinvolte
Gestionale	Visitatori assistiti al mese	Pro-Loco, Museo
	Variazione nella disponibilità di ore per volontariato	Pro-Loco, Museo
Organizzativa	Variazione della qualità della visita al museo	Museo
	Nuovi volontari della Pro-Loco	Pro-Loco
	Nuove competenze	Pro-Loco
Comunità	Variazione nel coinvolgimento dei cittadini	Museo, Pro-Loco e Comunità
	Nuove persone interessate al volontariato	Museo, Pro-Loco e Comunità

Fonte: elaborazione nostra

A livello gestionale due misure caratterizzano la performance del processo di co-produzione: i “visitatori assistiti al mese” e la “variazione nella disponibilità di ore per volontariato”. La prima misura coglie il volume della co-produzione, mentre il secondo misura la variazione della capacità di servizio. A livello organizzativo, vi sono tre risultati: “variazione della qualità della visita”, “nuovi volontari Pro-loco” e “nuove competenze”. A livello comunitario, “la variazione nel coinvolgimento dei cittadini” rappresenta l'effetto di propagazione che potrebbe scaturire dal processo di co-produzione sulla variazione delle persone disposte a partecipare alla cosa pubblica mentre le “nuove persone interessate al volontariato” rappresenta l'aspetto quantitativo di tale impegno.

L'applicazione del modello al caso (tabella 4) ha evidenziato in che modo il network contribuisce ai diversi livelli di performance, distinguendo determinanti (i.e., risorse), generatori di risultato (i.e., performance driver) e risultati finali (i.e., outcome).

Tab. 4: Prospettiva strumentale dell'applicazione del modello dinamico e multidimensionale per l'analisi delle performance del network al caso di studio

Determinanti						
Risorse strategiche						
Risorse Esterne		Risorse appartenenti alla struttura dei processi del network			Risorse interne	
Cittadini interessati al volontariato		Volontari Pro-Loco			Competenze dei volontari	
		Capacità di servizio			Motivazione dei volontari	
		Attrattività Museo				
		Livello di coinvolgimento dei cittadini				
		Qualità della visita				
Performance Driver						
Rapporto capacità di servizio	Rapporto riconoscimenti ai volontari	Rapporto Qualità	Gap capacità di servizio	Rapporto competenze volontari	Adeguatezza del servizio	Densità volontari
Domanda attesa espressa in ore di servizio	Riconoscimenti offerti ai volontari	Qualità corrente del servizio	Livello in essere della capacità di servizio	Competenze possedute dagli interessati al volontariato	Competenze e abilità dei volontari	Numero volontari
Ore di lavoro disponibili	Riconoscimenti attesi dai volontari	Qualità attesi dai visitatori	Livello desiderato di capacità di servizio	Soglia di competenze minime	Competenze richieste	Popolazione
Visitatori assistiti nel mese	Variazione ore di disponibilità	Donazioni medie per visitatore	Nuovi volontari Pro-loco	Nuove competenze	Variazione nella qualità della visita	Variazione nel coinvolgimento dei cittadini Nuovi volontari
Performance Gestionale			Performance Organizzativa			Performance di comunità

Fonte: ns elaborazioni

La tabella 4 presenta le connessioni di strumentalità tra le risorse strategiche - le determinanti - i driver di performance, espressi in termini relativi e risultati finali, con riferimento a ciascun livello di performance. Alla luce di tali connessioni, è possibile evidenziare su quali risorse strategiche intervenire per migliorare ciascun livello di performance.

L'attività di riscontro degli indicatori ha evidenziato un elevato grado di consenso rispetto alle misure, alle relazioni tra driver e risultati finali e, in definitiva, sulle potenzialità del framework analitico adottato.

Tab. 5: Sintesi dell'attività di riscontro degli indicatori per i tre livelli di performance

