Carmela Peñalba-Aguirrezabalaga

MARKETING-SPECIFIC INTELLECTUAL CAPITAL: CONCEPTUALISATION, MEASUREMENT AND PERFORMANCE

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Abstract

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The objective of this study is to progress in the study of intellectual capital (IC) in specific contexts to provide managers with more tailored recommendations regarding the management of knowledge resources under their influence. Taking the marketing and sales function as a reference, a novel measurement scale was developed for this setting; thus, the concept of 'marketing-specific IC' was coined. Following the traditional three-component approach to IC, the knowledge resources that reside in the people, structures and relationships of the marketing and sales department were identified. Each category was further broken down into simpler sub-categories depending on the specific knowledge objects that marketing employees need to cope with to succeed in their job or on the more specific 'knowledge containers' that can be found within marketing structures and relationships. Such a measurement scale is useful both for managerial assessment purposes and for academic research aimed at analysing the relationship between marketing-specific IC and different types of marketing-related performance. In this regard, this research problematises previous approaches to measurement model specification and contends that IC is a purely conceptual artefact whose categories and sub-categories emerge as a combination of different knowledge bits grouped following a particular classification criterion that may vary according to the theoretical lenses of the researcher. Thus, a composite measurement model is applicable. The new scale was validated through a representative survey conducted in Spanish companies with over 100 employees. Three research models were then tested to explain the relationships between each broad category of marketing-specific IC (i.e. human capital, structural capital and relational capital) and different types of marketing-related performance (i.e. customer experience, market performance, marketing innovation performance and product/service innovation performance). This study contributes to the IC literature by providing a comprehensive understanding of contextuality as a knowledge-related quality that must be considered for the management and assessment of IC. Additionally, this study contributes to the general marketing literature by categorising marketing-specific knowledge resources and showing their role in the promotion of different types of marketing outcomes. Finally, the study provides marketing and sales managers with practical recommendations about the marketing-specific knowledge resources to be deployed to produce better marketing results.

Keywords: dissertation, intellectual capital, marketing, scale development, customer experience, innovation

Resumen

Carmela Peñalba-Aguirrezabalaga
Capital intelectual específico de marketing: Conceptualización, medición e impacto en el rendimiento
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El objetivo de esta tesis es avanzar en el estudio del capital intelectual (CI) en contextos específicos para proporcionar recomendaciones más adaptadas a los directivos de cara a la gestión de los recursos de conocimiento bajo su influencia. Tomando como referencia la función de marketing y ventas, desarrollamos una escala de medición novedosa para este contexto e ideamos el concepto de 'CI específico de marketing'. Siguiendo la clasificación tradicional del CI en tres componentes, identificamos los recursos de conocimiento que residen en las personas, estructuras y relaciones del departamento de marketing y ventas. A continuación, cada una de estas categorías se subdividió en subcategorías más simples, en función de los distintos objetos de conocimiento con los que los especialistas en marketing deben lidiar a la hora de realizar su trabajo y/o los 'contenedores de conocimiento' más específicos que se pueden encontrar dentro de las estructuras y relaciones del departamento de marketing y ventas. Dicha escala de medición es útil tanto para fines de evaluación gerencial (es decir, para diagnosticar los recursos de conocimiento de la función de marketing y ventas) como para la investigación académica dirigida a analizar la relación entre el CI específico de marketing y los diferentes tipos de desempeño de dicho ámbito. En este sentido, nuestra investigación problematiza los enfoques previamente utilizados a la hora de especificar el modelo de medida y sostiene que el CI es un artefacto puramente conceptual cuyas categorías y subcategorías emergen como una combinación de diferentes bits de conocimiento que se agrupan siguiendo un determinado criterio de clasificación, que puede variar según los lentes teóricos del investigador. Por lo tanto, debe aplicarse un modelo de medición compuesto. La nueva escala fue validada mediante una encuesta representativa en empresas españolas de más de 100 empleados. Con los datos recopilados se probaron tres modelos de investigación con el objetivo de explicar las relaciones entre cada categoría amplia de CI específico de marketing (es decir, capital humano, capital estructural y capital relacional) y diferentes tipos de desempeño relacionado con el marketing (experiencia del cliente, desempeño en innovación de marketing y desempeño en innovación de productos y/o servicios). Esta tesis contribuye a la literatura sobre CI proporcionando una comprensión integral de la 'contextualidad' como cualidad relacionada con el conocimiento que debe ser considerada para la gestión y evaluación del CI. La tesis también contribuye a la literatura general de marketing al identificar y clasificar los recursos de conocimiento específicos del área y al mostrar su papel en la promoción de diferentes tipos de resultados de marketing. Finalmente, se proporcionan recomendaciones útiles a los directivos de marketing y ventas sobre qué recursos de

conocimiento específicos de marketing se podrían implementar para producir mejores resultados de marketing.

Palabras clave: disertación, capital intelectual, marketing, desarrollo de escala, experiencia del cliente, innovación.

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List of publications

This dissertation is composed of the following publications. The rights have been granted by the publishers to include the papers in the dissertation.

I. Peñalba-Aguirrezabalaga, C., Sáenz, J., and Ritala, P. (2020). Marketing-specific intellectual capital: Conceptualization, scale development and empirical illustration. *Journal of Intellectual Capital*, 21(6), pp. 947–984.

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IV. Peñalba-Aguirrezabalaga, C., Ritala, P., and Sáenz, J. (2021). Putting marketing knowledge to use: Marketing-specific relational capital and product/service innovation performance. *Journal of Business and Industrial Marketing*, doi: 10.1108/JBIM-07-2020-0369.

Author's contribution

The author's contribution to each of the abovementioned publications is explained below.

Publication 1: 'Marketing-specific intellectual capital: Conceptualization, scale development and empirical illustration'.

This publication was a joint venture in which the first author was the only one responsible for data collection. In addition, the first author made a significant contribution to the literature review and structuring of the paper, and organised and led the writing process and revision of the manuscript during the journal review phase. Scale development, data analysis, interpretation of the results and discussion of the study were conducted in collaboration with the co-authors.

Publication 2: 'Putting knowledge to work: The combined role of marketing and sales employees' knowledge and motivation to produce superior customer experience'.

This publication was a joint venture in which the main author was the only one responsible for data collection. In addition, the main author made a significant contribution to the literature review and structuring of the paper, and organised and led the writing process and revision of the manuscript during the journal review phase. Development of the theoretical framework, data analysis, interpretation of the results and discussion of the study were conducted in collaboration with the co-authors.

Publication 3: ‘Marketing-specific structural capital, marketing innovation and market performance’.

This publication was a joint venture in which the main author was the only one responsible for data collection and for presenting the paper at the conference. In addition, the main author made a significant contribution to the literature review and structuring of the paper, and organised and led the writing process of the manuscript. Development of the theoretical framework, data analysis, interpretation of the results and discussion of the study were conducted in collaboration with the co-author.

Publication 4: ‘Putting marketing knowledge to use: Marketing-specific relational capital and product/service innovation performance’.

This publication was a joint venture in which the main author was the only one responsible for the data collection. In addition, the main author made a significant contribution to the literature review and structuring of the paper, and organised and led the writing process and revision of the manuscript during the journal review phase. Development of the theoretical framework, data analysis, interpretation of the results and discussion of the study conducted in collaboration with the co-authors.

1 Introduction

This chapter describes the research background and motivation for this study. Subsequently, it establishes the research objectives, research questions and sub-questions based on the research gaps identified. Finally, it illustrates the dissertation's structure.

1.1 Research background and motivation

Intellectual capital (IC) comprises an organisation's valuable knowledge resources. Why should companies worry about it? What does it bring to a company? What is unique about it that managers can benefit from? Answering these questions is an essential requirement to understand how firms should prioritise and combine their valuable knowledge resources towards a set of strategic goals that seek to enhance different types of firm performance.

The current knowledge-based economy has pushed the literature to emphasise knowledge and brainpower as the primary sources of competitive advantage, replacing tangible assets (Youndt et al., 2004; Mahdi et al., 2018). Focusing on the business landscape, eminent knowledge-intensive companies that offer sophisticated products and/or services based on knowledge and that are heavily reliant on professional knowledge (Grimsdottir et al., 2019), such as those from the information and communication technologies sector (Schaper, 2016) or construction contracting firms (Duodu & Rowlinson, 2021), have experienced incredible growth in recent times regarding market capitalisation, market value, sales, exports and size, in general. Interestingly, other sectors where tangible resources have traditionally shown major relevance, such as agriculture, need to rely more on IC to achieve sustainable development (Xu & Wang, 2019). As explained by Kozera (2011), 'contemporary agriculture cannot be limited to land and classic production factors, but must comprise advanced technologies and quality standards, requiring higher than ever human involvement and, in particular, knowledge, experience, skills and competences'(p. 84). Another example is provided by the digital transformation of the manufacturing industry. Nowadays, value creation processes are changing as information and communication technologies merge with production processes. In this way, 'smart factories' execute applications that analyse data and extract knowledge that allow for increasing resource efficiency, reducing waste and costs, and responding quickly to product and market changes (Borangiu et al., 2019). This shows that while there are some types of companies that are forged around knowledge and its exploitation, there are also others within more traditional sectors, such as agriculture and manufacturing, where knowledge resources and digitisation are acquiring paramount relevance.

The necessity to apply knowledge to improve organisational results also relates to the departmental level. For instance, marketing and sales departments are no longer merely focused on collecting data to develop marketing strategies but are making a shift to obtain value from the integration of such data and the use of data analytics. According to Verhoef et al. (2016), to increase performance, a transition is needed from looking back to forecasting, from static analyses to observing changes over time, from analysing averages of all customers to de-averaging into target groups, from data and knowledge collected independently to the integration of the data collected from various sources, and from analysing the effect of marketing investments using individual measurements to integral measurements. Overall, marketing and sales departments, as with any other

organisational function, collect and possess myriads of data from which they increasingly need to generate valuable knowledge to improve the performance of the company.

This perspective towards the business landscape intuitively shows that knowledge resources are of great significance for companies and their competitive advantage development. In this regard, the influence of an organisation's IC on competitiveness has been studied fundamentally in the literature since the late 1990s. A whole series of studies, of which Bontis (1998), Yli-Renko et al. (2002) and Subramaniam and Youndt (2005) stood out for their seminal impact, have analysed the association of IC with business performance, showing that organisations with higher levels of IC outperform their counterparts. Literature reviews, such as Inkinen (2015) and Buenechea-Elberdin (2017), have reviewed empirical papers on the IC-performance linkage, demonstrating that knowing, measuring and managing IC has now become vital for the success of a company. However, managers should be aware that the promotion of different types of performance and different business characteristics or contingency factors might require different combinations of IC assets to contribute to the desired success. Different combinations of IC have different types of performance implications, and firm-specific differences affect the configurations of IC (Hussinki et al., 2018). Managers must evaluate their IC requirements, focusing on their business goals and characteristics (Inkinen, 2015). Thus, further work is needed to analyse the influence of such specificities in the IC-performance linkage.

The theory behind the effect that IC has on value creation and organisational success is known as the 'intellectual capital-based view' (ICV) of the firm (Reed et al., 2006), which in fact emerged from the resource-based view (RBV). The RBV of a firm, which is among the most accepted theories in the strategic management literature (Davis & DeWitt, 2021; Gerhart & Feng, 2021), analyses the association of an organisation's strategic resources with performance (Barney, 1991). The main question that this theory tries to answer is as follows: Why are specific organisations more able to develop strategies that allow them to achieve sustainable competitive advantage and higher profits compared to others? (Peteraf, 1993). The answer is that the competitive advantage of a company stems from resources that are valuable, rare, inimitable and non-substitutable (VRIN framework; Barney, 1991).

Going a bit further, of all the resources that respond to the VRIN model, knowledge stands out, given its natural valuable characteristics, such as inimitability, as it is not easily transmitted and replicated (Kogut & Zander, 1992). This induces the creation of two views theoretically grounded in the RBV: the knowledge-based view (KBV) (Kogut & Zander, 1992; Grant, 1996; Spender, 1996) and the intellectual capital-based view (ICV) (Reed et al., 2006). Both views highlight knowledge as the main resource that allows companies to achieve sustainable competitive advantages. Nevertheless, the difference lies in their focus. While the KBV primarily focuses on evaluating an organisation's knowledge-management strategy to generate knowledge (Reed et al., 2006), ICV is associated with the knowledge stocks embedded in a company (Yound et al., 2004; Reed et al., 2006; Kianto et al., 2014). For the purpose of this study, the ICV was adopted as the main theoretical foundation for the empirical models under study.

From ICV, this study adopted the knowledge perspective of IC, excluding other intangible resources. The reason behind this choice is a matter of focus. If all types of intangibles were included, this would make hypothesis testing highly difficult, as each IC category would be considerably diverse in content to analyse the IC-performance linkage

accurately. For instance, if an inventory of customer-related intangible resources (a particular sub-category within relational capital) can be made, one could come up with several additional elements other than knowledge, such as trust, customer loyalty and brand image, which have been included in some IC taxonomies, such as the ones by Brooking (1996), Saint-Onge (1996) or Sveiby (1997). Intuitively, such elements could be interrelated through a chain of cause–effect relationships that could distort any hypothesis testing regarding the influence of customer capital on performance. For example, trust could be considered a pre-condition to generate knowledge through customer relationships, and such knowledge could subsequently help to better focus marketing initiatives aimed at enhancing customer loyalty and brand image. Therefore, putting all together would involve mixing concepts that have different antecedents and theoretical backgrounds, even though it could be claimed that they are all intangible and customer-related. Thus, knowledge is the only type of intangible resource considered in this research, which guarantees theoretical unity and consistency. In fact, the globally accepted definition of IC given by Subramaniam and Youndt (2005) is embraced. Additionally, the traditional three-component classification is considered, sorting out knowledge resources regarding where they can be found in a company: people (i.e. human capital), the organisation itself (i.e. structural or organisational capital) or relationships (i.e. relational or social capital) (Edvinsson & Malone, 1997; Stewart, 1997; Bontis, 1998; Nahapiet & Ghoshal, 1998).

