

Impact of business model objectives on marketing innovation activities: a comparison between manufacturing and service firms

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To cite this article: Molina-Castillo, F.-J., Meroño-Cerdan, A.-L. and López-Nicolás, C. (2020), "Impact of business model objectives on marketing innovation activities: A comparison between manufacturing and service firms", European Journal of Innovation Management, Vol. 23 No. 1, pp. 177-195. <https://doi.org/10.1108/EJIM-12-2018-0259>

**IMPACT OF BUSINESS MODEL OBJECTIVES ON MARKETING INNOVATION
ACTIVITIES: A COMPARISON BETWEEN MANUFACTURING AND SERVICE FIRMS**

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Abstract

Purpose: The objective of this research is to analyze the differences and similarities that arise between manufacturing and service firms with regard to the impact of business model objectives on marketing innovation activities.

Design/methodology/approach: This study focuses on business model objectives and marketing innovations activities. As described by Oslo Manual, marketing innovations involve changes in product design, promotion, placement and pricing. Relationships between business model objectives and marketing innovations are based on the analysis of 9525 firms, 5488 of which are manufacturing companies and 4037 of which are service companies.

Findings: Findings reveal distinctive results in the adoption of marketing innovation, depending on the business model objectives being pursued and the type of companies (manufacture or service) considered.

Research limitations/implications: This research goes further than prior studies by identifying more precisely the particularities that differentiate the manufacturing and service sectors.

Practical implications: Firm's age and size are not significant restrictions to introduce new marketing innovations in manufacturing or service sectors. In contrast, the business model objective to enter a new market is a significant driver of marketing innovations in most cases.

Originality/value: The focus on business model objectives and their impact on marketing innovations is novel. In addition, this study focuses on a large-scale sample that allows comparing the differences between manufacturing and service companies.

Keywords: business model, marketing innovations, manufacturing firms, service firms.

1. Introduction

The number of studies on business models (DaSilva and Trkman, 2014, Foss and Saebi, 2018) has increased significantly in the last decade. Both academics and managers agree that further research is needed to obtain an accurate definition of (Clauss, 2017) and measurement approach to (Spieth and Schneider, 2016) business models (Massa et al., 2017) in order to continue exploring their nexus with other related variables inside the firm (Cortimiglia et al., 2016). A business model is frequently considered to be the underlying logic of a company as well as the blueprint for how it transforms resources and communicates value to customers (Teece, 2010). However, in the extensive review conducted by Foss and Saebi (2018), the authors suggest that is not clear if any firm has a business model or whether a business model is the outcome of a specific design exercise. In a simple intuitive definition, a business model describes an organization and how that organization functions in achieving its goals (Massa et al., 2017). Amit and Zott (2001) insinuate that business models are structural templates of how firms run and develop their business. Similarly, as Clauss (2017) summarized, business models are configurations that integrate particular dimensions. In this line, Foss and Saebi (2018), summarize a business model as a bundle of specific activities conducted to satisfy the need of the market, along with the specifications of partners. Our approach is consistent to value proposition business model dimension as defined by Clauss (2017). With the term “business model objective” we are referring to the general business objective that a firm pursues when developing or configuring its business model.

Business model objectives are considered especially critical for the company (Chamberlin et al., 2010). Firms can have diverse business model objectives based on the type of firm (Wang et al., 2015), competitors’ strategies (Leiponen and Helfat, 2010), environment (Stanko et al., 2015) or the size of the organization (Guan et al., 2009). The goal of our research is to explore and test how business model objectives connect with marketing innovations.

Previous studies have analyzed how businesses successfully develop technological innovations (Mohnen and Hall, 2013), but there is a paucity of research that analyzes non-technological innovations (Ajayi and Morton, 2015), also referred to as marketing innovations. The Oslo Manual (OECD, 2005) defines a marketing innovation as the implementation of a new marketing method, including changes in product design (Mugge and Dahl, 2013), product promotion (Pauwels et al., 2004), product placement (Zimmermann et al., 2016) or the price of goods and services (Soman and Gourville, 2001).

There is some evidence that business model objectives can be closely related to marketing innovations (Simmons et al. 2013) but some gaps still remain. Prior research in this area has found that marketing innovations are determined by organizational memory and learning capabilities (Camisón and Villar-López, 2011) and help firms to obtain competitive advantage (Naidoo, 2010). Ajayi and Morton (2015) identified three factors that enable marketing innovations: customer relationship management, referral marketing and customer partnering. Similarly, some authors have also identified business model objectives such as partner collaboration (Doloreux et al., 2015) as a determinant of marketing innovation.

This study also makes an additional important contribution by analyzing differences between manufacturing and service organizations. Innovation is essential not only for manufacturing but also for service firms. Recent contributions in this field have stated that less attention has been paid to service firms in comparison to manufacturing firms (Biemans et al., 2016) and that innovation strategies might differ between those types of companies (Asikainen, 2015). The synthesis approach described by Coombs and Miles (2000), which addresses innovation in services, explains that research focusing on innovation in manufacturing should be combined with research on service organizations. An increasing number of companies are explicitly focusing on service innovation (Koelling et al., 2010) and may exhibit innovative behavior (Tether, 2005) different from that of manufacturing innovation. For example, R&D,

which is recognized as crucial to the success of innovation in manufacturing-based industries, could be relatively less important in service industries (Chamberlin et al. 2010). In contrast, firms in the service industry focus more on organizational innovation compared to firms in the manufacturing industry (Tether, 2005). Thus, these arguments suggest that the comparison between manufacturing and service companies should also be applied to the relationship between business model objectives and marketing innovation.