	Risultato finale	Performance driver	Descrizione dell'indicatore e relativo livello di consenso [0-5]
Performance gestionale	Visitatori assistiti nel mese	Domanda attesa espressa in ore di servizio	L'adeguatezza della capacità di servizio determina un incremento del flusso di visitatori assistiti in presenza di incremento della domanda (ad esempio in occasione di particolari eventi culturali). [5]
		Ore di lavoro disponibili	
	Variazione ore di disponibilità	Riconoscimenti offerti ai volontari	I riconoscimenti, tra cui la possibilità di elaborare progetti culturali finanziabili da specifiche azioni del ministero o dell'UE, consentono un incremento delle ore di disponibilità, cioè una maggiore capacità di servizio. [5]
		Riconoscimenti attesi dai volontari	
	Donazioni medie per visitatore	Qualità corrente del servizio	Misure di qualità del servizio: - grado di conoscenza della lingua straniera; - grado di conoscenza del patrimonio storico o dei manufatti artistici esposti nelle sezioni museali; - livello di esperienza formativa culturale fornita. [5]
		Qualità attesa dai visitatori	
Performance Organizzativa	Nuovi volontari Pro-loco	Livello in essere della capacità di servizio	L'esistenza di un gap nella capacità di servizio induce alla selezione di nuove di nuovi volontari con cui effettuare l'erogazione del servizio. [5]
		Livello desiderato di capacità di servizio	
	Nuove competenze	Competenze possedute dagli interessati al volontariato	Le competenze sono valutate dai responsabili della Pro-Loco, dal Direttore e Presidente del Museo. Competenze minime stabilite in: - titolo di studio idoneo (laurea in lingue, BB.CC., studi artistici); - <i>soft skill</i> (capacità relazionali e comunicative, autonomia, propensione al miglioramento). [5]
		Soglia di competenze minime	
	Variazione nella qualità della visita	Competenze e abilità dei volontari	Le competenze richieste si sostanziano nella capacità dei volontari di offrire un percorso adeguato alle diverse audience, così da promuovere un'esperienza formativa. Esempi di competenze sono: lingue straniere, la profondità di linguaggio e l'appropriatezza terminologica. [5]
		Competenze richieste	
Performance di comunità	Variazione nel coinvolgimento d ei cittadini	Rapporto tra il numero dei volontari	Il coinvolgimento dei cittadini è inteso dai decisori come incremento del livello di fiducia verso l'istituzione culturale a fronte di un incremento di qualità nelle performance. Propagazione della pratica di co-produzione anche ad altri servizi. [5]
	Nuove persone interessate al volontariato	Popolazione	

Fonte: elaborazione nostra

Più in dettaglio, dal riscontro:

- sono emerse misure relative alla qualità del servizio (grado di conoscenza della lingua straniera, grado di conoscenza del patrimonio storico/monumentale e dei manufatti artistici esposti nelle sezioni museali; livello di esperienza formativo/culturale erogata al visitatore);
- si è potuto identificare la soglia di competenze minime richieste per ciascun volontario (laurea in lingue, discipline relative a BB.CC. o studi

- si è sviluppata una futura strategia per il miglioramento del servizio attraverso progetti culturali in cui l'attività dei volontari possa rappresentare uno strumento attuativo di alcune finalità di un più ampio programma culturale.

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6. Discussione: il contributo del modello per il miglioramento degli outcome gestionali, organizzativi e di comunità

La tendenza al miglioramento della performance nel settore pubblico ha interessato anche il management delle istituzioni culturali. Tuttavia, una acritica applicazione - ad esempio nei musei - di metodi manageriali protesi al miglioramento dell'efficienza ed efficacia a più livelli non è dispensata dal rischio di generazione di conflitti e contraddizioni in ordine a cosa si è realizzato e a come lo si è realizzato. In questo senso, come sottolineato da Zan (2006), la complessità e la multidimensionalità della performance dei musei può dare origine a conflitti e *trade-off* latenti. In particolare, il perseguimento dell'efficienza, nella sua accezione tradizionale, trova difficile applicazione nel campo delle produzioni artistiche, in quanto il perseguimento di tale logica potrebbe condurre al paradossale caso di concepire "un'orchestra composta da un solo elemento" - il massimo dell'efficienza. Con riferimento all'efficacia, invece, il management museale da un lato deve considerare la dimensione storico-estetica - caldeggiata da curatori, accademici, appassionati e artisti - e dall'altra privilegiare un orientamento nell'erogazione dei servizi museali che sia incline alla soddisfazione dell'utente. Da ciò ne discende che un tentativo di inquadramento degli outcome gestionali, organizzativi e di comunità deve considerare tali aspetti di complessità e integrarli all'interno di un modello di gestione e misurazione della performance. Per quel concerne il caso preso in esame, la dimensione storico-estetica dell'efficacia e le sollecitazioni con l'efficacia orientata all'utente è qui colta - seppur limitatamente - attraverso il *trade-off* esistente tra il miglioramento dell'outcome gestionale "visitatori assistiti mensilmente" e quello organizzativo "variazione qualità della visita".