1.2 **Research gaps**

Similar to several other concepts in the knowledge-management literature, although IC turns out to be theoretically interesting to analyse, it is extremely challenging to identify and measure (Spender & Grant, 1996; Kianto et al., 2018). In fact, how can a concept that focuses on a firm's knowledge resources be conceptualised and measured if such resources are intangible and, therefore, unobservable? Developing theoretically based sub-categories of IC is necessary to improve the capability to operationalise and understand this abstract and sometimes confusing concept. Fortunately, in the late 1990s, considerable studies (Bontis, 1997; Edvinsson & Malone, 1997; Stewart, 1997; Sveiby, 1997) focused on developing frameworks that helped researchers conceptualise IC as well as make it easier to operationalise. Due to the efforts made by these studies in describing and classifying IC, numerous studies have analysed its influence on different types of organisational performance (Inkinen, 2015).

Nevertheless, the large variety of items included within each IC component in these studies presents measurement problems. First, each author makes his own choice regarding the specific elements to be included within each broad IC category, which are typically operationalised using a single construct (e.g. all people-related elements are usually grouped under the 'human capital' umbrella). As each author includes different constituents in the component definition, this significantly affects the comparability of the results obtained by the studies. In other words, even though different studies may be apparently dealing with the same IC components (e.g. human capital, structural capital and relational capital), differences in component specification make the results non-comparable. Second, there is a tendency to use very generic indicators to make them applicable to any context. Therefore, studies on the IC-performance linkage based on this type of generic items provide very general recommendations, such as the need to hire people with good knowledge and skills or the need to invest in information systems. Third, very often in the same construct, items that refer to resources, practices and

outcomes are mixed, resulting in dependency relationships between such elements. All of this provides evidence that IC measurement for research purposes needs a huge improvement regarding relevance and consistency.

To overcome these issues, this study takes a more precise approach towards one of the qualities of knowledge—*contextuality*. This means recognising that the utilisation of knowledge is affected by numerous contextual and institutional factors (Kianto et al., 2018). A new measurement scale was created that gathered the knowledge peculiarities of the marketing and sales context. While all functional areas of the company collaborate in the successful development of products and/or services to satisfy customer needs, the marketing and sales function stands out for creating value for customers and achieving commercial success (Morgan et al., 2009; Davcik & Sharma, 2016). According to Kotler and Armstrong (2018), 'marketing is the process of engaging customers and building profitable customer relationships by creating value for customers and capturing value in return' (p. 53). The ability to produce greater customer value is closely associated with the marketing and sales competences that marketing-oriented companies possess, which induces superior organisational performance (Guenzi & Troilo, 2006). Broadly, this function tackles tasks, such as segmentation and customer retention, tracking trends and monitoring competition, searching for new marketing tools, product/service innovation, inter-department communication and definition of strategic marketing plans, to name but a few, all of which are relevant to guarantee company success.

Moreover, one of the most important aspects specifically related to the marketing and sales department refers to its prominent role in controlling information flows regarding customers, markets, products and services, and competitors, which constitute marketing-specific knowledge resources. Such resources are considered especially relevant for the development of sustained competitive advantages (Hooley et al., 2005). In this regard, continuous advances in the marketing and sales field significantly affect the marketing-specific knowledge resources required to effectively accomplish such functions. Nowadays, customers and organisations interact through various networks and devices, resulting in thousands of different touchpoints. Consequently, new types of big data and analytical approaches, marketing theories, concepts and facilities are emerging (Kannan & Li, 2017). Hence, the study of this differentiated but highly relevant organisational domain, together with the respective knowledge resources and strategic management, appears to be increasingly interesting for academics and practitioners.

Based on the above, this study attempts to address two main research gaps. The first refers to *the lack of context-specific IC measurement scales* (RG1) that enable a more significant and exhaustive evaluation of firms' knowledge assets and their influence on company performance. Addressing this gap through the development of a marketing-specific IC measurement scale will allow for the analysis of the influence of marketing-specific IC on different types of marketing-related performance. Similar to the occurrences documented in general IC literature, wherein the development of the first IC scales (Sveiby, 1997; Bontis, 1998; Nahapiet & Goshal, 1998) resulted in numerous studies that analysed the impact of IC on organisational performance, the development of a novel IC measurement scale *ad hoc* for the marketing and sales domain will lead to studies that analyse its impact on different types of performance. This brings us to the second research gap, i.e. *the lack of empirical studies investigating the degree of association between marketing-specific IC and different types of marketing-related performance* (RG2).

1.3 Research objectives and research questions

This study responds to previous calls for the contextualisation of IC research. The main objective is to analyse the influence of marketing-specific IC on different types of marketing-related performance. The study focuses on ICV and the associations between IC components and performance in the marketing and sales context. In accordance with this objective, this study focused on answering the following main research question:

RQ: How does marketing-specific intellectual capital affect companies' marketing-related performance?

To analyse the different features related to the main research question, four individual sub-questions are formulated, which correspond to the publications gathered in this study, related to the two main research gaps.

RG1 relates to contextuality as among the four critical foundations of knowledge, which should be better recognised in IC measurement to develop more appropriate, valuable and executable scales and tools for organisations. The other dimensions are multi-dimensionality, human agency and action, and temporality and dynamics (Kianto et al., 2018). Although since 1998, studies on the IC-performance linkage have focused on several contextual characteristics, such as industry, type of ownership, technology level, company size or country, they do not recognise the specific types of knowledge resources to be considered in the specific context under study. These studies merely demonstrate the general relevance of IC as they use very generic IC scales. Additionally, organisational functions have been the least analysed context in extant IC research (Patky & Pandey, 2020; Chen et al., 2021). Consequently, the first sub-objective of this study comprises developing an *ad hoc* IC measurement scale for the marketing and sales context. Thus, the first research sub-question formulated is as follows:

RSQ1. Which knowledge resources make up marketing-specific IC?

The following three sub-questions refer to the influence of marketing-specific IC on different types of marketing-related performance (RG2). This implies the analysis of each of the components—marketing-specific human capital (HC), marketing-specific structural capital (SC) and marketing-specific relational capital (RC)—vis-à-vis different types of performance closely associated with the marketing domain (i.e. customer experience, marketing innovation performance and product/service innovation performance).

The second sub-question focuses on marketing-specific HC, motivation and customer experience (CE). Nowadays, the considerable number of touchpoints through which customers and companies interact make controlling and managing the CE a real challenge for organisations (Lemon & Verhoef, 2016). However, there are limited studies in the IC-performance literature that consider CE as a type of performance. Considering that the generation of positive CE is highly dependent on marketing and sales employees, the above deficiency implies that marketing and sales managers lack guidance regarding the HC requirements in this particular context for the development of positive CEs. Additionally, as previous studies have revealed that employee motivation encourages knowledge-related behaviour, such as knowledge and skill acquisition and transmission (Colquit et al., 2000) and the intention to use these new knowledge and skills to perform their tasks (Noe et al., 2010), overall, the second sub-objective in this study aims to

determine the extent to which marketing and sales employees' motivation and HC affect the foundation of positive CEs. Consequently, the second sub-question is as follows:

RSQ2. What is the degree of association between marketing-specific human capital, motivation and customer experience?

The third sub-question refers to marketing-specific SC, marketing innovation and market performance. As Subramaniam and Youndt (2005) emphasised, reliance on manuals, databases and other types of codified knowledge, together with the establishment of structures, processes and routines that stimulate the repeated use of knowledge, may boost an organisation's incremental innovative capabilities (as is the case for marketing innovation). Such SC could be split into two different blocks: IT capital and organisational memory. IT capital refers to the knowledge that an organisation can obtain from the analysis of the information available with the appropriate techniques in the field of IT and communication. During the last years, a plethora of IT-based marketing-related solutions have emerged (Soltani & Navimipour, 2016; Benítez et al., 2018). These marketing-oriented technological tools enable companies to extract new knowledge about potential new customers, customer segments, patterns of customer behaviour, market trends and even top industry insiders and influencers, as well as to analyse customers' profitability and product/service performance, all of which could be very valuable to guide marketing innovation decisions. Regarding organisational memory (Walsh & Ungson, 1991), which is related to data availability for decision-making, previous studies have provided empirical confirmation that knowledge stored in organisational memory pushes innovation (Hanvanich et al., 2006; Camisón & Villar-López, 2011). In other words, storage of marketing-specific knowledge together with its access by marketing and sales employees may facilitate and encourage the generation and implementation of new ideas for marketing and sales practices that could also improve market performance (i.e. customer acquisition and retention). Considering this, the third sub-objective of this study comprises exploring how marketing-specific SC generates marketing innovation and market performance for companies. Consequently, the third sub-question is formulated as follows:

RSQ3. What is the degree of association between marketing-specific structural capital, marketing innovation and market performance?

The last sub-question deals with marketing-specific RC and product/service innovation performance. From the internal perspective of the organisation, several studies have confirmed the importance of knowledge exchange between employees and inter-functional coordination to develop new products and/or services more successfully (Ernst et al., 2010; Bendoly et al., 2012; Tsai & Hsu, 2014). Externally, many studies have underlined the relevance of knowing the business environment and understanding customers' needs, competitors' strategies and the market conditions in which the company operates to innovate successfully (Kohli & Jaworski, 1990; Day, 1994; Atuahene-Gima et al., 2005; Malhotra et al., 2005). Nevertheless, limited studies have focused on what is truly important for companies: the complementarity of internal and external knowledge for product/service innovation developments. This constitutes a significant research opportunity because it entails that managers lack guidelines on the knowledge exchange priorities in their internal and external relationships that help them develop innovative products and/or services. Therefore, the last sub-objective of this study is to analyse how knowledge resources generated through the marketing and sales

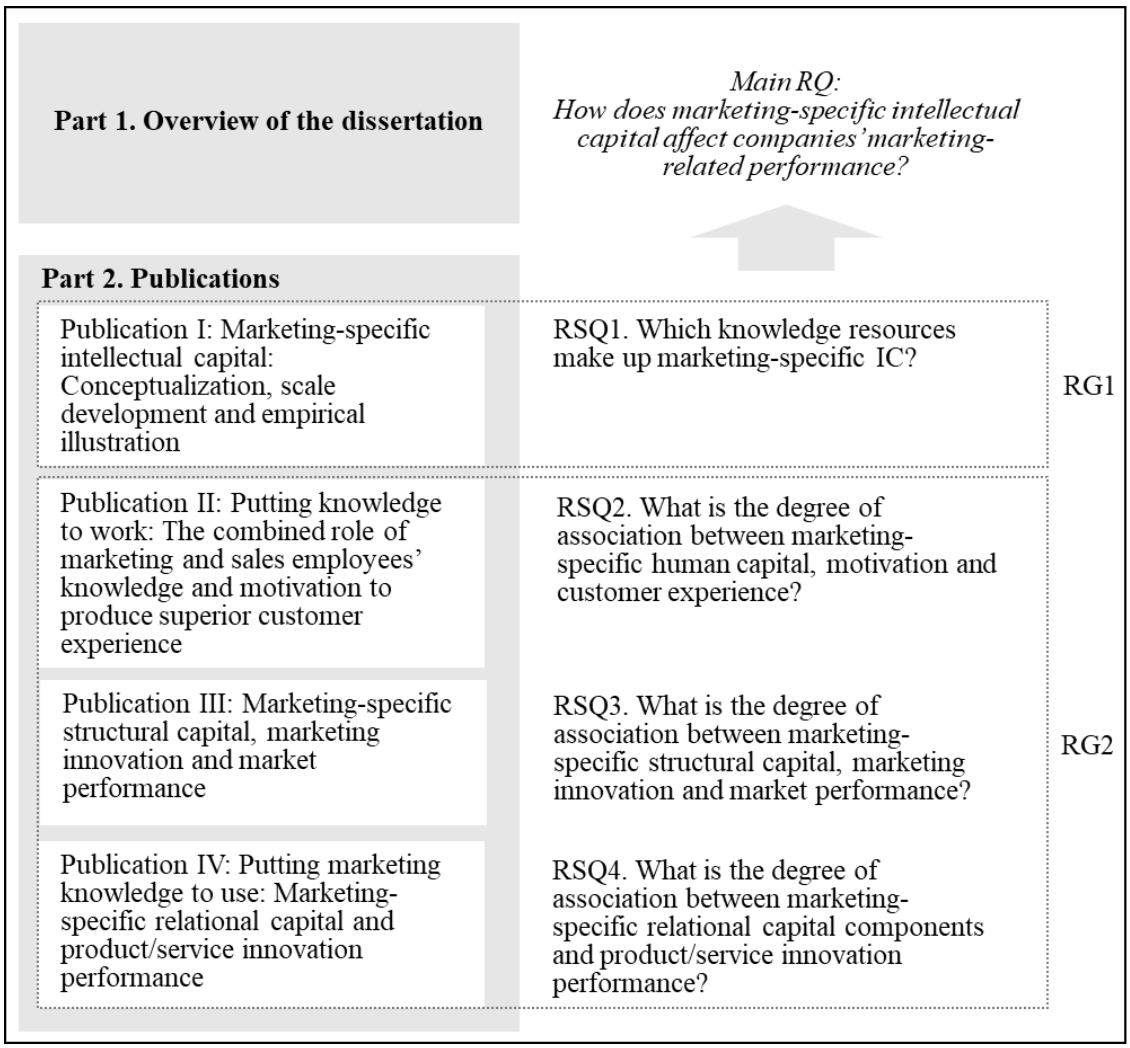
departments' internal and external relationships help to attain superior product/service innovation performance. Therefore, the following research sub-question is formulated:

RSQ4. What is the degree of association between marketing-specific relational capital components and product/service innovation performance?