To further analyze this relationship, we developed a model to connect business model objectives (increase market share, target new customers, enter new markets) and different types of marketing innovations (product design, product promotion, product placement, product price) for manufacturing and service companies. This article is organized as follows. First, relevant literature on business model objectives, marketing innovations and differences between manufacturing and service companies is reviewed. Then, hypotheses for each of the marketing innovations are described. The third section explains the article's methodology and its procedure for collecting data from 9525 organizations. Next, data analysis is described, and the results are discussed. Finally, managerial implications of the findings are summarized as well as limitations and future research guidelines are presented.

2. Theoretical background

2.1. Business model objectives

The idea underlying business models was first proposed by Bellman et al. (1957) to describe the topic of a business game. After this initial contribution, the idea was not regularly cited until the late 1990s, when it was discussed following the dotcom crisis (Osterwalder and Pigneur, 2010). Since then, both academics and managers have agreed that a proper business model conceptualization (Massa et al. 2017) is essential to the survival of a firm (Velu, 2015). The most commonly recognized definition was proposed by Teece (2010), who described a business model as “the design or architecture of the value creation, delivery, and

capture mechanisms of a company". Although a business model has several components (Taran et al., 2015), our research will focus on business model objectives.

Literature on business models suggests that firms may have different objectives (Leiponen and Helfat, 2010, Yang and Hsiao, 2009) that they will try to achieve based on their resources and capabilities (Mezger, 2014). Firms need to carefully manage or implement their objectives (Damanpour, 2010) to achieve their goals. Any firm can pursue innovation for a variety of reasons and to achieve any number of different objectives (Guan et al. 2009). For example, business model objectives such as improving manufacturing flexibility encourage the firm to implement a process innovation (Leiponen and Helfat, 2010) to reduce delivery lead-time (Damanpour, 2010).

Recently, using content analysis, Clauss (2017) summarized (Table 1) the different types of value within a company (value creation, value proposition and value capture). Value creation describes how a company uses its resources to create value (Achtenhagen et al., 2013). Value proposition reflects the objectives a company might pursue (Morris et al., 2005). Value capture defines how value proposition is transformed into revenue or cost reduction (Baden-Fuller and Haefliger, 2013).

In this research, it is adopted the approach to value proposition suggested by Clauss (2017): Increase market share, target new customers and enter new markets. The value proposition dimension relates to the effective offering in the form of products and/or services for the customer but also includes target customer selection and segmentation as well as customer acquisition strategies (Ghezzi et al. 2015). Therefore, our approach to business model objectives is not related to the intra and inter-organizational processes that a firm carry out by using the resources and capabilities to create value (Achtenhagen et al. 2013). In line with this argumentation, this research does not analyze how a firm obtained revenues that cover cost or impact the final performance of the company (Johnson et al. 2008).

Insert Table 1 about here

Marketing paradigm has evolved over the last decades from a good-centered model to a service-centered paradigm. The service-domain logic (SDL) proposed by Vargo and Lush (2004) is predominant nowadays and compatible with our focus on business model theory. According to SDL (Vargo and Lush, 2004), customers can perceive and determine value in use, while firms can only make value propositions. We highlight the importance of value proposition as the core element of a firm's business model.

2.2. Marketing innovations

The divisions among definitions of marketing innovations can be debated (Mohnen and Hall, 2013), especially when firms tend to combine marketing innovations with product and process innovations as a mixed innovation strategy (Asikainen, 2015). Goods or services that have significantly improved functional characteristics compared to existing products are product innovations (Calantone et al. 2010). On the other hand, a design change in an existing product (Creusen and Schoormans, 2005) is a marketing innovation but cannot be classified as product innovation. If the company does not modify the functional characteristics or user characteristics of a product, then it is considered a non-technological innovation (Pires et al., 2008). If these functional or user characteristics are modified, then it is considered a technical innovation (Armbruster et al., 2008). However, many companies innovate with both their products and marketing simultaneously (Asikainen, 2015) because product innovations may be more successful if complemented by marketing innovations (Mohnen and Hall, 2013). The Oslo Manual (OECD, 2005) introduced a new typology of marketing innovations – also referred to as commercial innovations (non-technological innovations) – that are related to new marketing methods. These innovations can include changes in product design and packaging, in product promotion, in product placement, and in methods for pricing goods and services.

2.3. Innovation in manufacturing and service firms

Innovation is commonly discussed from different perspectives. Meta-analyses in the products (Calantone et al., 2010) and services domain (Storey et al., 2016) have confirmed this trend. A distinction exists between “service innovation”, defined as the development of new services associated to manufacturing products, and “innovation in services”, referred as innovations made by firms in the service sector (Un and Montoro, 2010; Gallouj and Djellal, 2010). Our focus is on the innovation made by companies in the service sector, in comparison to manufacturers. The methods in which service providers innovate (Maglio and Spohrer, 2013) differ in many respects from the ways in which manufacturing firms innovate (Cortimiglia et al. 2016, Wang, et al. 2015).