Per *outcome* gestionali si intendono quei risultati strettamente collegati alla erogazione del servizio. Un primo outcome gestionale è il numero di "visitatori assistiti mensilmente". La garanzia di uno standard di servizio è cruciale quando si tratta di attività di volontariato. Tale risultato dipende dal livello di domanda per il servizio e dalla relativa capacità di servizio. Pertanto, la Pro-Loco dovrebbe cercare di mantenere tale capacità, in termini di ore di disponibilità dei volontari, in linea con le richieste di visite guidate. A questo scopo, una turnazione flessibile dei volontari potrebbe consentire l'allocazione della capacità quando richiesta.

Un secondo outcome gestionale è la "variazione nella disponibilità" che dipende in larga parte dalla motivazione dei volontari. Tuttavia, quest'ultima è tendente a ridursi nel tempo, anche in presenza di adeguati riconoscimenti, un fattore da non sottovalutare. Pertanto, appare

opportuno contrastare questo processo inerziale assicurando un turn-over dei volontari. Infatti, se, da un lato la governance del servizio deve motivare i volontari attraverso un adeguato riconoscimento, dall'altro, è importante che essa sia attiva nel sostenere meccanismi di coinvolgimento dei cittadini e di selezione di nuovi possibili volontari.

Con performance organizzativa ci si riferisce ai risultati delle singole organizzazioni che partecipano alla erogazione del servizio. La "variazione della qualità della visita" è un risultato riferibile al museo. Su di esso incide il driver "rapporto competenze" che, a sua volta, dipende dalla risorsa strategica "livello di competenze e capacità" che, però, è gestita dalla Pro-Loce attraverso le politiche di selezione dei volontari. In questo caso appare evidente come la governance consenta all'amministrazione museale di partecipare alle decisioni che incideranno su tale risultato organizzativo. Tuttavia, ad un aumento del numero di visitatori assistiti mensilmente, cioè dell'efficacia gestionale, potrebbe non corrispondere un miglioramento dell'efficacia organizzativa riferibile al museo, ossia la qualità della visita; in quanto la capacità di erogare il servizio nonché lo sviluppo di aspetti storico-estetici di tipo sostanziale e procedurale molto spesso non è compatibile con sensibili aumenti di volume di visitatori, specie nei piccoli musei basati sul volontariato.

Infine, a livello di comunità, la performance è riferibile a quei risultati che derivano dall'erogazione del servizio di cui ne beneficia l'intera comunità, come effetti di più lungo periodo e/o che travalicano i confini del servizio/network per propagarsi anche ad altri settori. L'outcome "variazione nel coinvolgimento dei cittadini" dipende dal livello di partecipazione dei volontari raffrontato alla popolazione attiva nel piccolo centro. Tale *outcome* varia la risorsa strategica intangibile "impegno civico" che sintetizza la disponibilità della popolazione a contribuire e impegnarsi volontariamente per il raggiungimento di fini pubblici, che a sua volta impatta su un secondo outcome di comunità "nuove persone interessate al volontariato". Questi due risultati di comunità sono essenziali per la governance, in quanto da essi dipende la possibilità concreta di offrire servizi in regime di co-produzione (Vignieri, 2020).

7. Conclusioni

In questo lavoro si è cercato di comprendere in che modo i sistemi di performance management possano supportare la governance network nel miglioramento degli outcome associati ai processi di co-produzione di servizi pubblici in ambito culturale, nonché proporre misure e indicatori di risultato collegati alle diverse dimensioni della performance. A questo scopo, in questo lavoro si è discusso un caso studio avente ad oggetto la co-produzione del servizio di "visita guidata" presso un museo di un piccolo centro urbano.

In chiave conclusiva è possibile rispondere alla domanda di ricerca avanzata nel paragrafo introduttivo: su quali fattori il management museale può far leva per migliorare gli *outcome* del servizio di co-produzione e quali misure di performance sono in grado di cogliere tali miglioramenti? Gli

indicatori riferibili ai risultati intermedi e finali risultano particolarmente validi per supportare il management culturale poiché catturano il risultato di scelte che intervengono in nodi cruciali della rete (ad esempio, il processo di selezione dei volontari incide sulle competenze disponibili, sulla capacità di servizio e sulla qualità della visita), ossia laddove si realizzano le connessioni tra più soggetti. Tali nodi sono i punti da presidiare in quanto particolarmente forieri di comportamenti idiosincratici.