1.4 Structure of the study

The study begins by explaining the study's motivation, setting the study within the corresponding theoretical background and identifying the research gaps, research objectives and research question and sub-questions. Chapter 2 presents an exhaustive overview of the theoretical background in which the dissertation is grounded. Chapter 3 explains and justifies the methodological strategy applied. Chapter 4 summarises the four publications that make up the study and discusses the respective findings and contributions. Finally, Chapter 5 answers the research sub-questions formulated, presents the theoretical and managerial contributions of the study and exposes the limitations and future research opportunities. Figure 1 shows the structure of the study.

Figure 1: Research questions, research gaps and related publications.



2 Theoretical points of departure

This chapter describes the theoretical background supporting the study in detail. It begins by introducing the ICV of the firm. Within that section, the origin of this theory is first described, which lies in the RBV. Then, it continues by explaining the IC concept and its traditional categorisation. Afterwards, the current state of the literature regarding the IC-performance linkage is analysed. Closing this first section, the need for an IC contextualisation path is suggested. Finally, the chapter discusses the marketing and sales function as a feasible context to focus on when analysing IC measurement.

2.1 Intellectual capital-based view (ICV)

2.1.1 Origins of the ICV

The ICV is not a radically new theory but rather is embedded in the RBV (Martín-de-Castro et al., 2011), which means that the latter fundamentally guides this study. The RBV has established a strong foothold in the strategic management literature (Davis & DeWitt, 2021) by explaining the association between resources and firm performance (Furr & Eisenhardt, 2021). Its rise began in the mid-1980s with authors such as Wernerfelt (1984), Rumelt (1984) and Barney (1986), and continued with other scholars, such as Conner (1991), Grant (1996), Amit and Schoemaker (1993) and Peteraf (1993). The main idea behind the RBV is that a firm's competitive advantage is based on the exploitation of its unique resources (Beamish & Chakravarty, 2021), contrary to much of the thinking about strategy that focused on products and markets to analyse ways of obtaining more than normal economic performance (Conner, 1991). Thus, the RBV looks at firms' resources instead of their offerings to elucidate different strategic options (Wernerfelt, 1984).

The point is that not all types of resources favour a company in being more competitive. Barney (1991) proposed the VRIN framework, which specifies four attributes for a resource to enable a company to develop competitive advantages: valuable, rare, imperfectly imitable and non-substitutable. Therefore, the resources that facilitate exploiting opportunities and neutralising threats (i.e. valuable resources), that are scarce among rivals (i.e. rare), stem from unique historical conditions, are socially complex or are affected by 'causal ambiguity' (i.e. imperfectly imitable) and cannot be replaced by strategically equivalent resources (i.e. non-substitutable) enable a company to develop competitive advantages. Taking these characteristics as a reference, which are the resources that best fit the VRIN framework?

Intangible resources correspond more to these characteristics than tangible resources (Ekaningrum, 2021). They constitute non-physical sources of value usually created by unique organisational procedures, which means that they are difficult to imitate and carry a unique potential to generate vast economic value and growth (Lev, 2001). Among the set of intangible resources, knowledge stands out as the most strategically important one to generate competitive advantage. Knowledge is a distinctive resource given its embeddedness in social interactions and its context dependence, which makes it difficult to imitate (Kogut & Zander, 1992).

Different types of knowledge relevant to the firm have been proposed in the literature. Among others, the management literature has epistemologically differentiated 'knowing

how' and 'knowing about', referring to tacit and explicit knowledge, respectively. Know-how involves experience, practical skills and personal beliefs (Kogut & Zander, 1992; Nonaka & Takeuchi, 1995). Its transfer is a great challenge (Nonaka & Takeuchi, 1995; Grant, 1996) since it represents the unexpressed aspects of knowledge. Knowing about, conversely, 'can be expressed in words and numbers, and easily communicated and shared in the form of hard data, scientific formulae, codified procedures or universal principles' (Nonaka & Takeuchi, 1995, p. 8). Therefore, its fundamental property is ease of communication (Grant, 1996). These knowledge individualities are critical when it comes to its analysis and management.

Regardless of the type of knowledge, the consideration of knowledge resources as the fundamental strategic resource of a firm induces the creation of two views theoretically grounded in the RBV: the KBV (Kogut & Zander, 1992; Grant, 1996; Spender, 1996) and the ICV (Reed et al., 2006). According to Reed et al. (2006), 'both seek to explain the hidden knowledge-based dynamics that underlie a firm's value' (p. 869). However, the difference lies in their focus. While the KBV primarily focuses on evaluating an organisation's knowledge-management strategy to generate knowledge (Reed et al., 2006), the ICV focuses on the knowledge stocks embedded in a company (Youndt et al., 2004).

2.1.2 Conceptualisation and categorisation of IC

IC, which constitutes the epicentre of the ICV, has been defined in multiple manners. Some studies consider all intangible resources when defining IC. In this regard, Brooking (1996) defined IC as 'the combined intangible assets that make a company function' (p. 12). Likewise, Edvinsson (1997) and Edvinsson and Malone (1997) conceptualised IC not only as knowledge but also included other aspects such as experience, organisational technology, relationships and employees' abilities in their IC definition. Along the same lines, Sveiby (1997) defined IC as the invisible part of the balance sheet. Other studies, however, defined IC limited to knowledge and excluded other intangible assets. Nahapiet and Ghoshal (1998) are representative of this trend. According to them, IC refers to the 'knowledge and knowing capability of a social collectivity, such as an organisation, intellectual community or professional practice' (p. 245). Similarly, Sullivan (1999) referred to IC as the knowledge that leads a company to enhance profits. Thus, the current abundance of definitions can be differentiated into two main groups. In the firs one, IC is defined as a group of resources constituting the intangible part of an organisation's balance sheet. This perspective has been adopted by authors such as Brooking (1996), Edvinsson (1997), Edvinsson and Malone (1997), Sveiby (1997), Roos et al. (1997) and Marr (2006). However, the second group has a more restrictive perspective on IC, considering merely knowledge resources and thus understanding IC as the sum of all knowledge resources that organisations leverage to achieve competitive advantage. Authors such as Nahapiet and Ghoshal (1998), Sullivan (1999) and Youndt et al. (2004) can be found within this group.

Regardless of the perspective adopted, IC has usually been divided into three sub-components—HC, SC and RC—classifying the intangible or knowledge resources according to where they can be found in a company. In the following paragraphs, the elements that different studies have included in each of the IC components are listed, differentiating between knowledge-specific and other intangible resources. Such tripartite

classification also differentiates organisational power to preserve its value creation source.

HC encompassed knowledge and other intangible resources residing in employees. The distinction should be made between individual explicit or 'conscious' knowledge and tacit or 'automatic' knowledge (i.e. skills, abilities, know-how, capabilities, competences and expertise). Several studies have also added employees' training and experience to HC. Regarding intangible resources besides knowledge, the following have been suggested: values, attitudes, motivation, satisfaction, loyalty and commitment. The major challenge with HC is that even though it is 'the chief source of competitive advantage' (Roos & Roos, 1997, p. 413), firms are not the owners of the employees. Therefore, their knowledge and other intangible resources disappear when employees leave (Roos & Roos, 1997; Roos et al., 1997).

SC refers to the knowledge and other intangible resources residing in an organisation (Bontis, 1996; Stewart, 1997; Youndt et al., 2004; Wang & Chen, 2013). Regarding knowledge, a distinction has also been made between objectified knowledge and organisational routines, capabilities or know-how. As far as other intangible resources are concerned, the following have been suggested: technological infrastructure, organisational networks and internal processes, management styles and systems, overall organisational culture and research and development (R&D) efforts. Unlike HC, SC is part of a firm (Sveiby, 1997); thus, it remains within the organisation when employees leave the company (Edvinsson & Malone, 1997).

Finally, RC gathers the knowledge and other intangible resources generated through or related to the internal and external relationships of a company (Bontis, 1998; Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005). Initially, this component was labelled 'customer capital' because its focus was merely on customer relationships (e.g. Saint-Onge, 1996; Edvinsson, 1997; Bontis, 1998). Nevertheless, the scope of the concept was expanded, in which relationships with other external and internal stakeholders were also included (Youndt et al., 2004). In this way, the concept was renamed as 'social capital'. The social or RC construct has included items referring to intangible resources and related to the external relationships, such as customer base, distribution channels, customer-related outcomes, etc. Regarding the company's ability to preserve its RC, even though relationships involve employees' participation, when employees leave, the organisational relationship can be preserved.

Even though this three-component categorisation of IC is globally accepted, it has been criticised for its certain inability to gather all the unique intangible resources that can provide value to today's firms for competitive advantages (Kianto, 2007; Kianto et al., 2014; Cesaroni et al., 2015). In an attempt to expand the tripartite categorisation, three novel dimensions have started to gain attention: trust capital, entrepreneurial capital and renewal capital. Trust capital, as its name implies, refers to trust, which is especially reflected in the internal and external relations of a company (Mayer et al., 1995). It is an emotional status based on the positive expectations of another, which is required for knowledge creation and transfer (Nahapiet & Goshal, 1998). Thus, apart from being embedded in organisational culture or SC, it overlaps to some extent with the RC component. Entrepreneurial capital refers to the aptitude and commitment of the firm vis-à-vis entrepreneurial behaviour. It refers both to employees' behaviour and to the support received by the firm (Erikson, 2002). Entrepreneurial orientation is characterised by encouraging radical innovation, competitor orientation and proactiveness when making

high-risk decisions (Alegre & Chiva, 2013). Hence, this dimension is also embedded in the HC and SC dimensions because employees own it; however, it is used for the benefit of the organisation. Finally, renewal capital refers to the 'actualised learning capability of the firm' (Kianto et al., 2010, p. 309), which entails the capability to renew through learning and creativity. In fact, learning is necessary to renew a company's knowledge resources base. Renewal capital overlaps with the three traditional dimensions. Learning potential resides in employees, but open innovation connects it with external RC. However, renewal capital can also be embedded in structural arrangements and thus in the SC dimension.

This study follows the traditional three-component framework because the inclusion of the novel components simply specifies the scope that the tripartite IC model already covers. Instead, the main contribution of this study deals with establishing a more detailed division of the main intangible components of an organisation. Moreover, as explained in the introduction, this study adopts the knowledge view of IC excluding all other intangible resources, as it is assumed that the different types of marketing-related performance under study depend on the continuous management of new and unique knowledge.

Leaving aside the categorisation of IC and going back to the above list of constituents of each IC component, the considerable number of elements that have been (and still are) included in each of them has generated some measurement issues that are explained in the following section.

2.1.3 IC measurement in IC-performance studies

The efforts made by different authors in identifying intangible assets or knowledge resources (depending on the approach adopted) that form the IC of a company generated many studies that were interested in confirming what the KVB or ICV theories said: knowledge resources influence organisational performance. To do so, based on the traditional tri-component categorisation of IC mentioned above, these studies defined each IC component using 'constructs' made up of several items. Put differently, they developed measurement scales to examine their individual association with different types of firm performance.

Among all the measurement scales developed (and because of its wide usage), it is worth mentioning that of Bontis (1997). This measurement scale comprises three sub-scales, one per IC component, which include intangible resources, practices and different outcomes all together in the same construct. This mix of diverse elements makes this IC measurement scale one of the scales with the greatest diversity of items. Nevertheless, it is not the only one; other noteworthy scales in the literature also possess a high degree of item variety. For example, the scale developed by Youndt et al. (2004) also mixes diverse resources with practices in the same construct.

The abovementioned IC measurement scales exemplify that IC constitutes a designed or artificially created conceptual variable, since IC and its components are conceptualised as a combination of different items that all together define the IC entity. The analysis of this kind of construct implies the application of composite measurement models (Henseler, 2017). Nevertheless, studies analysing the association of IC with firm performance usually apply common factor measurement models (Bagozzi, 2011), which is a big mistake.

In addition to this methodological matter, other aspects are also noteworthy. Usually, the studies include a single construct per IC component (i.e. more specific subgroups are not created that better define the general components). Consequently, the indicators used are too generic and they do not really show which specific knowledge resources are to be considered by companies. Furthermore, given that each author makes his or her own item selection, not all studies consider the same ones. What is more, depending on the focus of the definition, some authors mix purely knowledge resources with other intangible stocks, practices or outcomes, all in the same concept. Therefore, the constructs are too diverse in content while also including interdependencies, which directly affects the comparability of the findings between the studies that analyse the association of IC with organisational performance.

Overall, the analysis of the IC-performance linkage based on the aforementioned scales leaves in evidence that IC measurement needs to be improved in relevance and consistency. As a possible solution, this study proposes to limit the scope of IC to what it is truly specific of the ICV: knowledge resources residing in individuals, company structures and social relations.