3. Hypotheses

Previous studies have observed that different firm objectives can be connected to each type of innovation (Leiponen and Helfat, 2010). However, the relationship between business model objectives and innovation decisions has been mainly discussed regarding technological innovation, and only limited research has been conducted on marketing innovations (Guan et al. 2009). Undoubtedly, marketing innovations (Stampfl, 2016) and technological innovations (Hu, 2014) have a close interrelationship, but there is still a need to explore the different antecedents of marketing innovations (Ajayi and Morton, 2015). Similarly, Damanpour (2010) suggests that different types of innovations respond to diverse business model objectives.

3.1. Impact of business model objectives on marketing innovation related to product design

Modifications to product design are expected to be driven by business model objectives (Camisón and Villar-López, 2011). Product design marketing innovations relate to changes in product form, packaging and appearance but do not alter the functional characteristics of the

product (Creusen and Schoormans, 2005). When a new product is launched into the market and communicated to customers, its technological features are presented along with its marketing innovation design (Mugge and Dahl, 2013). These activities allow firms to innovate in terms of product meanings or customer perception (Luchs et al., 2016).

There are significant differences between service and manufacturing industries with regard to innovation. The skills needed for innovation in services may be different to the skills required for innovating in manufacturing (Chesbrough, 2007). The aims of innovation and the reasons to innovate stem from different factors in services versus manufacturing companies (Asikainen, 2015). For example, spending on R&D has long been recognized as very important to the innovative success of firms in manufacturing-based industries. For Tata Motors to meet customers value proposition, the company had to reconfigure how car was designed (Johnson et al. 2008). In contrast, it is relatively less important to firms in service industries (Chamberlin et al. 2010). In comparison to manufacturers, service industry firms pay more attention to organizational innovations and less to product and/or process innovations (Tether, 2005). Service industry could be less motivated to service innovation strategies depending on the organizational activities in the organization (Koelling et al. 2010), and could have fewer alternatives in comparison to manufacturing companies (Van Cruysen and Hollanders, 2008). In addition, the distinction between product innovations and process innovations is blurring in most service companies making the product life cycle in services be reverse to the traditional life cycle for products (Gallouj and Savona, 2010). Often, marketing innovations in product design require clients' collaboration (Ajayi and Morton, 2015). In summary, there is evidence to support the idea that product design could be more closely driven by business model objectives in the case of manufacturing than service firms.

H1: The impact of business model objectives on marketing innovation related to product design will be more determinant for manufacturing firms than for service firms.

3.2. Impact of business model objectives on marketing innovation related to product promotion

Marketing innovations activities related to product promotion represent ways in which companies can attract potential or existing customers (OECD, 2005). Business models aiming to target and reach new customers usually entail changes in product promotion. Different actions related to product promotion, such as advertising strategies or preannouncement strategies (Lee and O'Connor, 2003), are linked to the advantages of being a pioneer in the market (Naidoo, 2010). Similarly, under conditions of high customer switching costs (Burnham et al., 2003), innovative product promotion activities may help to achieve a firm's objectives of targeting new customers (Matzler et al., 2015) or increasing its market share (Pauwels et al. 2004). A company's ability to introduce new marketing methods, especially innovations in product promotion, highlights its need to manage and change the way it interacts with its customers (Ajayi and Morton, 2015). Therefore, marketing innovations related to product promotion could be derived from business model objectives.

The role of product promotion to attract customers in services, in comparison to innovation in manufacturing companies, could also be different (Edvardsson et al., 2010). Differences are expected to arise when marketing innovations in manufacturing firms are compared with those in service firms. Asikainen (2015) finds that many firms in specific manufacturing industries (motor vehicles, other transport equipment and recycling, etc.) mainly focus on combining product and marketing methods in a strategy called active innovation marketing. In contrast, in financial services, that innovation strategy competes for the dominant position with another combination: process and organizational innovations (Campolongo et al. 2015). Based on this, we propose the following hypothesis:

H2: The impact of business model objectives on marketing innovation related to product promotion will be more determinant for manufacturing firms than for service firms.

3.3. Impact of business model objectives on marketing innovation related to product placement

A firm's survival in the market depends heavily on its ability to correctly place products in the market (Naidoo, 2010). The same technology commercialized in two different ways might lead to a different outcome (Chesbrough, 2010). Setting up appropriate business model objectives can be crucial to the firm's securing first mover advantage in the market in terms of product placement. As stated by Amit and Zott (2001) the business model is market-centric. For instance, Markides and Sosa (2013) study the importance of business models for entering new markets. As a result, we expect that new methods of product placement and sales channel will be influenced by business model objectives.

Recent literature illustrates how firms operating in different sectors (manufacturing and services) change their distribution channels motivated by diverse aims, such as targeting untapped customer segments (Hacklin et al., 2018) and identifying potential customers (Berends et al., 2016). There are other differences between manufacturing and service sectors. Marketing innovations in service companies are usually more oriented towards developing new distribution channels (Halpern, 2010). Another example is described by Bohnsack et al. (2014), suggesting that if the company move from a product-based to service-based business model will increase will help to arise new sales channels for sustainable technologies in the market. In a similar manner, tourism companies also combine marketing methods with other innovation strategies (Hoarau and Kline, 2014). We considered all these arguments and concluded that product placement will be more determinant for service companies in comparison to manufacturing companies.

H3: The impact of business model objectives on marketing innovation related to product placement will be more determinant for service firms than manufacturing firms.