Anche in questa sede, è bene sottolineare che una sfrenata tendenza al “miglioramento della performance” può purtroppo determinare l’insorgere di una tendenza del management ad adottare modelli di misurazione dei risultati con un atteggiamento passivo, acritico, o di adattamento da altre realtà, anche dissimili negli elementi sostanziali che caratterizzano la complessità della performance museale (Zan, 2006). Per tali ragioni è opportuno sottolineare che un’approfondita analisi del contesto organizzativo e del più ampio sistema inter-istituzionale consente di introdurre sistemi di performance management più adeguati. In particolare, tali sistemi devono considerare quegli aspetti di complessità specifica dei servizi pubblici, specie quelli a carattere culturale. Infatti, in tali servizi il carattere di immaterialità e immanenza è più marcato. In questa ottica il perseguimento dell’efficacia dipende non infrequentemente tanto dagli aspetti “sostanziali e funzionali” dal servizio (Zan, 2006, p. 21) quanto dalle caratteristiche soggettive dell’utente finale, dalle condizioni socio-culturali del contesto in cui tali servizi vengono erogati, nonché dalle modalità di erogazione del servizio (Osborne, 2018; Lusch e Vargo, 2013).

Da ciò discendono alcune implicazioni manageriali. Un primo elemento riguarda la capacità intrinseca della *co-production* di attivare risorse aggiuntive e di motivare i contributi individuali degli attori interni al network. Infatti, come evidenziato dalle relazioni di strumentalità tra risorse, performance driver e risultati finali, per incrementare gli *outcome* è necessario intervenire sulla motivazione dei volontari, poiché quest’ultima determina il livello della capacità del servizio e sostiene la propagazione dell’impegno civico estensibile, anche, ad altri servizi.

Un secondo aspetto attiene alla gestione del servizio da parte del network. L’approccio qui proposto: 1) permette agli attori chiave di identificare punti cruciali delle relazioni su cui intervenire per migliorare la performance di sistema; 2) evidenzia le determinanti della performance; 3) offre misure di performance relative ai risultati intermedi e finali. In particolare, è attraverso i *performance driver* che i decisori possono disegnare efficaci strategie per incrementare gli *outcome*. Ad esempio, se l’obiettivo del museo è quello di incrementare il livello di assistenza (e.g., il numero di visitatori assistiti mensilmente e la qualità della visita) in conseguenza di aperture serali per eventi, con riferimento a particolari tipi di audience oppure più genericamente in relazione ad un incremento di domanda, il *management* del museo e della Pro-Loce devono intervenire sulle determinanti causali della risorsa “capacità di servizio”. Essi dovrebbero ridurre il *performance driver* “gap di capacità di servizio” e migliorare le “competenze dei volontari” agendo sul *driver* “rapporto competenze volontari”. Infatti, una selezione dei volontari funzionale ad incremento della capacità di servizio dovrebbe essere effettuata in base al possesso di specifiche competenze in

grado di rispondere ai suddetti obiettivi di miglioramento stabiliti a monte dal *management* del museo. Lo standard di competenze richieste è posto infatti denominatore del driver “rapporto competenze volontari”.

Un terzo aspetto riguarda il consenso degli *stakeholder* in ordine alle strategie da intraprendere. L'illustrazione del *framework* unitamente all'attività di riscontro degli indicatori hanno accresciuto la coerenza e l'allineamento delle chiavi di lettura dei risultati tra i soggetti appartenenti al network, sostenendo così la funzione di miglioramento e apprendimento del *performance management*.

Pertanto, il management museale può essere adeguatamente supportato nell'identificare le risorse di network funzionali all'erogazione del servizio e nel comprendere come i processi di accumulazione e degrado delle risorse possano consentire un miglioramento del servizio. Infine, il rafforzamento della comunicazione con i partner crea le basi per lo sviluppo di forme di controllo culturale (Ouchi, 1980; Mintzberg *et al.*, 1976).

Al contrario, un approccio egemone che non consideri la complessità del network, sottende il rischio che le tensioni tra efficienza ed efficacia non siano adeguatamente presidiate, dando luogo ad illusione di controllo o riduzione del valore generato (Jönsson, 1996).

Per concludere, si è consapevoli che il ricorso ad un singolo caso di studio presenti delle limitazioni in ordine alle possibilità di confronto con situazioni e contesti diversi da quello preso in esame. Ulteriori ricerche sono necessarie per porre a confronto, all'interno della realtà italiana, i piccoli centri con contesti più ampi: confrontando esperienze analoghe di co-produzione nei musei delle grandi città, o iniziative culturali anche a carattere permanente promosse dalle università o dagli enti di ricerca. Consapevoli dei limiti del lavoro, si ritiene che il modello analitico fornisca un contributo per l'avanzamento della conoscenza sul tema e, considerato il campo di analisi, la discussione del caso e le implicazioni che ne discendono possano supportare il management delle istituzioni culturali.