2.1.4 Towards the contextualisation of intellectual capital

Kianto et al. (2018) clarified that a requirement for gaining relevance in IC research is an in-depth understanding of knowledge qualities (i.e. contextuality, multi-dimensionality, human agency and action, and temporality and dynamics). This study focuses on the first quality and thus, it considers that knowledge is always a contextual phenomenon affected by local and institutional influences. 'Even when we are alone, our culture and communities influence us in the form of internalised conceptions, mental models, attitudes and values' (Kianto et al., 2018; p. 8). Bringing the similarity that knowledge is created in a social context to the field of the company, relevant knowledge on which organisations depend to develop their strategies is dispersed throughout the firm, as each of the functions provides specialised knowledge to the entire set (Simon, 1990; Grant, 1996; Becker, 2001). For instance, producing new products or services requires the integration and coordination of many types of specific knowledge resources from different domains (Kogut & Zander, 1992; Grant, 1996). Whereby applying general models to measure IC only provides general practical recommendations to practitioners (Schaper, 2016).

In an attempt to verify whether the empirical studies conducted on the IC-performance linkage in a specific context adapted the scale used to the context under study, a literature search was conducted in Scopus in September 2019 (and then updated in May 2021). According to the search, 437 articles presented a contextual approach, of which 317 analysed the IC-performance association in a specific industry or set of industries: for instance, banking (64 articles), different types of medium-high or high technology industries (63 papers), manufacturing firms (38) and educational institutions (20). Ownership is the second most commonly considered context (147 papers), with listed companies being the most adopted approach (118 articles). Also, 62 papers emphasised company size, of which 47 focused on SMEs. Country is the fourth contextual factor analysed, with 42 papers in which developing or emerging countries (20) and Islamic countries (12) can be highlighted. Organisational function or unit is the fifth contextual factor considered (six papers), of which four articles focused on top manager's IC (Ginesti, 2019; Souisa et al., 2019; Ying et al., 2019; Cui & Jin, 2020) and two papers on

IC within the HRM function (Patky & Pandey, 2020; Chen et al., 2021). Finally, company age is the least studied contextual factor in the literature (four papers).

Focusing on the measurement scales, more than half of these articles utilise the same type of generic IC scales mentioned before (Bontis, 1997; Youndt et al., 2004). Hence, as an adaptation of the items to the particularities of each context was not conducted, the methodological and content concerns mentioned before also apply to these studies. Put differently, the extant contextual studies on the IC-performance relationship fail to demonstrate the specific types of knowledge or intangible assets to be aware of in each particular context, simply showing the general relevance of IC. Given this, this study attempts to provide a solution to these concerns by developing a measurement scale adjusted to the knowledge particularities of the marketing and sales context. The following section explains why this domain is an interesting context to focus on.

2.2 The marketing and sales function as an IC-specific context

2.2.1 From market orientation and marketing-specific IC to competitive advantage

Kotler and Armstrong (2018) defined marketing as 'the process of engaging customers and building profitable customer relationships by creating value for customers and capturing value in return' (p. 53). A key marketing concept closely related to knowledge is 'market orientation' (MO), which was particularly developed in the 1990s (Kumar et al., 2011). According to Gotteland et al. (2020), an organisation's marketing proactivity and proactive MO have always being simultaneous. This is why MO has been one of the principal concepts addressed in the marketing literature (Theodosiou et al., 2012). MO is conceived as a type of organisational culture that comprises a general behaviour towards the generation of higher value for customers (Narver & Slater, 1990). Therefore, market-oriented organisations can satisfy more customers' needs through superior value creation, which makes the difference in achieving a sustainable competitive advantage (Guenzi & Troilo, 2006; Gotteland et al., 2020).

From the traditional RBV theory (Barney 1991), the literature suggests that companies that are more market-oriented can achieve greater organisational performance, given their greater understanding of customers' needs, competitors' strategies and the general business environment, comparing it with their competitors (Morgan et al., 2009). Companies with an MO culture acquire important knowledge from customers, competitors and the market in general, and disseminate it throughout the organisation, with which they can offer superior value to their customers. (Kumar et al., 2011). Thus, market-oriented companies have a 'know what' advantage, which allows managers to select from the available resources of knowledge those that allow them to better tailor their offerings to the market conditions. (Slater & Narver, 1995). In this regard, although the literature proposes that knowledge resources associated with market-related activities are available throughout the whole company, the highest concentration belongs to the marketing and sales department (Homburg et al., 1999; Rouziés et al., 2005).

Marketing and sales departments control information flows regarding customers, markets, products and services, and competitors. Put differently, they control marketing-specific knowledge resources, which are considered especially relevant for the development of sustained competitive advantages (Hooley et al., 2005). Kohlbacher

(2008, p. 96) defined marketing knowledge as 'all knowledge, both declarative and procedural, concerning marketing thinking and behaviour in a corporation'. Achrol and Kotler (1999) claimed that the acquisition and development of marketing knowledge constitutes among the most important purposes of marketing and sales in today's knowledge-based economy. Specifically, Bennet and Gabriel (1999) elucidated that customer knowledge is the most important knowledge resource to maintain competitiveness. Overall, marketing and sales knowledge is characterised by a high degree of specificity and a high degree of complexity (Simonin, 1999). Hence, it is clearly linked to an organisation's ability to develop competitive advantages. Taking the RBV as a basis (Wernerfelt, 1984; Peteraf, 1993), marketing and sales knowledge resources stick to the VRIN framework (Barney 1991), which means they contribute to the achievement of a company's competitive advantage (Dutta et al., 1999; Weerawardena, 2003; Hooley et al., 2005). Thus, organisations that exploit marketing-specific knowledge resources will be in a better position in the market and can succeed against competitors (Srivastava et al., 1998).

Linking MO and marketing-specific knowledge resource exploitation, this study views marketing-specific IC as the result of a firm's MO: organisations that are market-oriented generate marketing-specific knowledge, whose management and monitoring will increase the chance that their market-oriented strategies will conduce superior performance. Additionally, regarding the turbulent changes taking place in the business environment, the marketing and sales department is expected to continually change its contents, emphases and boundaries, offering fertile ground for the analysis and application of IC principles (Schlegelmilch & Penz, 2002).

2.2.2 **Marketing-related performance**

The challenge with the marketing and sales function is to exhibit how MO and marketing-specific IC management contribute to company performance. Considering that the long-term survival of the company depends on its ability to create value for customers (Day, 1990), which is the main objective of the marketing and sales function, it is important to know the level of the contribution that this department makes to the overall business success. Therefore, evaluating marketing performance is marketing and sales managers' primary task (Rossano et al., 2006). This challenge has induced an increased interest in measuring marketing-specific performance among academics (Grønholdt & Martensen, 2006) in an attempt to provide marketing and sales managers with a complete assessment to quantify their individual contribution to overall organisational performance (Gao, 2010).

A literature review by Gao (2010) about different marketing performance measures used in the literature showed that there is a conceptual confusion regarding terms such as marketing effectiveness, marketing efficiency, marketing productivity, marketing performance and marketing metrics. As specified by Gao (2010), 'it is somewhat surprising that a review of the literature has failed to unearth a clear and explicit definition of the term 'marketing performance' (p.8). Bonoma and Clark (1999, p.1) noted that '…perhaps no other concept in marketing's short history has proven as stubbornly resistant to conceptualisation, definition or application as that of marketing performance…'. The only general conclusion that could be drawn in both strategic and marketing literature is that marketing performance is multi-dimensional in nature (Gao, 2010).

Even though there are discrepancies regarding the general definition of marketing performance and how exactly to measure it, some general trends can be identified from the studies that have measured it. For instance, early research on marketing performance was used to measure it based on financial features such as profit, sales and cash flow (Gao, 2010). Later, non-financial measures such as customer satisfaction and loyalty or brand equity began to gain the attention of researchers, emphasising the importance of intangible assets (Clark, 1999). Afterwards, a new trend emerged that linked marketing performance with shareholder value (Lehmann, 2004). This is linked to the fact that marketing professionals are forced to apply quantitative measurements that demonstrate to business owners the real contribution of marketing and sales strategies to overall firm value. In fact, the types of measures available have been changing and increasing over time. Some of these metrics were captured into six categories by Ambler and Kokkinaki (1999) and Rossano et al. (2006): financial measures, competitive market measures, consumer behaviour measures, consumer intermediate measures, direct customer measures and innovativeness measures.

Considering that this study aims to analyse the impact of marketing-specific IC on marketing-related performance, specific marketing performance metrics have been selected. This will allow the discovery of how to improve marketing knowledge resource allocation to attain superior departmental effectiveness (Grønholdt & Martensen, 2006).

Setting out from the measures highlighted by Rossano et al. (2006), this study focuses on consumer behaviour and innovativeness, choosing two measures per category. Given that the ability of an organisation to survive in a market is based on the capacity to create value, which is defined by customers (Day, 1990), measuring performance related to customers' behaviour is a key task for marketing and sales managers (Rossano et al., 2006). Moreover, if a company is market-oriented and, thus, customer-oriented, it is logical to also use consumer-based measures to evaluate its success (Kokkinaki & Ambler, 1999). Furthermore, the election of the second group of metrics is justified by the fact that IC is extensively considered a principal antecedent of a company's capability to innovate (Subramaniam & Youndt, 2005; Wu et al., 2007; Hsu & Fang, 2009; Buenechea-Elberdin, 2017).

Regarding customer behaviour measures, the first category considered is customer experience (CE), which constitutes the previous phase of customer loyalty (Roy, 2018). CE involves customers' total experiences from the search phase to the post-purchase phase (Verhoef et al., 2009; Lemke et al., 2011). It refers to the personal and psychological responses that customers have derived from any type of interaction they have with a firm (Meyer & Schwager, 2007). When marketing and sales employees interact with their customers, they are the principal intermediaries between the company and the customer and are responsible for transferring knowledge to them (Groza et al., 2016). Hence, marketing and sales employees' HC, which constitutes a part of marketing-specific IC, should be primordial in the generation of positive CEs.

Another customer behaviour measure is market performance, which is understood as customer acquisition and retention (Liozu, 2015). Studies on customer relationship management, such as Soltani and Navimpour (2016), highlighted that knowledge regarding potential customers and existing customer segments may help improve targeting capabilities and thus the effectiveness of commercial actions (e.g. selling the right products to the right customers). Similarly, the exploitation and coordination of marketing-specific knowledge assets about the industry in which the firm operates

qualifies organisations to develop strategies that match their market environments more effectively (Makadok, 2001; Morgan et al., 2009).

As for the innovativeness measures, two different innovation performance categories were selected: marketing innovation and product/service innovation. Regarding the former, it comprises 'improvements in the marketing mix' (Naidoo, 2010, p. 1311). The knowledge codified in the marketing and sales function's manuals and databases, and its repetitive use throughout the establishment of structures, processes and routines, facilitates an organisation's incremental innovation to occur (Abernathy & Clark, 1985; Subramaniam & Youndt, 2005), as is the case for marketing innovation (Contò et al., 2015). This prior knowledge preserved within the marketing and sales department about customers, product/services, markets and competitors can help companies to perceive changes in the general business environment, which can serve as a source of inspiration to introduce changes in their marketing mix strategies by creating more competitive offerings than those of their rivals. In other words, the storage of marketing-specific knowledge or IC encourages the development and employment of new ideas for marketing practices.

Finally, product/service innovation concerns the successful exploitation of new ideas and 'includes the technical design, R&D, manufacturing, management and commercial activities involved in the marketing of a new (or improved) product/service' (Alegre et al., 2006, p. 334). In the literature, the importance of the marketing and sales function as an engine of product/service innovation has been highly recognised due to its market orientation, which provides knowledge about new technology trends, customers and the general competitive environment (Atuahene-Gima et al., 2005; Danneels, 2007). Marketing-specific IC is imperative as an antecedent of product/service innovation performance given the value that knowledge resources gathered from internal and external relationships add to innovation processes (Davcik & Sharma, 2016).

In conclusion, marketing and sales departments possess critical IC, whose management really matters when it comes to improving marketing performance, especially that related to customer behaviour and innovativeness.

3 Research design and methods

3.1 Methodological considerations

Clarifying the philosophical perspective of research from the very beginning is essential (Proctor, 2005), considering that it will be the basis to achieve the defined research objectives and to answer the research questions effectively. The objective of this study has been outlined as analysing the influence of marketing-specific IC on different types of marketing-related performance. Therefore, it falls under the *positivist* paradigm (Godfrey-Smith, 2009). This philosophical stance views reality as objective and reasonable (Eriksson & Kovalainen, 2008) and claims that 'the role of theory is to generate hypotheses that can be tested' (Bryman & Bell, 2011, p.15). In other words, the relation between theory and the research is *deductive*, meaning that the theory acts as a guide for the research process. The study utilises a *quantitative* method based on a structured survey, which allows the researcher to test the hypotheses developed through the collected data, having first analysed the respective theories (Barczak, 2015).

The research process started with a traditional unstructured literature review of extant empirical research on the IC-performance linkage. This review enabled the study to identify one of the principal problems caused by the measurement scales used: the need to better recognise the contextuality of knowledge resources in IC scales. The latter induced the development of a new measurement scale for the IC specific to the marketing and sales context. To that end, a literature search was conducted to recognise the specific-knowledge resources in the marketing and sales domain and to develop a new scale that could address the identified deficiencies. A structured survey was then conducted to verify the relevance and utility of the new scale, and three research models were then tested regarding the IC-performance linkage in the marketing context. The subsequent sections explain in detail the two methods utilised in this study: scale development and survey research.