3.4. Impact of business model objectives on marketing innovation related to product price

Business model objectives could also invite changes in marketing methods regarding product pricing. For a long time, price has been considered a key variable by signifying a high-quality product when it was launched into a new market (Brucks et al., 2000). Several marketing innovation activities related to price, such as price promotions, help firms to achieve their business goals (Pauwels et al. 2004). For example, price bundling affects the likelihood to attract new customers (Soman and Gourville, 2001). Some authors have suggested how marketing innovation in price help firms to achieve their business model objectives in terms of market share (Pauwels et al. 2004) or entering new markets (Stankevicius, 2015). Thus, a firm aiming to increase its market share or attract new customers may be interested in developing innovations in pricing.

The differences between manufacturing and service sectors are also expected. By comparing three business models widely used by mobile network providers, Shi et al. (2016) conclude that optimal pricing strategies may change in the context of business models since changes in price influence the number of post-paid users in the mobile network service. Modifications in pricing methods can increase the level of uncertainty and risk the firm has to face since customers may perceive the new pricing model as less attractive than the original one (Schneckenberg et al., 2017). The number of alternatives a firm may have to determine appropriate pricing methods and strategies depends on the industry under study, being especially relevant for services (Sainio and Marjakoski, 2009). For example, new pricing methods are seen as the most significant tool for attracting new markets in the airline sector (Halpern, 2010) and for targeting new customers. Based on the previous discussion, we posit:

H4: The impact of business model objectives on marketing innovation related to product price will be more determinant for service firms than for manufacturing firms.

The theoretical model to be tested is presented in Figure 1.

Insert Figure 1 about here

4. Methodology

Our dataset comes from the Community Innovation Survey (CIS). The CIS questionnaire draws on a long tradition of innovation research and is extensively used in most European countries, especially in the UK, France, Spain, and Italy (e.g. Evangelista and Vezzani, 2010; Ganter and Hecker, 2013; Hervás-Oliver, et al. 2015). The survey analyzes the structure of the innovation process, companies' technological strategies, and the ability to innovate. This survey is conducted by the Spanish National Statistics Institute. Questionnaires are sent via mail to a selected and representative sample of companies addressing innovation activity. Data from a total of 9525 Spanish companies, including both manufacturing (57.6%) and service (42.4%) sectors were recorded in the database. The average age is twenty-six years (standard deviation of 19.5). Regarding the size, 75.8% of companies have less than 200 employees while 24.2% employ at least 200 employees. The final sample represents a response rate of 91.8% of the total targeted firms largely due to the mandatory nature of the survey. It is true that inside the CIS questionnaire some potential selection bias may occur. That will be the case of working with a sub-sample of firms that could not be representative of the population. In our study, this is not the case because all the answers come from the companies included in the CIS sample. Thus, although our study used secondary already collected data, do not suffer the threat of studies with primary data and potential common method bias as stated by Podsakoff et al. (2003).

The measures used in this research (appendix), are of two types. Each marketing innovation (product design, promotion, placement and price) was measured with a Yes/No question (0=no, 1=yes) according to the Oslo Manual (OECD, 2005). We are measuring innovation and not innovativeness (that has been extensively reviewed by several authors (Calantone et al. 2010; Lee and O'Connor, 2003). Therefore, we focus on whether the firms were

introducing new marketing innovations by using a dichotomous response with the measures of the Oslo Manual. Business model objectives (increase market share, target new segments of customers, enter a new market), were assessed with a single-item Likert scale (from 1 to 4), also following the recommendations of the Oslo Manual (OECD, 2005). The items included by Clauss (2017) to measure the items of “new markets” were adapted from Jansen et al. (2006), “new customers” were adapted from Reinartz et al. (2004) and “new channels” were adapted from Osterwalder and Pigneur (2010).

This study analyses the impact of different dimensions of business model objectives in several marketing innovations. To test the relationships, four logit regressions were conducted (one for each type of marketing innovation: product design, product promotion, product placement and product price). Each of the models includes two control variables (age and size). Due to the nature of the dependent variable (dichotomous), we run a set of binary logit regressions for each marketing innovation variable in our study (product design, product promotion, product placement and product price). A significant and positive coefficient in a logit regression implies that the independent variable is an adoption facilitator. Thus, the parameter of the regression in a logit model is not the marginal effect of the independent variable (Green, 2007). In contrast, the Odds-ratio ($\text{Exp}(\beta)$) is used to analyze the change in the probability of adoption to a unit increase in the independent variable. Several overall adjustment indexes are used to analyze the Goodness of fit: 1.) The likelihood ratio (LR) test, analyze the explanatory power of the independent variables. 2.) The Hosmer-Lemeshow test compares the proposed model with another mode that fitted expected values to the actual values. 3.) the Nagelkerke's pseudo- R^2 analyze the proportion of data variation explained (Nagelkerke, 1991). The discriminating power of the logit models was calculated also by the observation prediction table, the rates of correct prediction and random guess computed.

Consider that we did not expect a bias due to our large dataset. We have used the Maximum likelihood Estimation (MLE) that provides robust and consistent estimations. Robustness refers to the possibility that estimations will vary if an outlier is present in the data. Consistent estimations refer to the properties that estimations will not vary if sample size increases. According to the experiment conducted by Rousseeuw and Christmann (2003), using a procedure called the “hidden logistic model”, over-sampling data does not affect estimations. In other words, the values of the logistic regression do not depend on the sample size. Similarly, Carroll and Pederson (1990) also concluded in their research that robust/resistant estimates are much more biased in a small sample than the usual logistic estimate. Finally, problems derived from multicollinearity have also been checked through a correlation analysis finding no problem since any correlation is bigger than the 0.7 threshold.