Sviluppi futuri potrebbero incrementare la validità, legittimità e funzionalità del *framework* così da contribuire ulteriormente alla comprensione delle dimensioni da considerare al fine di governare in chiave collaborativa la performance dei processi di co-produzione.

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Sinergie Italian Journal of Management

Useful information for readers and authors

Aims and scope

What is the positioning of Sinergie Italian Journal of Management?

Sinergie Italian Journal of Management, the official journal of the Società Italiana Management (SIMA-the Italian Society of Management), is a peer-reviewed scholarly publication that presents leading research across all business and management areas and focuses on the main trends and boundary-pushing ideas in management studies.

What is this journal's topic coverage?

The journal has a broad thematic profile and covers various areas in the business and management field, such as strategic management, corporate governance, entrepreneurship, international business, sustainability, small and family business, operations and supply chains, strategic communication, marketing, retailing and service management, innovation and technology management, tourism and culture management and, of course, business ethics and general management.

What is "Italian" in Sinergie Italian Journal of Management?

This journal aims both to bring the Italian management perspective to the international debate and to encourage scholars worldwide to contribute through an innovative approach on topics relevant to the sound conduct of businesses and other organisations. The journal's keywords include, but are not limited to, management applications specially relevant to the Italian economy and other mature economies, such as manufacturing, creativity, sustainability, open innovation, digital transformation, entrepreneurship in small and medium-sized enterprises, family business, networks, alliances and territorial ecosystems, innovative value proposals and circular business models, as well as to the management of specific businesses, such as food, fashion, furniture, industrial equipment, art, culture, tourism, design and luxury.

How broad is the scope of this journal?

Sinergie Italian Journal of Management aims to balance relevance with methodological rigour and encourages interpretation, reasoning and critical, context-aware discussion about phenomena and their managerial implications. Narrow discussions focussed only on highly specific sub-fields will be regarded as non-priority.

Which research approach does this journal welcome?

The journal is open to different research approaches and welcomes both conceptual and empirical contributions that employ a qualitative, quantitative or mixed methods research approach. It also accepts case

studies, provided the analysis is adequate. Review articles that move beyond description to propose critical reflection and sound theoretical contributions are also welcome.

Issues frequency and coverage

When is the journal published during the year and are special issues part of the editorial planning?

The journal is published every quarter. It welcomes both the submission of manuscripts to be published in its regular issues and of manuscripts to be published in special issues edited by guest editors. Special thematic issues have always been a prominent feature of Sinergie Italian Journal of Management. Currently, the Editors are encouraging the development of special issues on relevant management themes that fit the journal's scope.

Principles and vision

What principles drive the conduct of this journal?

A few fundamental principles drive the conduct of Sinergie Italian Journal of Management:

- **Relevance:** The journal values the usefulness of research to improving management practice and to addressing business challenges and socially relevant issues.
- **Originality:** The journal encourages creativity, curiosity and interdisciplinary contamination in an effort to develop fresh, sometimes out-of-the-box, ways of conceptualising management-related phenomena.
- **Collaboration:** The journal fosters collaboration and networking with the different components of the national and international scientific community by considering their 'voices' and by being open to proposals of partnership with other journals.
- **Respect:** The journal promotes constructive, respectful dialogue among authors, staff and readers and recognises the dignity of individuals and the validity of their opinions.

What vision has inspired the development of this journal?

Connections between research, ethics, creative thinking and managerial action are the foundational premises on which to build a future based on the common good.

Peer review procedures

How is journal content quality assured?

Sinergie is a double-blind reviewed journal.

Only original content is published, following evaluation procedures. The journal's editor-in-chief and co-editor are in charge of evaluating the papers and supervising the peer-review process.

Each paper is submitted for evaluation to two anonymous independent reviewers, who are academics chosen among experts in the field.

Editorials and explicitly invited contributions are not subjected to peer review.

The editors reserve the right to require changes to a manuscript, including to its length, as a condition of acceptance. The editors reserve the right, notwithstanding acceptance, not to publish the paper if for any reason such publication would, in the reasonable judgement of the editors, result in legal liability or violation of the journal's ethical practices. If the editors decide not to publish a paper, the author or authors are free to submit it to any other journal of any publisher.

The peer-review process can lead to:

- acceptance of the paper as it is
- acceptance with minor proposals for improvements
- acceptance subject to substantial modifications
- revise and resubmit
- rejection.

The review forms will be sent back to the corresponding author, who must return the paper within a specified time frame after revising it according to the reviewers' comments. In case of substantial modifications and of "revise and resubmit", the manuscript is sent again to reviewers for further evaluation.

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Reviewers apply the following criteria when assessing submissions:

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