3.2 Scale development

This section explains how the marketing-specific IC scale was developed and the methods applied to validate it. Following Clauss (2016), a four-step process was used that was adapted to the kind of measurement model applicable to the concept under study. In the first step, the domain and dimensionality of marketing-specific IC were specified; in the second step, items were generated for each dimension of the IC concept and the right measurement model to be applied was stablished; in the third step, initial validity tests were conducted; and in the last step, data was collected and final validity tests were conducted.

3.2.1 Step 1: Specifying the domain and the dimensionality of marketing-specific IC

According to Churchill (1979), to develop a scale of high validity, 'the researcher must be exacting in delineating what is included in the definition and what is excluded' (p. 67). As already explained in Chapter 2, in this study, the knowledge perspective of IC has been adopted, meaning that intangible resources other than knowledge have been excluded from the definition of marketing-specific IC. As a result of this choice,

marketing-specific IC has been defined as *all the available valuable marketing-specific knowledge resources that an organisation manages in developing its marketing capabilities and achieving its marketing-related goals*.

Setting out from the above definition, marketing-specific IC dimensions were established. To that end, the traditional IC classification of three components was adjusted to the marketing and sales context. Thus, the following three broad categories were considered: marketing-specific HC, marketing-specific SC and marketing-specific RC. This initial categorisation was further broken down to obtain a finer-grained picture that could reflect the knowledge particularities of the marketing and sales domain. For this purpose, the main knowledge objects that marketing employees need to cope with to succeed in their job were identified, differentiating between explicit or 'conscious' knowledge and tacit or 'automatic' knowledge (Nahapiet and Ghoshal, 1998).

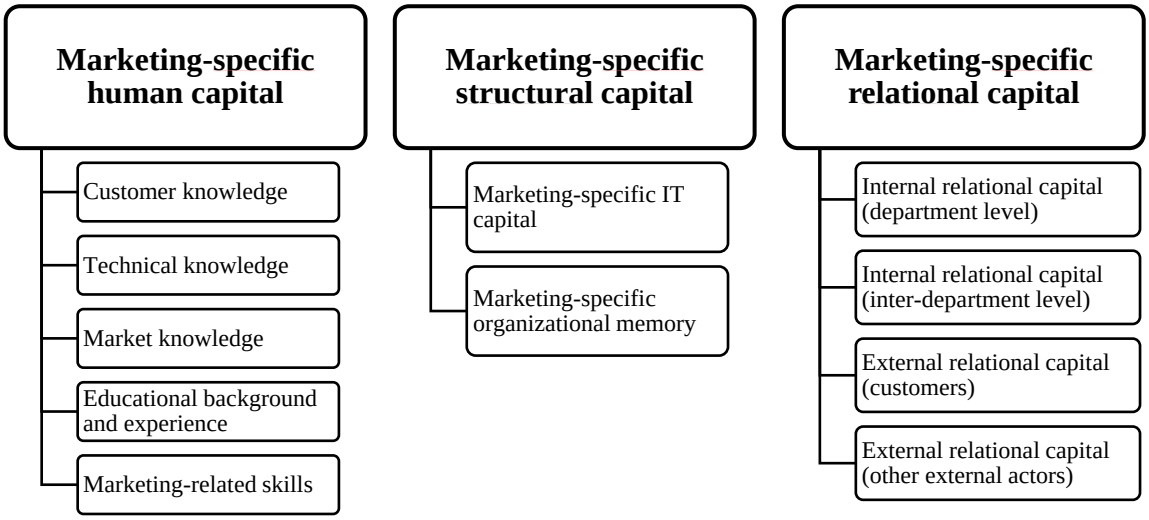
Regarding explicit knowledge, two categories were distinguished: knowledge about 'facts' and knowledge about 'concepts and frameworks'. In the case of 'facts', the reflection was about the entities that by default marketing and sales employees need to know about. After having examined the mainstream marketing literature, four knowledge objects were identified: customers, products and/or services, market(s) and the company itself (i.e. the internal context). However, marketing and sales professionals also need to master marketing-related concepts, frameworks and principles to develop successful marketing strategies. Such concepts and frameworks constitute 'disciplinary knowledge' (Rossiter, 2001), which represents the fifth knowledge object within the explicit knowledge category. Beyond this knowledge category, marketing skills are also needed, which refer to the tacit knowledge. This know-how that constitutes the last knowledge object represents the experience and expertise acquired by oneself that allows one to do things effortlessly and efficiently (Von Hippel, 1988).

Based on the above knowledge objects and the more specific 'knowledge containers' that can be found in the case of company structures and relationships, the following marketing-specific IC sub-categories were suggested.

Regarding marketing-specific HC, 'information-type' (Kogut & Zander, 1992) knowledge-related sub-categories were first distinguished: customer knowledge, technical knowledge and market knowledge (notice that knowledge about the internal context is mainly considered to reside in inter-departmental relationships). Second, educational background and experience were considered (Bueno et al., 2011), which encompasses disciplinary knowledge (Rossiter, 2001) (i.e. knowledge about the marketing discipline) and overall accumulated professional expertise. Finally, marketing-specific skills, which correspond to the tacit or 'automatic' knowledge domain (Grant, 2010), were distinguished. In the case of marketing-specific SC, two sub-categories were proposed that correspond to different types of 'knowledge containers' that can be found in the marketing and sales structures: IT capital (i.e. marketing-related IT solutions) and organisational memory. While the first sub-category includes factual knowledge about customers, products and/or services and markets that has been generated using marketing-related IT tools, the second sub-category encompasses any type of marketing-related knowledge not generated through information-processing mechanisms that remains in the company even though employees may leave. Finally, as for marketing-specific RC, four sub-categories were suggested, namely, internal RC at the department and inter-department levels and external RC related to customers and to other external actors, which refer to different knowledge about clients, products and/or services, markets, internal

context of the company and know-how, according to the closeness of the relationships with these knowledge domains. Figure 2 displays a summary of the architecture.

Figure 2: Marketing-specific IC architecture overview



3.2.2 Step 2: Item generation and measurement model selection

Once the domain and dimensionality of marketing-specific IC were established, the next step involved selecting and/or generating items for each specific dimension (Clauss, 2016). Additionally, to proceed with the next steps of the process (preliminary and final validity tests), the type of measurement model to be applied needed to be specified, as the type of validity tests to be conducted vary depending on this choice. Usually, this is something omitted in scale development processes, as it is taken for granted that a common factor measurement model applies. However, the ontological status of the variables under study may call for a different choice.

Regarding item generation and/or selection, a literature review was conducted to recognise extant scales that could be applied to measure some dimensions of marketing-specific IC. As can be seen in Table 2 (p. 45), this was the case for most HC constituents, namely, customer knowledge, technical knowledge, market knowledge and marketing-specific skills. In the case of such dimensions, the marketing literature provided us with already existing scales that served as a foundation to develop marketing-specific IC sub-scales. However, in the case of educational background and experience, a new sub-scale had to be developed based on traditional IC literature (Bontis, 1998; Wang & Chang, 2005).

Moving now to marketing-specific SC, neither the marketing literature nor the IC literature provided already existing scales that could be used to fit the research purposes. In the case of IT capital, items were developed based on knowledge that marketers can acquire through extant marketing-related IT solutions [e.g. customer relationship management (CRM), customer experience management software, customer journey tracking software, social media management software, etc.]. As for organisational memory, items adapted to the marketing context were taken from the general knowledge management literature (Nelson & Winter, 1982; Frambach et al., 2003; Argote, 2006; Dalkir, 2011; Murray et al., 2011; O'Dell & Hubert, 2011).

Finally, marketing-specific RC faced a similar situation as for the marketing-specific SC: new sub-scales also needed to be developed. The items considered were based on the definition of social/relational capital by Youndt et al. (2004), the marketing-specific knowledge objects previously identified (Rossiter, 2001; Kotler & Armstrong, 2018) and the explicit relationship context addressed in each case (departmental, inter-departmental, customer-related and referring to other external actors).

Regarding the measurement model to be applied, as stated above, this is decided based on the ontological status of the conceptual variables. Following Henseler (2017), two main types can be distinguished: behavioural conceptual variables and designed conceptual variables. The former concern human attitudes, intentions, behaviours, beliefs or perceptions, which '...exist in nature irrespective of scientific investigation' (Henseler, 2017, p. 178). The latter, conversely, refer to conceptual abstractions developed because of theoretical thinking (i.e. they are human-made objects or 'artefacts').

Within the behavioural conceptual variable category, two different measurement models can be applied depending on whether the indicators are caused by the unobservable variable or vice versa. If the items are understood as the consequence of the unobservable variable, and therefore the indicators are proof of the existence of the unobservable variable, reflective measurement (or common factor models) apply. In this case, high correlations are expected between the items (Sarstedt et al., 2016; Henseler, 2017). Otherwise, if the indicators cause the unobservable variable, causal-formative measurement models are applied, in which high correlations between items are not anticipated (Sarstedt et al., 2016; Henseler, 2017).

Regarding designed conceptual variables, unlike in the case of behavioural conceptual variables, the application of a composite measurement model is the only possibility (Henseler, 2017). Even if sometimes it can be mixed with causal-formative measurement, in this case, the items define the unobservable variable instead of causing it. Therefore, the relationship between the indicators and the unobservable conceptual variable is not a cause–effect relationship but rather a way to organise the necessary ingredients to form a new concept (Henseler, 2017). In this regard, the IC entity and its components only exist as an idea; it is not the consequence of certain indicators, but it is formed or defined through different constituents.

Many of the studies that focus on developing measurement scales apply by default the common factor approach to prove the existence of the unobservable concepts that compose these scales. Nevertheless, it has been argued that 'if there is no actual concept but only a theoretical definition (abstraction or idea), then validation cannot encompass anything more than an assessment of fidelity between the definition and the content of the measurement item' (Rigdon, 2012, p. 348). In other words, for the assessment of the measurement scale developed in this research, and given the ontological nature of the variables under study (i.e. marketing-specific IC and its components), a common factor approach is not applicable. As neither marketing-specific IC sub-categories bring their corresponding knowledge items into existence nor the indicators or observable variables make the IC sub-categories exist (they just define or shape them in a purely intellectual way), composite measurement is the suitable option to apply in this research (Henseler, 2017).

3.2.3 Steps 3 and 4: Scale validation

In the case of composites, content validity, face validity and convergent validity are required to assess scale validity. The first two are assessed before the data collection process takes place (step 3), while the last one is assessed once data have been collected (step 4). According to Hardesty and Bearden (2004, p. 99), 'items from a scale must reflect what they are intended to measure (i.e. face validity), represent a proper sample of the domain of a construct (i.e. content validity) and pass other tests of validity, such as convergent validity in this case, for a measure to have construct validity'.

To guarantee content validity—i.e. 'the degree to which an assessment instrument is relevant to and representative of, the targeted construct it is designed to measure' (Rusticus, 2014, p.1961)—the scale development team was composed of three members that comprised the PhD candidate and her two supervisors. The PhD candidate had an MSc in international marketing and was initiating her academic career. One of the supervisors had high expertise in the study of IC with outstanding publications in the most relevant journals in this domain and the second supervisor also had significant experience in IC, complementing it with outstanding publications in the marketing area. As explained previously, this team conducted a search for the elements to be included in the novel scale in the corresponding literature, which was first conducted individually and then collectively contrasted (10 rounds were carried out) until obtaining a version of the scale that everyone agreed with. As suggested by Churchill (1979), in the initial rounds, the emphasis was on selecting and/or generating indicators that tapped each of the dimensions of the concept under study (i.e. marketing-specific IC) through an extensive literature review, while in the last rounds, the emphasis was on editing indicators' wording to guarantee that each statement was as precise as possible. Once the final version was determined, experts from the marketing department of the doctoral student's university were asked to verify the scale, who did not suggest any modifications.

To improve face validity—the extent to which a scale truly measures what it is intended to measure (Bryman & Bell, 2011)—a pilot test was conducted to ascertain if the indicators included could be understood by the marketing and sales managers and were equally applicable for companies with different characteristics. Overall, six companies were contacted to collaborate and give their feedback about the scale: three manufacturing firms from the food, beverage and wood industries (one of them B2C and the other two B2C) and three service firms from the editorial, marketing and telecommunication industries (two of them B2B and the other one B2C). All the managers participating in the pre-test seemed comfortable with the scale and thus did not recommend any adjustment. Additionally, most of them thought that the measurement scale was effective and relevant, enabling them to make a quick diagnosis of the situation of their marketing-specific knowledge resources.

Once content and face validity were guaranteed, the data collection process took place, which allowed testing for the last type of validity to be considered in the case of composites: convergent validity. This test verifies whether the items included to define the conceptual variables really capture their essence through a redundancy analysis (Hair et al., 2017). This requires including a summary indicator for each conceptual variable that collects its essence in general terms. Then, the correlation between the composite created with the remaining items and this summary variable is calculated, which should be 0.707 or higher (Hair et al., 2017). In this case, all but one of the correlations were higher than the threshold number. Nevertheless, as this was very close to the

recommended threshold, it was concluded that the convergent validity was accurate for all variables and hence, the items included really capture the essence of the corresponding construct.