5. Results

Logistic regressions (Tables 2 to 5) confirm most of the relationships proposed in the research model. The significant likelihood ratio (LR) means a robust relationship between independent variables and dependent variables. Based on the Hosmer-Lemeshow test, each marketing innovation is not significantly different from a perfect model, and they can correctly classify observations into their respective groups (Patrick and Tam, 1997). Nagelkerke's pseudo-R² ranges from 2.0% to 7.6% of the data variation in each marketing innovation variable for each sector. Finally, the lowest overall model prediction accuracy is 55.2% in service firms (marketing innovation: product price) and the highest is 71.2% in manufacturing firms (marketing innovation: product design). The size of the firm was a significant predictor only for marketing innovation based on product placement. Age of the firm was found to have a positive influence on the marketing innovation based on product design and a negative influence on product price. Additionally, we found differences (in terms of significance) for the independent variables on the dependent variables and for each type of marketing innovation. We hypothesized in H1 the impact of business model objectives in marketing innovations related to product design will be more relevant for manufacturing than for service firms. We

only found a significant relationship for the objective of entering new markets in service firms ($\beta=.307$; $\text{Exp}(\beta)=1.362$; $p<0.01$) and not in manufacturing firms (Table 2). This means that our hypothesis H1 was not supported.

Insert Table 2 about here

Regarding hypothesis H2, the impact of business model objectives in marketing innovations related to product promotion will be more relevant for manufacturing than for service firms, we found a different result. In this case, the objective of entering new markets was found to be significant for both manufacturing firms ($\beta=.214$; $\text{Exp}(\beta)=1.241$; $p<0.01$) and for service firms ($\beta=.274$; $\text{Exp}(\beta)=1.315$; $p<0.01$) (Table 3). Moreover, we also found support for targeting new customers as an antecedent of marketing innovation in product promotion for manufacturing firms ($\beta=.162$; $\text{Exp}(\beta)=1.177$; $p<0.05$). This means that H2 was fully supported.

Insert Table 3 about here

The results obtained for the relationships between business model objectives and marketing innovation based on product placement were the most satisfactory. Each of the business model objectives considered showed a significant relationship for service firms (increase market share: $\beta=.184$; $\text{Exp}(\beta)=1.202$; $p<0.01$; target new customers: $\beta=.183$; $\text{Exp}(\beta)=1.201$; $p<0.05$; enter new markets: $\beta=.215$; $\text{Exp}(\beta)=1.242$; $p<0.01$) in contrast to manufacturing companies where only target new customers ($\beta=.192$; $\text{Exp}(\beta)=1.211$; $p<0.05$) and enter new markets ($\beta=.411$; $\text{Exp}(\beta)=1.508$; $p<0.01$) were significant (Table 4). In turn, this means that hypothesis H3 was fully supported.

Insert Table 4 about here

Finally, in H4, we hypothesized that the impact of business model objectives in marketing innovations related to product price will be more relevant for service than for manufacturing firms. In this case, we found that the objective of entering new markets was determinant for manufacturing firms ($\beta=.217$; $\text{Exp}(\beta)=1.243$; $p<0.01$), whereas the objective of increasing market share was most relevant for service firms ($\beta=.302$; $\text{Exp}(\beta)=1.355$; $p<0.01$) (Table 5). As a result, we can partially confirm hypothesis H4 for our data.

Insert Table 5 about here

In the following section, we will discuss the results and implications for the different type of companies considered, manufacturing and service firms.

6. Discussion

The purpose of this study was to analyze whether business model objectives have an impact on marketing innovations. These findings could help firms to become more competitive in the market and to visualize new opportunities (OECD, 2005). The results obtained from this study have led to interesting conclusions related to the impact of business model objectives on the marketing innovations used by companies. Moreover, this research goes further than prior studies by identifying more precisely the particularities that differentiate the manufacturing (Cortimiglia et al. 2016, Wang et al. 2015) and service sectors (Maglio and Spohrer, 2013). The findings reveal distinctive results in the adoption of marketing innovation, depending on the business model objectives being pursued (Table 6).

Insert Table 6 about here

Product design innovation is commonly implemented by manufacturers. Service providers are only driven by entering new markets business model objectives, but in manufacturing companies, no business model objective justifies the adoption of this marketing innovation.

That implies that product design innovation may be driven by business model objectives other than those studied here, like altering product meanings or customer perceptions (Luchs et al., 2016). Results suggest that, in service firms, marketing innovations related to product design are driven by the business model objective of entering new markets. That contrasts with earlier evidence which described how a hospital's design decisions were not driven by opening up new markets but rather by increasing value for patients and managers (Lehoux et al., 2014). Our findings confirm the idea that in comparison to manufacturers, service firms pursue different aims of product design innovation (Asikainen, 2015), have different motivations and alternatives (Koelling et al., 2010) and may require clients' collaboration more often (Ajayi and Morton, 2015). Age of the firm is a significant determinant of product design for manufacturing and service companies. In both industries, age positively affects the use of marketing innovation that is based on product design. Conversely, size is not significant for introducing changes in product design. In their study on marketing innovations in agribusinesses, Geldes and Felzenstein (2013) found no significant influence of firm size on new packaging methods but did find a positive impact of number of employees and product design innovation. In contrast to their study, our analysis does not distinguish between new packaging and new design as two separate marketing innovations, and our findings suggest that firm size has no influence on product design innovation.

Marketing innovation based on product promotion is found to be explained by the business model objectives of accessing new markets, as well as of targeting new customers in manufacturing companies. Consistently, many firms in service or manufacturing industries are adapting themselves to the sharing economy by attracting new customers and introducing new methods for promoting their goods (Matzler et al., 2015). While innovative product promotion activities may help to increase a firm's market share (Pauwels et al. 2004), our findings show no significance in manufacturers nor in service providers. Nevertheless, the objective of entering new markets is the only facilitator for the service sector. Findings support the idea that, in comparison to manufacturers, the role of product

promotion to attract customers in services could be different (Edvardsson et al., 2010). In manufacturing and service firms, size does not impact marketing innovation based on product promotion or product design. In services, firm age does not have a significant impact. Those are unexpected results as contingency theorists highlight the importance of firm's size, age and sector for management.

Meanwhile, in the service sector, the implementation of marketing innovation based on product placement is driven by increase market share, target new customers and enter new markets. On the other hand, for the manufacturing sector, the objective of increasing market share was not significant, and only the other two objectives – targeting new customers and entering new markets – maintained their explanatory significance. Both manufacturers and service providers introduce new methods to distribute their products and services as a way to achieve multiple business model objectives. Berends et al. (2016) and Hacklin et al. (2018) exemplified how firms in different sectors can make changes in distribution channels to identify potential customers to target previously untapped customer segments. The introduction of new distribution systems has been stated as the target of incremental innovation strategies (Stankevice, 2015), important issues for both manufacturers and service providers as well. Size has a significant positive effect on marketing innovations based on product placement in both samples. That type of marketing innovation sometimes requires a partnership with distributors (Berend et al., 2016) which can be achieved when the firm grows and becomes a bit larger.

Finally, marketing innovation based on product price is explained differently depending on the sector. To a greater extent than service providers, manufacturers implement new pricing methods based on the objective of entering new markets, while service providers implement new pricing methods based on the objective of increasing market share. Changes in pricing models increase the level of uncertainty and risk the firm has to face as the new method may be less attractive for customers in comparison to the original one (Schneckenberg et al.,

2017). In prior research (Stankevice, 2015), new pricing methods have been seen as targets of innovation strategies aimed at entering new markets. Therefore, innovation in pricing may be better driven by entering new markets, as evidenced in our manufacturing sample. Service firms aiming at increasing market share should invest in explaining current customers about the advantages of the new pricing method in order to reduce associated risks (Schneckenberg et al., 2017). A deeper analysis of the three business model objectives provides interesting implications for managers.

In summary, entering new markets is the most common and influential driver towards marketing innovations. Specifically, that objective leads to new methods for product design, product promotion and product distribution in service firms and to innovations in product promotion, product distribution and product pricing in manufacturing companies. An interesting result has been found for increasing market share objective. It has a significant influence on new product placement and pricing in service providers, but no impact on any type of marketing innovations in manufacturing firms, meaning that the objective of increasing market share may be associated with different kinds of innovation other than marketing innovations. In line with this, literature suggests that companies suffering a significant loss of market share usually make changes towards open models for innovation (Chesbrough, 2007), reformulation of their primary business model (Hackling et al., 2018) or product and process innovations (Yin and Zuscovitch, 1998). Still, others prefer to focus less on increasing market share and switch to entering new markets (Teece, 2018). Further research is needed in that field.

7. Academic and managerial implications

The paper addresses an interesting gap in the research field between business models and innovation. Results presented here could contribute to academics and practitioners, inspire them and foster further research in this direction. Our findings confirm the idea that in

comparison to manufacturers, service firms pursue different aims of innovation (Asikainen, 2015) and have different motivations and alternatives (Koelling et al., 2010).

This study gives further information on the types of marketing innovations that firms pursue. Business model literature suggests that different types of firms may have different primary objectives (Wang and Chien, 2006, Yang and Hsiao, 2009). The results of our study provide findings regarding to which business model objectives firms pursue and which of them impact marketing innovations. The desire of entering a new market is the main objective for firms that develop marketing innovations in product design, product promotion, product placement and product price. Findings suggest that it is not the only objective firms aim to attain. Instead, results suggest that specific marketing innovations may be driven by diverse business model objectives and even by other than those studied here, like altering product meanings or customer perceptions (Luchs et al., 2016). Academics are encouraged to consider multiple business model objectives in order to further study their influence on driving certain marketing innovations.

Prior research on marketing innovations does not treat the four types studied here and/or focus on other sectors (namely, Geldes and Felzensztein, 2013). More importantly, our study makes an academic contribution by considering the cause-effect link between business model objectives and marketing innovations. To the best of our knowledge, this is the first attempt in studying the influence of various business model objectives on four types of marketing innovation and comparing service providers and manufacturers. An implication of that is that our results contribute to researchers and practitioners by showing that implementing marketing innovations based on new product placement methods, for instance, is driven by targeting new customers and entering new markets in manufacturing companies and by increasing market share in service companies too.

Our results contribute to the academic and managerial debate about the influence of firm size and age on introducing diverse marketing innovations. It is frequently accepted that mature firms frequently obtain a benefit when entering a new market and/or obtaining financing for innovative projects. Several innovations, particularly process innovations, are the consequences of continuous improvement (Pires et al. 2008). However, our results show a negative impact of age on the adoption of product design or product price. This is consistent with prior research that found that introducing new pricing methods is especially significant for startups (Schneckenberg et al., 2017). We encourage younger firms to develop those marketing innovations as they are favoured.