3.3 Survey research

As already explained in the introduction of this chapter, a *quantitative* methodology was considered the most appropriate one to analyse the influence of marketing-specific IC on different types of marketing-related performance. As opposed to *qualitative* research, which is typically defined as *inductive* (Barczak, 2015), and relying on *subjectivity* (Pope & Mays, 2000), a *quantitative* approach rests on the principle of *objectivity* (Miles & Huberman, 1984). Such principle considers that reality is objective, and that the researcher does not influence it. (Bryman & Bell, 2011). Although *qualitative* methods enable the researcher to respond to more specific questions since they gather deeper insights and perceptions from the sample (Saunders et al., 2012), the researcher can partially influence both the responses from the small sample and their interpretation, which simultaneously are not very generalizable (Polit & Beck, 2010). Nevertheless, it should be acknowledged that even if *quantitative* methods obtain opinions from a bigger representative sample, these opinions are not as deep as those obtained from a qualitative method (Lakshman et al., 2000).

Given the lack of previous studies that analyse the association of marketing-specific IC with different types of marketing-related performance, a first *quantitative* and survey-based approach to this issue was deemed highly appropriate. In fact, other studies published in quality journals that measure IC in general have used questionnaires to answer the research questions and achieve the proposed research objectives (Subramaniam & Youndt, 2005; Hsu & Fang, 2009; Delgado-Verde et al., 2011). Thus, a self-completion questionnaire was designed in which respondents answered questions by completing the survey themselves. There are other alternatives to quantitative research approaches, such as experimental research (true and quasi-experimental) and secondary data analysis (Bhattacherjee, 2012). However, survey research was deemed the best option as it allows sampling data from respondents that are representative of a population and is extensively used in the social sciences and strategic management disciplines (Williams, 2007).

The main advantage of the primary data gathered through survey methodology is that the research instrument is designed to specifically answer the proposed research questions (Slater & Atuahene-Gima, 2004). Other benefits related to self-completion questionnaires include their low cost, ease of administration, lack of interviewer influence and accessibility for participants. Conversely, there are some drawbacks to be considered, such as difficulty in helping respondents in case they find it difficult to understand any question, difficulty of asking a long and complex kind of question, inability to collect more information beyond the questions, greater possibility of missing data and fewer responses (Bryman & Bell, 2011). As observed, there are some challenges when conducting high-quality survey research. The researcher must be transparent regarding the objective(s) of the research, as these will guide decisions about sample representativeness, sample size, selection of informants, strategies for securing a high response rate and the process for developing valid measures of the constructs (Slater & Atuahene-Gima, 2004). However, the researcher should test for respondent competence (i.e. whether their profile is adequate to answer the questionnaire), common-method bias

(i.e. alterations in responses caused by failures in the research instrument; Podsakoff et al., 2003) and construct validity (i.e. the level of the survey representativeness of the target constructs for which it is designed to measure; Rusticus, 2014) to ensure that threats to the internal validity of the study will not occur (Slater & Atuahene-Gima, 2004). All this was considered to preserve the quality of the research method applied in this study.

3.3.1 **Sample and data collection**

The target population for this study encompassed Spanish companies with at least 100 employees. This threshold was determined to ensure that the organisations participating in the survey had a well-developed marketing and sales function. To identify the companies that met this criterion, the Sistema de Análisis de Balances Ibéricos (System of Iberian Balance Sheet Analysis; SABI) database was used. The search resulted in 2,346 firms. Based on this finite population, the following formula was used to calculate the minimum sample size needed for a study to be representative:

$$n_{fin} = \frac{n_{inf}}{1 + \frac{n_{inf} - 1}{N}} = \frac{400}{1 + (\frac{400 - 1}{2{,}346})} = 342,$$

where

n_{fin} is the sample size for a statistically finite population,

n_{inf} is the sample size for a statistically infinite population,

N is the population size.

As the preceding formula required the calculation of the sample size for infinite populations, this was first calculated as:

$$n_{inf} = Z^2_{\propto/2} * \frac{PQ}{e^2} = 2^2 * \frac{2.500}{5^2} = 400.$$

In this formula,

$Z_{\alpha/2}$ represents the critical value corresponding to the standard normal distribution for the chosen significance level (in our case, 4.5%, which implies a confidence or security level in the inference of results from the sample to the whole population of 95.5%).

PQ is the estimate of the population variance under unfavourable sampling conditions (i.e. it is the maximum value that this variance could have).

e represents the maximum sampling error acceptable to researchers.

Afterwards, the target sample was contacted by phone, promising total confidentiality. To guarantee the preservation of the same proportions of company type represented in the population (regarding size, industry and technology level), a stratified sampling strategy was applied. This sampling technique reduces the influence that the researcher may have when selecting the participants; therefore, it allows making generalisations

from the sample to the population with more confidence (Sharma, 2017). In other words, stratified random sampling increases the external validity of the findings.

Companies were classified into the manufacturing/service and high-tech and low-tech categories based on their NACE (Nomenclature Statistique des Activités Economiques dans la Communauté Européenne; Statistical Nomenclature of Economic Activities in the European Union) codes. Regarding company size, companies with 250 employees or more were classified as large-sized, while firms with less than 250 employees but at least 100 were classified as medium-sized.

The final sample included 346 companies (four more than the minimum required) that answered the survey by email (in limited cases, the questionnaire was answered through a phone interview). Throughout the data collection process (which extended from January to October 2018), the PhD candidate was in charge of contacting the companies by phone to explain the study and research involved and encourage participation as well as the follow-up process. The responses to the survey were registered in an Excel spreadsheet. Details regarding the configuration of the final sample are displayed in Table 1. In the case of the B2B versus B2C distinction, if companies answered that they only serve corporate customers, they were classified as B2B, whereas if they answered that they serve only end-consumers or both corporate customers and end-consumers, they were classified as B2C.

Regarding respondents' profiles, 85.26% held a managerial role in the marketing domain, 6.65% were marketing and sales technicians or assistants, 5.20% were chief executing officers (CEOs), 1.45% were salespeople and the remaining 1.45% were unspecified.

Table 1: Sample composition

	B2B		*B2C*	
Industry	*Freq.*	*(%)*	*Freq.*	*(%)*
Food industry	12	3.47%	16	4.62%
Manufacture of beverages			2	0.58%
Textile industry	1	0.29%	2	0.58%
Manufacture of clothing	1	0.29%	2	0.58%
Leather and footwear industry	2	0.58%	1	0.29%
Wood and cork industry, except furniture: basketry and plaiting	1	0.29%	1	0.29%
Paper industry	7	2.02%		
Graphic arts and reproduction of recorded media	4	1.16%		
Manufacture of rubber and plastic products	13	3.76%	1	0.29%
Manufacture of other non-metallic mineral products	10	2.89%	1	0.29%
Metallurgy: manufacture of iron, steel and ferroalloy products	13	3.76%		
Manufacture of metal products, except machinery and equipment	16	4.62%	1	0.29%
Manufacture of other transport material	2	0.58%		
Furniture manufacturing	4	1.16%		
Other manufacturing industries	1	0.29%	2	0.58%
Medium-low and low technology manufacturing firms	**87**	**25.14%**	**29**	**8.38%**
Chemical industry	7	2.02%	9	2.60%
Manufacture of pharmaceutical products	1	0.29%	3	0.87%

	B2B		*B2C*	
Industry	*Freq.*	*(%)*	*Freq.*	*(%)*
Manufacture of computer, electronic and optical products	5	1.45%	1	0.29%
Manufacture of electrical equipment and material	9	2.60%	2	0.58%
Manufacture of machinery and equipment	8	2.31%	5	1.45%
Manufacture of motor vehicles, trailers and semi-trailers	7	2.02%	2	0.58%
Manufacture of other transport material	3	0.87%		
Medium-high and high technology manufacturing firms	**40**	**11.56%**	**22**	**6.36%**
Land transport and pipeline	10	2.89%	15	4.34%
Maritime and inland waterway transport	1	0.29%		
Accommodation services	1	0.29%	15	4.34%
Food and beverage services	3	0.87%	16	4.62%
Edition	1	0.29%	4	1.16%
Financial services, except insurance and pension funds	1	0.29%	4	1.16%
Real estate activities	1	0.29%	4	1.16%
Legal and accounting activities	3	0.87%	1	0.29%
Activities of head offices, business management consulting activities	4	1.16%	7	2.02%
Architectural and engineering technical services; technical tests and analyses	17	4.91%	1	0.29%
Advertising and market studies	11	3.18%	1	0.29%
Other professional, scientific and technical activities	4	1.16%	1	0.29%
Activities of travel agencies, tour operators, reservation services and activities related thereto	1	0.29%	2	0.58%
Medium-low and low technology service firms	**58**	**16.76%**	**71**	**20.52%**
Motion picture, video and television program, sound recording and music editing activities			3	0.87%
Programming activities and broadcasting of radio and television			2	0.58%
Telecommunications	1	0.29%	1	0.29%
Programming, consulting and other activities related to computer science	22	6.36%	3	0.87%
Information services	3	0.87%	1	0.29%
Investigation and development	3	0.87%		
Medium-high and high technology service firms	**29**	**8.38%**	**10**	**2.89%**
Sub-total per type of client served (B2B vs. B2C)	**214**	**61.85%**	**132**	**38.15%**
Total	**346**			

3.3.2 **Measures**

The marketing-specific IC measures utilised in the empirical studies within this dissertation were taken from the measurement scale developed in the first step of the dissertation process previously explained. In the case of the second publication (which analysed the relationship between motivation, marketing-specific HC and customer

experience), the scale used to measure employee motivation was inspired by the four dimensions suggested by Gagné et al. (2010) for the motivation continuum (i.e. intrinsic motivation, identification, introjection and external regulation), while the scale used to measure CE was adapted from Verhoef et al. (2009). Regarding the third publication (which analysed the association of marketing-specific SC with marketing innovation and market performance), the scale used for marketing innovation was based on the traditional marketing mix components, while the market performance scale was adapted from Liozu (2015). Finally, for the last publication (which analysed the association of marketing-specific RC with product/service innovation performance), the scale applied for product/service innovation performance was grounded on Griffin and Page (1993, 1996).

All marketing-specific IC components, employees' motivation and different types of marketing-related performance were measured using 7-point Likert scales (1 = strongly disagree, 7 = strongly agree or 1 = not at all, 7 = very satisfactorily), while the control variables, which are explained in detail in the following, were measured using different types of scales according to their nature. Table 2 gathers all the constructs and measures used in this study.

Table 2: Constructs and measures

Constructs and measures	*Item wording*	*Sources*
Human capital (HC)		
Human capital, customer knowledge (HCCK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople have a very good knowledge of customers'…	Indicators extracted from Saxe and Weitz (1982), Sheth et al. (1999), Homburg et al. (2011), Trainor et al. (2011) and Mu (2015).
HCCK1	Needs	
HCCK2	Expectations and/or performance requirements	
HCCK3	Satisfaction levels	
HCCK4	Personality	
HCCK5	Behaviour	
HCCK6	Circumstances	
HCCK7*	Overall, our marketing and salespeople know customers very well	
Human capital, technical knowledge (HCTK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople:	Scale adapted from Behrman and Perreault (1982), Cravens et al. (1993) and Rapp et al. (2006).
HCTK1	Know all the specifications of our products and/or services	
HCTK2	Know all the applications and functions of our products and/or services	
HCTK3	Know how our products and/or services differ from those of competitors	
HCTK4	Are able to detect causes of operating failure of our products and/or services	
HCTK5	Keep abreast of our company's product and/or service developments	
HCTK6*	Know our products and/or services very well	
Human capital, market knowledge (HCMK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)	Scale adapted from Schillewaert and

Constructs and measures	*Item wording*	*Sources*
	Our marketing and salespeople:	Ahearne (2000) and Rapp et al. (2006).
HCMK1	Have a lot of information on industry trends	
HCMK2	Are well-informed about important events in our industry	
HCMK3	Are knowledgeable about our competitors' activities	
HCMK4	Keep abreast of the marketing strategies of our competitors	
HCMK5*	Are an excellent source of competitive information	
Human capital, educational background and experience (HCEBE)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople:	Self-developed scale, based on educational background and experience as key ingredients of human capital in traditional IC literature, e.g. Bontis (1998) and Wang & Chang (2005).
HCEBE1	Have a Marketing and Sales educational background	
HCEBE2	Have an updated knowledge of new marketing concepts, tools and techniques (e.g. digital marketing, social media, etc.)	
HCEBE3	Have a high command of the languages needed to perform their work.	
HCEBE4	Have extensive professional experience in the marketing and sales domain	
HCEBE5	Have an extensive professional experience in the industry	
HCEBE6*	Have a solid educational background and experience to perform their job	
Human capital, marketing-related skills (HCMS)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople have excellent…	Indicators extracted from Behrman and Perreault (1982), Spiro and Weitz (1990), Cravens et al. (1993), Sujan et al. (1994), Schillewaert and Ahearne (2000), Rapp et al. (2006), Piercy et al. (2009) and Guesalaga (2016).
HCMS01	Targeting skills (i.e. the ability to focus on the 'right' customers or those with the highest potential)	
HCMS02	Adaptive skills	
HCMS03	Problem-solving skills	
HCMS04	Communication skills	
HCMS05	Planning and organisational skills	
HCMS06	Expenditure management skills	
HCMS07	IT skills	
HCMS08	Social media management skills (e.g. Twitter, Facebook, LinkedIn, Google+, YouTube)	
HCMS09	Teamwork skills	
HCMS10	Creativity	
HCMS11*	In overall, our marketing and salespeople have a high command of the skills needed to perform their job	
Structural capital (SC)		
Structural capital, marketing-specific IT capital (SCIT)	Rate the extent to which data processed by your company's marketing-related IT tools allow you to (1 = not at all, 7 = very satisfactorily):	Self-developed scale, based on knowledge outputs offered by different marketing-related IT solutions existing in the market [e.g. customer relationship
SCIT01	Identify potential new customers	
SCIT02	Identify your customers' interests and concerns	
SCIT03	Analyse your customers' sentiments and emotions	
SCIT04	Identify patterns of customer behaviour	