In addition, age is nonsignificant for the adoption of marketing innovations based on product promotion. For managers, these findings imply that firm's age and size are not significant restrictions to introduce new methods for promoting products or services. Size was not found to have an impact, except for introducing new product placement methods. That type of marketing innovation sometimes requires a partnership with distributors (Berend et al., 2016) which can be achieved when the firm grows and becomes a bit larger. Our results suggest, however, that firm's size has no impact on the adoption of product design innovations and new product promotion methods. A managerial implication is that being a small and medium enterprise is not a limitation to innovate in new marketing methods. That implies that managers at companies of any size can promote and enhance marketing innovations. Consistent with recent literature on business model and innovation, firms pursue different objectives or 'I want tos' (Heikkila et al., 2018), each of which can be achieved by walking on different alternative paths (Bouwman et al. 2018). Similarly, results presented here urge managers in manufacturing and services sectors to make explicit objectives and alternative paths towards marketing innovations. Innovation in services is found to be significantly divergent to innovation in manufacturing. Not only are business model objectives different but also the alternative marketing innovations differ between manufacturers and service providers.

8. Limitations and future research

We also acknowledge some limitation in this study. The use of an already collected data set obtained from an official institution has a main advantage: the veracity of data. However, it also restricts the number of variables that can be introduced in the analysis. This limitation notwithstanding, this survey suits our aim of studying business model objectives and their impact on marketing innovations. Future research could adopt a more detailed quantitative approach that includes new variables.

Our research focuses only in one of the sub-dimensions of business models as stated by Claus (2017), value proposition, that considers the customer/markets objectives pursued by an organization when defining the business model. But contributions in the literature have suggested that other main dimensions of business model, value creation and value capture, could be connected to marketing innovation activities. For example, business models have also proven to be very important when analyzing the influence of the supply chain on the innovation process (Zimmermann et al. 2016). In some circumstances, collaboration with partners is required to implement the marketing innovations described in the business model (Velu, 2015). Such is the case with the wine industry, for instance, where marketing innovators make the most intensive use of collaborators, namely suppliers, consultants and research institutes (Doloreux et al. 2015). Also, marketing innovations by individual companies in financial services sector have also traditionally been framed within a national regulatory framework designed to sustain trust in the wider financial system and protect retail investors (Wood and Wojcik, 2010). Companies working in other sectors may more easily implement marketing innovations alone, without needing to collaborate with other partners. In a similar manner, business models could be oriented to identifying the customer, engaging with meeting needs, delivering satisfaction, and monetizing value (Baden-Fuller and Haefliger, 2013).

As many companies combine marketing innovations with other types of innovations (Asikainen, 2015), further studies are needed to understand the antecedents and effects of combining diverse innovations. For example, as we discussed earlier, it will be interesting to combine the outcomes of business model objectives not only as related to marketing innovations that are considered non-technological innovations (Pires et al. 2008) but also as related to product innovations (Armbruster et al. 2008). Our research explores differences between product and service companies, but it might be interesting to consider variations in our analysis among countries or types of firms, such as family versus non-family firms (De Massis et al., 2015). It will also be advisable to explore performance or competitive advantage (Naidoo, 2010) as an outcome of all these objectives and methods (Wang and Chien, 2006).

Appendix

Questionnaire:

Business model objectives: Likert scale (1 to 4)

- Increase market share.
- Target new customers.
- Enter new markets.

Marketing innovation: (Yes/No)

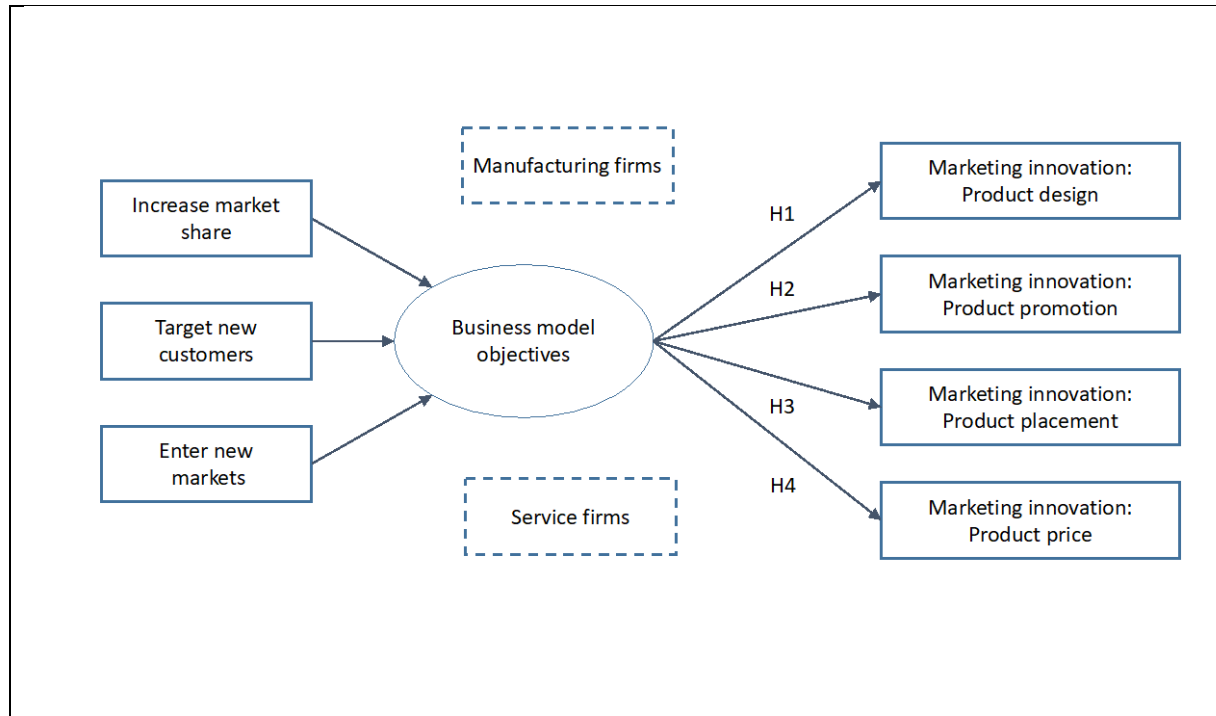
- My firm has introduced new marketing methods in product design, such as changes in the packaging of products.
- My firm has introduced new marketing methods in product promotion that involve the use of new concepts to promote the firm's goods and services.
- My firm has introduced new marketing methods in product placement to introduce new sales channels.
- My firm has introduced new marketing methods in pricing that involve the use of new pricing strategies.

Control variables

- Age
- Size

Figures

Figure 1. Research model



Tables

Table 1. Business model objectives: Value creation, value proposition, value capture

Value creation	Value proposition	Value capture
<ul style="list-style-type: none"> • New capabilities • New technologies/equipment • New processes and structures • New partnerships 	<ul style="list-style-type: none"> • New offerings • New customer segments/markets • New channels • New customer relationships 	<ul style="list-style-type: none"> • New revenue models • New cost structures

Clauss (2017)

Table 2. Impact of business model objectives on product design

	Marketing innovation: product design					
	Manufacture			Service		
	β	Exp(β)	Sig.	β	Exp(β)	Sig.
Constant	-.455	.635		-.130	.878	
Age	.129	1.138	**	.139	1.150	**
Size	.004	.996		.023	.977	
Business model objectives						
Increase market share	.063	1.065		.076	1.081	
Target new customers	.061	1.061		.078	1.083	
Enter new Markets	.065	1.067		.307	1.362	***
Chi-squared		23.514	***		41.90	***
Likelihood ratio		1957.63			1297.19	
Hosmer-Lemeshow		1.706			10.219	
R2 Nagelkerke		2.1%			5.5%	
% correct model		71.1%			58.7%	
Significance levels: ***p < 0.01 **p < 0.05						

Table 3. Impact of business model objectives on product promotion

	Marketing innovations: product promotion					
	Manufacture			Service		
	β	Exp(β)	Sig.	β	Exp(β)	Sig.
Constant	-1.412	.244	***	-1.635	.195	***
Age	.056	1.057		.053	1.054	
Size	.089	.915		.086	.917	
Business model objectives						
Increase market Share	.087	1.091		-.041	.957	
Target new customers	.162	1.177	**	.054	1.056	
Enter new Markets	.214	1.241	***	.274	1.315	***
Chi-squared		45.370	***		29.846	***
likelihood ratio		2242.15			1218.80	
Hosmer-Lemeshow		6.931			8.967	
R2 Nagelkerke		3.5%			4.1%	
% correct model		56.7%			66.8%	
Significance levels: ***p < 0.01 **p < 0.05						

Table 4. Impact of business model objectives on product placement

	Marketing innovations: product placement					
	Manufacture			Service		
	β	Exp(β)	Sig.	β	Exp(β)	Sig.
Constant	-2.184	.113	***	-2.297	.101	***
Age	-.044	.957		-.048	.953	
Size	.144	.866	***	.908	2.479	**
Business model objectives						
Increase market Share	.081	1.082		.184	1.202	***
Target new customers	.192	1.211	**	.183	1.201	**
Enter new Markets	.411	1.508	***	.215	1.242	***
Chi-squared		96.068	***		38.771	***
Likelihood ratio		2136.82			1313.92	
Hosmer-Lemeshow		5.568			3.213	
R2 Nagelkerke		7.5%			5.3%	
% correct model		61.7%			58.6%	
Significance levels: ***p < 0.01 **p < 0.05						

Table 5. Impact of business model objectives on product price

	Marketing innovations: product price					
	Manufacture			Service		
	β	Exp(β)	Sig.	β	Exp(β)	Sig.
Constant	-1.188	.305	***	-1.220	.295	***
Age	-.147	.863	**	-.154	.857	**
Size	.149	.862		.136	.873	
Business model objectives						
Increase market Share	.037	1.038		.302	1.355	***
Target new customers	.115	1.122		.051	1.055	
Enter new Markets	.217	1.243	***	-.022	.978	
Chi-squared		30.843	***		15.212	***
Likelihood ratio		2101.81			1333.77	
Hosmer-Lemeshow		14.201			2.688	
R2 Nagelkerke		2.5%			2.0%	
% correct model		65.2%			55.3%	
Significance levels: ***p < 0.01 **p < 0.05						

Table 6. Summary of findings

	Manufacturing firms	Service firms	Hypotheses
Marketing innovation: product design		Enter new markets	H1. Not supported
Marketing innovation: product promotion	Target new customers Enter new markets	Enter new markets	H2. Fully supported
Marketing innovation: product placement	Target new customers Enter new markets	Increase market share Target new customers Enter new markets	H3. Fully supported
Marketing innovation: product price	Enter new markets	Increase market share	H4. Partially supported

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