Constructs and measures	*Item wording*	*Sources*
SCIT05	Track your customers' journey	management (CRM), customer experience management software, customer journey tracking software, social media management software, marketing intelligence software, etc.]
SCIT06	Analyse customers' profitability	
SCIT07	Identify customer groups and/or segments	
SCIT08	Identify top industry insiders and influencers	
SCIT09	Identify market trends	
SCIT10	Analyse product and/or service performance	
SCIT11	Identify opportunities for product/service improvement and/or development	
SCIT12	Analyse the performance of your marketing and sales staff	
SCIT13*	In overall, our marketing-related IT tools generate very useful and relevant knowledge	
Structural capital, marketing-specific organisational memory (SCOM)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)	Self-developed scale, based on knowledge management (KM) general literature, e.g. Nelson & Winter (1982), Frambach et al. (2003), Argote (2006), Dalkir (2011), Murray et al. (2011) and O'Dell & Hubert (2011).
SCOM1	We have well-established marketing routines and procedures	
SCOM2	We have an updated and easily accessible record (in whatever format: written, video or podcast) of sales and marketing best practices and lessons learned	
SCOM3	We have updated and easily accessible information records on key projects, deals and/or campaigns so employees can reuse them when needed	
SCOM4	We have a complete and updated 'who knows what' directory so employees can easily find the right expert to take advice from when needed	
SCOM5	We have updated, relevant and easily accessible information records about customers	
SCOM6	We have updated, relevant and easily accessible information records about competitors	
SCOM7	We have updated and easily accessible information about relevant trends in our markets (e.g. technological trends, regulations, social, political and economic situation)	
SCOM8*	In overall, our company has relevant documented knowledge to support its marketing and sales function	
Relational capital (RC)		
Internal relational capital, department level (IRCD)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction within your marketing and sales department(s) (e.g. regular meetings, informal talks and joint work) give rise to:	Self-developed scale based on the definition of social/relational capital (Youndt et al., 2004), marketing-specific knowledge objects (Rossiter, 2001; Kotler & Armstrong, 2018) and the specific relationship context (internal: department level).
IRCD1	New and relevant insights about customers	
IRCD2	New and relevant insights about competitors	
IRCD3	New and relevant insights about markets	
IRCD4	New and relevant insights about technological trends	
IRCD5	Shared best practices	
IRCD6	Mutual learning	
IRCD7	Effective ways to diagnose and solve problems	
IRCD8	New perspectives that challenge existing assumptions	

Constructs and measures	*Item wording*	*Sources*
IRCD9*	New and relevant knowledge to improve performance	
Internal relational capital, inter-department level (IRCID)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, informal talks and joint work) between your marketing and sales department(s) and other functions and/or departments give rise to:	Self-developed scale based on the definition of social/relational capital (Youndt et al. 2004), marketing-specific knowledge objects (Rossiter, 2001; Kotler & Armstrong, 2018) and the specific relationship context (internal: inter-department level).
IRCID1	A truly shared vision	
IRCID2	A good understanding of existing interdependencies (i.e. how our work affects and is affected by other functions and/or departments)	
IRCID3	A shared understanding of problems and challenges	
IRCID4	A shared understanding of system constraints	
IRCID5	A shared understanding of customer needs	
IRCID6	New and relevant insights about how to better integrate and/or coordinate work from different functions and/or departments	
IRCID7	Effective ways to diagnose and solve problems	
IRCID8	New perspectives that challenge existing assumptions	
IRCID9*	New and relevant knowledge to improve performance	
External relational capital (customers) (ERCC)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction with customers (e.g. regular meetings, visits, face-to-face events and joint work) give rise to:	Self-developed scale based on the definition of social/relational capital (Youndt et al., 2004), marketing-specific knowledge objects (Rossiter, 2001; Kotler & Armstrong, 2018) and the specific relationship context (external: customers).
ERCC1	A better understanding of customers	
ERCC2	A better understanding of how customers use our products and/or services	
ERCC3	The discovery of unsolved problems	
ERCC4	The discovery of improvement opportunities	
ERCC5	New and relevant insights about competitors	
ERCC6	Effective ways to diagnose and solve problems	
ERCC7	New perspectives that challenge existing assumptions	
ERCC8*	New and relevant knowledge to improve performance	
External relational capital (other external actors) (ERCO)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, face-to-face events and joint work) between marketing and sales people and other external actors (e.g. regulators, suppliers, researchers, competitors…) give rise to:	Self-developed scale based on the definition of social/relational capital (Youndt et al. 2004), marketing-specific knowledge objects (Rossiter, 2001; Kotler & Armstrong, 2018) and the specific relationship context (external: other external actors).
ERCO1	New and relevant insights about markets	
ERCO2	New and relevant insights about technological trends	
ERCO3	New and relevant insights about such external actors	
ERCO4	The discovery of new opportunities	
ERCO5	The discovery of potential threats	
ERCO6	The discovery of new and relevant practices that could be adopted by the company	
ERCO7	Effective ways to diagnose and solve problems	

Constructs and measures	*Item wording*	*Sources*
ERCO8	New perspectives that challenge existing assumptions	
ERCO9*	New and relevant knowledge to improve performance	
Employees' motivation (MOTIV)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and sales staff:	Based on the four dimensions suggested by Gagné, Forest, Gilbert, Aubé, Morin and Malorni (2010) for the motivation continuum: intrinsic motivation, identification, introjection and external regulation.
MOTIV1	Enjoy their job very much	
MOTIV2	Strongly identify with the company	
MOTIV3	Really want to succeed in their job	
MOTIV4	Are very satisfied with their salary	
MOTIV5*	Are highly motivated	
Customer experience (CE)	Compare your company performance vis-à-vis competitors (as perceived by customers) in the following fields (1 = much worse, 7 = much better)	Based on Verhoef, Lemon, Parasuraman, Roggeveen, Tsiros and Schlesinger (2009).
CE1	Customer experience during product/service search and selection	
CE2	Customer experience during the purchase phase	
CE3	Customer experience during the use phase	
CE4	Customer experience during the aftersales phase	
CE5*	Overall customer experience	
Marketing innovation (MI)	Compare your company performance vis-à-vis competitors in the following innovation domains (1 = much worse than competitors, 7 = much better than competitors):	Self-developed scale based on the traditional marketing mix components.
MI01	Innovation in pricing	
MI02	Innovation in product/service presentation (design, image, packaging)	
MI03	Innovation in product/service distribution	
MI04	Innovation in communication	
MI05*	Innovation in marketing methods as a whole	
Market performance (MP)	Rate your company performance relative to its major competitors in the following areas (1 = much worse than competitors, 7 = much better than competitors):	Based on Liozu (2015).
MP01	Acquisition of new customers	
MP02	Customer retention	
MP03*	Overall market performance	
Product/service innovation performance (PSIP)	Compare your company's performance with that of competitors regarding the following items related to product/service innovation performance (1 = much worse than competitors, 7 = much better than competitors):	Based on product/service innovation measures by Griffin and Page (1993, 1996).
PSIP1	Customers' acceptance of new or improved products and/or services	
PSIP2	Revenue growth due to new or improved products and/or services	
PSIP3	Development costs of new or improved products and/or services	
PSIP4	Time to market for new or improved products and/or services	

Constructs and measures	*Item wording*	*Sources*
PSIP5	Profitability of new or improved products and/or services	
PSIP6*	Product/service innovation performance as a whole	

*Summary indicator for convergent validity assessment

The following control variables were deemed to prevent elements different from the ones included in the study from inferring the results: company size (measured with the natural logarithm of the number of employees), industry (manufacturing versus service firms), technology intensity (medium-high or high-technology firms versus medium-low or low technology companies), customer type (B2B versus B2C firms), educational background and experience (despite being an HC component, in publication 2, it was treated as a control variable) and company age (measured by means of its year of foundation).

Regarding company size, compared to small organisations, large corporations have more possibilities to invest in different types of resources that could enhance CE or facilitate marketing and product/service innovation, even though smaller firms could be more agile to innovate (Nooteboom, 1994; Buenechea-Elberdin et al., 2018). Regarding the manufacturing versus service distinction, the provision of service involves interacting with customers in a closer way and implies a higher customisation compared to the delivery of manufactured goods (Kianto et al., 2010), which may affect the ability to provide satisfactory CEs. Moreover, previous research highlights that the propensity to innovate depends on the industry where the firm operates (i.e. manufacturing versus service) (Lee, 2005; Jiang et al., 2012). Regarding technology intensity, high-tech firms may generate more sophisticated CEs and are more prone to innovate compared with low-technology firms (Eurostat, 2020). Given the above characteristics, company size, industry and technology intensity were included as control variables in publications 2, 3 and 4.

Furthermore, particular features of B2C companies compared with B2B firms also influences differently on marketing-related performance. For instance, B2C firms tend to adopt a more precise and professional marketing and sales approach than B2B companies (Kotler et al., 2006), which may increase their possibilities to succeed in the marketing and sales domain. Additionally, while the nature of consumer products may facilitate the generation of marketing innovations, the higher visibility of such products (Kotler et al., 2006) may also facilitate identifying opportunities for product/service innovation. Thus, while in publications 2 and 3 customer type (i.e. B2B versus B2C) was included as a control variable, in publication 4, it was explored as a moderator variable.

Moreover, publication 2 incorporated educational background and experience as a control variable because it was expected to be an important antecedent of the remaining marketing-specific HC components besides employees' motivation. Finally, publications 3 and 4 also included company age as a control variable considering that the younger the company, the more it is prone to innovation and the lower its inertia degree (Avermaete et al., 2004). All these control variables provided additional assurances for the results.

3.3.3 **Statistical analysis**

SPSS software version 25 and SmartPLS 3.2.8 software for structural equation modelling (SEM) based on partial least squares (PLS) were used to analyse the data collected

through the structured survey. While SPSS was utilised to conduct the descriptive analyses, PLS-based SEM was used to evaluate the quality of the measurement models and to verify the hypotheses proposed. PLS-based SEM is the right choice when composite measurement applies, as is the case for this study (Sarstedt et al., 2016; Henseler, 2017). Research hypotheses included three types of relationships: direct relationships, mediation relationships and moderation relationships. The following paragraphs explain the models built for each of the articles along with the analyses conducted.

The models developed and tested in the three empirical publications collected the association of a particular type of marketing-specific IC (i.e. HC, SC or RC) with specific types of marketing-related performance. In publication 2, for instance (Table 3), the association between employee motivation, marketing-specific HC components and CE was tested. In this case, marketing and sales employees' motivation was regarded as an antecedent of marketing-specific HC (except educational background and experience), and marketing-specific HC components were directly linked to CE. Hence, marketing-specific HC was suggested to mediate the relationship between employees' motivation and CE. In this publication, company size, industry, technology intensity, customer type and educational background and experience were considered as control variables.

In publication 3 (Table 3), marketing-specific SC, marketing innovation (i.e. innovation in marketing mix components) and market performance were combined in a mediated model, suggesting that marketing innovation mediates the relationship between marketing-specific SC and market performance. Moreover, company size, age, industry, technology intensity and customer type were incorporated as control variables.

In publication 4 (Table 3), the association of marketing-specific RC with product/service innovation performance was proved. Precisely, marketing-specific external RC (customer-related) was regarded as an antecedent of the remaining components (marketing-specific internal RC at the department and inter-department levels and external RC referring to other external actors). The latter were directly linked to product/service innovation performance, thus mediating the association of the external marketing-specific RC (customer-related) with product/service innovation performance. Moreover, the moderating role of firm type according to the customers served (B2B versus B2C) was assessed. Finally, company size, year of foundation, industry and technology intensity were included as control variables.

Table 3: Research questions, publications, variables included and statistical analyses

Research question	Publication and focus	Variables included	Statistical analyses
What are the knowledge resources making up marketing-specific IC?	Publication 1: To identify and classify the knowledge resources that shape IC within the marketing and sales function, and to develop and validate a related scale to demonstrate its applicability.	Marketing-specific IC components: – Marketing-specific HC – Marketing-specific SC – Marketing-specific RC	– Scale validation, SEM based on PLS – Descrip-tive analyses
What is the degree of association between marketing-specific HC, motivation and customer experience?	Publication 2: Deepen into the role of marketing and sales employees' knowledge resources in the generation and delivery of superior customer experiences, and into the motivational antecedents of knowledge acquisition and development.	Marketing-specific HC sub-components: – Marketing and sales employees' customer knowledge (MeV) – Marketing and sales employees' technical knowledge (MeV) – Marketing and sales employees' market knowledge (MeV) – Marketing and sales employees' marketing-related skills (MeV) Employees' motivation (IV) Customer experience (DV)	– Descrip-tive analyses – SEM based on PLS
What is the degree of association between marketing-specific SC, marketing innovation and market performance?	Publication 3: To analyse the influence of marketing-specific SC on marketing innovation and market performance.	Marketing-specific SC sub-components: – IT capital (IV) – Organisational memory (IV) Marketing innovation (MeV) Market performance (DV)	– Descrip-tive analyses – SEM based on PLS
What is the degree of association between marketing-specific RC components and product/service innovation performance?	Publication 4: To analyse marketing departments' main role in accessing internal and external knowledge resources to reach improved product and service innovation performance.	Marketing-specific RC sub-components: – Internal RC department level (MeV) – Internal RC inter-department level (MeV) – External RC customer-related (IV) – External RC other agents (MeV) Product/service innovation performance (DV) Customer type (MoV)	– Descrip-tive analyses – SEM based on PLS

Independent variable (IV); dependent variable (DV); mediating variable (MeV); moderating variable (MoV)

Conducting statistical analysis by PLS-based SEM includes two stages: the assessment of the measurement model to ensure that all the constructs and items included are reliable and of good quality, and the assessment of the structural model in which the relationships established among constructs are tested (Barclay et al., 1995).

Regarding the first phase, the researcher needs to first analyse convergent validity, which requires redundancy analysis (Hair et al., 2017). As explained earlier, all the constructs included in the survey incorporated a summary indicator to calculate the correlation between this indicator and the composite, which must be 0.707 or higher (Hair et al., 2017).

Second, the researcher needs to consider the existence of collinearity issues that can result in potential problems in the estimation of indicators' weights. Indeed, collinearity guides the decision regarding the type of composite to be used (mode 'A' or mode 'B'). Mode 'A' composites imply calculating indicators' weights using simple correlations, while mode 'B' composites involve calculating such weights using multiple regression. The latter option allows assessing the relative relevance of each indicator within the composite when it comes to maximising the amount of variance of the dependent variables. For this reason, mode 'B' composites constitute the preferred option. However, if indicators within a composite happen to be highly interrelated, this could cause unexpected reversed signs in the indicators' weights. Faced with these cases, mode 'A' composites should be applied (Rigdon, 2016; Henseler, 2017), even though this prevents the researcher from assessing the relative relevance of each indicator. Ideally, variance inflation factor (VIF) values should be below three (Hair et al., 2019).

Finally, in the cases of constructs with a mode 'B' composite, the indicators' significance and relevance should be evaluated. To do so, researchers should check both indicators' weights, which determine the relative contribution of each indicator to its construct, and indicators' loadings, which refer to an indicator's absolute contribution (Benítez et al., 2020). For those items presenting non-significant weights, researchers should verify if their composite loadings are statistically significant. When an item presents both no significant weight and loading estimates should be dropped from the construct (Benítez et al., 2020). These was tested using a one-tailed 5,000 sub-sample bias-corrected and accelerated (BCA) bootstrap (Hair et al., 2017).

As far as the results from the measurement model evaluation are concerned, in publication 4, all the constructs under study presented appropriate convergent validity, while in publications 2 and 3, one construct presented a lower correlation than the threshold. However, as the correlations obtained were extremely close to the suggested threshold, the models did not suffer any changes. Regarding collinearity issues, while in publication 3 all indicators presented lower VIF values than three, and thus mode 'B' composites were applied in all cases, in publications 2 and 4, several indicators exceeded the threshold value. For the constructs of these indicators, the mode 'A' composite was applied. Finally, for mode 'B' composites, regarding the indicators' significance and relevance assessment, although not all indicators showed statistically significant weights, their respective loadings were significant. Therefore, none of the indicators were removed from their respective constructs.

After guaranteeing the quality of the measurement models, in phase 2, the structural model was assessed. First, collinearity tests were performed in the inner model to rule out any potential bias in path coefficients due to the possible existence of collinearity among the predictor constructs (Hair et al., 2017). This implies that VIF values should be lower than three. Second, a one-tailed 5,000 sub-sample BCA bootstrap was conducted to verify the strength of the established relationships between the constructs. Third, the coefficient of determination (R^2 value) of the dependent variables was analysed, which represents a measure of in-sample predictive power (Hair et al., 2017). Additionally, for the

moderation effect tested in publication 4, a multi-group analysis was conducted using the PLS-MGA approach (Henseler et al., 2009) to identify potential significant variations between B2B and B2C companies in their path coefficients.

4 Summary of the publications and review of the results

This chapter offers a summary of the four publications making up this study. Each sub-section describes the background and objectives and discusses the results and contributions for each publication.

4.1 Publication 1: Marketing-specific intellectual capital: Conceptualization, scale development and empirical illustration

4.1.1 Background and objective

The IC of a company contributes favourably to the development of an organisation's competitive advantage (Nahapiet & Goshal, 1998; Sullivan, 1999; Youndt et al., 2004; Reed et al., 2006). Organisations need to develop strategies that take advantage of this source of superior returns. Early IC literature made the effort to logically structure the IC components and respective specific elements to uncover them and analyse their influence on different types of performance.

Following the effort made by several studies to classify intangible and knowledge resources into different categories (the three-component classification that distinguishes between human, structural and relational resources is the most widespread one), many studies have tried to analyse the association of each of the IC components with organisational performance. The problem in these studies is that the scales used, which are usually based on the most influential IC scales such as the ones developed by Bontis (1997) or Youndt et al. (2004), present several deficiencies and inconsistencies regarding the indicators included to measure IC, as well as in the methodological approach chosen. Consequently, IC measurement presents a need for improvement in relevance and consistency.

In an attempt to overcome the abovementioned issue, a new IC scale was developed considering the contextual quality of knowledge, meaning that measurement scales applied in particular contexts must reflect the specific knowledge resources that may be of particular interest in those contexts. As a first approximation, the marketing and sales function was chosen as a significant context to focus, given its key role in adding and creating value for customers. Therefore, the objectives of this study were trifold: to identify and categorise the knowledge resources that make up IC within the marketing and sales departments, to create and validate a related scale and to demonstrate the scale's feasibility empirically.

4.1.2 Results and contribution

The major result of this study was the development of the marketing-specific IC measurement scale as such (comprising three main categories, nine sub-categories and 80 items), together with its validation. The proposed measurement scale is a more appropriate, suitable and executable tool for practitioners as it provides a complete auto evaluation instrument with which marketing and sales managers can conduct a detailed diagnosis of the status of knowledge resources corresponding to their function, which subsequently can provide guidelines for decision-making and strategy development.

Additionally, the survey that was conducted to validate the scale was also used to empirically illustrate a diagnosis of the marketing-specific IC architecture in the Spanish context. Table 4 presents the descriptive statistics and correlations.

Table 4: Descriptive statistics and correlations (construct level)

Variable	*Mean*	*S.D.*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. HCCK	5.48	0.97										
2. HCTK	5.75	1.00	0.648**									
3. HCMK	5.56	0.94	0.532**	0.523**								
4. HCEBE	5.50	1.00	0.542**	0.475**	0.452**							
5. HCMS	5.55	0.89	0.570**	0.524**	0.549**	0.684**						
6. SCIT	4.77	1.22	0.550**	0.489**	0.435**	0.455**	0.546**					
7. SCOM	4.44	1.23	0.472**	0.442**	0.437**	0.506**	0.556**	0.685**				
8. IRCD	5.17	1.07	0.491**	0.469**	0.463**	0.402**	0.591**	0.492**	0.551**			
9. IRCID	5.13	1.18	0.559**	0.484**	0.423**	0.443**	0.610**	0.526**	0.612**	0.745**		
10. ERCC	5.51	1.04	0.502**	0.437**	0.396**	0.390**	0.489**	0.379**	0.425**	0.628**	0.604**	
11. ERCO	5.12	1.17	0.429**	0.344**	0.392**	0.438**	0.501**	0.492**	0.476**	0.548**	0.529**	0.555**

** Correlation is significant at the 0.01 level (2-tailed). HCCK: Human capital, customer knowledge; HCTK: human capital, technical knowledge; HCMK: human capital, market knowledge; HCEBE: human capital, educational background and experience; HCMS: human capital, marketing skills; SCIT: structural capital, IT capital; SCOM: structural capital, organisational memory; IRCD: internal relational capital at the department level; IRCID: internal relational capital at the inter-department level; ERCC: external relational capital (customer-related); ERCO: external relational capital regarding other external actors.

According to the results presented in Table 4, HC was the most developed marketing-specific IC component in Spanish firms with over 100 employees, followed by RC and finally SC. As for marketing-specific HC, technical knowledge exhibited the highest degree of development. The remaining sub-categories (customer knowledge, market knowledge, educational background and experience and marketing skills) were slightly behind technical knowledge and were very close to each other. Regarding marketing-specific RC, customer capital was the most outstanding sub-category within this dimension. The other types of RC showed a very similar level to each other, although the distance vis-a-vis customer capital was larger than the one found between technical knowledge and the other sub-categories within HC. Finally, regarding SC, marketing-specific IT capital showed a better position than organisational memory, both being quite far away from the remaining IC sub-categories in the scale. Overall, this proposes that people constitute the main foundation of marketing-specific IC, meaning that the development of the other components relies on employees' knowledge and skills degree of development.

Apart from offering an overall picture, T-tests were conducted among different groups of firms. Specifically, B2B and B2C firms, manufacturing and service companies and high-tech and low-tech firms were compared (Table 5).

Table 5: T-tests among different groups of firms (construct level)

Variable	*Customer type*	*N*	*Mean*	*SD*	*Sig. of mean difference*	*Industry type*	*N*	*Mean*	*SD*	*Sig. of mean difference*	*Technology intensity*	*N*	*Mean*	*SD*	*Sig. of mean difference*
HCCK	B2B	214	5.44	0.96	0.389	M	179	5.56	0.88	0.134	HT	103	5.41	0.98	0.397
	B2C	132	5.54	0.97		S	167	5.40	1.05		LT	243	5.51	0.96	
HCTK	B2B	214	5.65	1.04	**0.012**	M	179	5.71	0.96	0.402	HT	103	5.59	1.07	**0.055**
	B2C	132	5.93	0.91		S	167	5.80	1.04		LT	243	5.82	0.97	
HCMK	B2B	214	5.48	0.94	**0.056**	M	178	5.53	0.90	0.504	HT	103	5.62	0.92	0.469
	B2C	131	5.68	0.93		S	167	5.60	0.98		LT	242	5.54	0.95	
HCEBE	B2B	214	5.43	0.97	0.112	M	179	5.47	0.92	0.512	HT	103	5.66	0.89	**0.053**
	B2C	132	5.61	1.05		S	167	5.54	1.08		LT	243	5.43	1.04	
HCMS	B2B	213	5.50	0.87	0.180	M	178	5.44	0.88	**0.012**	HT	102	5.53	0.92	0.742
	B2C	132	5.64	0.91		S	167	5.68	0.87		LT	243	5.56	0.87	
SCIT	B2B	214	4.65	1.25	**0.016**	M	178	4.73	1.21	0.543	HT	103	4.59	1.26	**0.077**
	B2C	131	4.97	1.13		S	167	4.81	1.22		LT	242	4.84	1.19	
SCOM	B2B	214	4.32	1.21	**0.024**	M	179	4.30	1.23	**0.034**	HT	103	4.38	1.22	0.534
	B2C	132	4.63	1.25		S	167	4.59	1.22		LT	243	4.47	1.24	
IRCD	B2B	214	5.08	1.12	**0.041**	M	179	5.14	1.07	0.605	HT	103	5.10	1.09	0.388
	B2C	132	5.32	0.99		S	167	5.20	1.08		LT	243	5.21	1.07	
IRCID	B2B	214	5.01	1.22	**0.018**	M	179	5.08	1.20	0.502	HT	103	5.01	1.30	0.261
	B2C	131	5.32	1.10		S	166	5.17	1.16		LT	242	5.18	1.13	
ERCC	B2B	213	5.51	1.02	0.987	M	179	5.55	0.94	0.472	HT	102	5.58	0.96	0397
	B2C	131	5.51	1.06		S	165	5.47	1.13		LT	242	5.48	1.07	
ERCO	B2B	211	5.10	1.16	0.775	M	178	5.13	1.10	0.819	HT	102	5.25	1.06	0.179
	B2C	131	5.14	1.19		S	164	5.10	1.25		LT	240	5.06	1.21	

M: manufacturing; S: services; HT: high technology; LT: low technology.

Group comparison between B2B and B2C firms shows that, in general, marketing-specific IC was more developed in B2C firms. The largest differences corresponded to technical knowledge and market knowledge within HC, to SC dimensions and to internal RC. In the case of manufacturing and service companies, only two sub-categories showed significant differences: marketing skills and organisational memory. In both cases, the values found were significantly larger in service firms. Finally, regarding technology intensity, marketing and sales employees in low-tech companies showed higher technical knowledge, even though their educational background and experience was lower than for high-tech firms' employees. Unsurprisingly, the degree of development of marketing-specific IT capital was notably higher in high-tech companies.

This publication has made a significant contribution to the IC literature by unprecedentedly adapting the general IC framework to a particular function (i.e. marketing and sales), which allows for a more significant and detailed evaluation of company knowledge resources. In this regard, the method employed to define the scale could also be utilised to develop practical IC models for more contexts. Furthermore, from a methodological viewpoint, the article provides a significant reflection on the suitable measurement model that should be applied in IC studies, considering the type of conceptual variable that it represents: designed conceptual variable.

4.2 Publication 2: Putting knowledge to work: The combined role of marketing and sales employees' knowledge and motivation to produce superior customer experience

4.2.1 Background and objective

CE is getting considerable attention from executives as it is considered the previous stance of customer loyalty (Roy, 2018). Even if it could be said that organisations compete on the experience delivered to their customers rather than on the quality of products and/or services offered, the studies analysing the IC-performance linkage have not considered CE as a type of performance under study. Customers interact with firms through customer journeys that are increasingly complex (Lemon & Verhoef, 2016) and for which knowledgeable and skilful employees are equally more relevant.

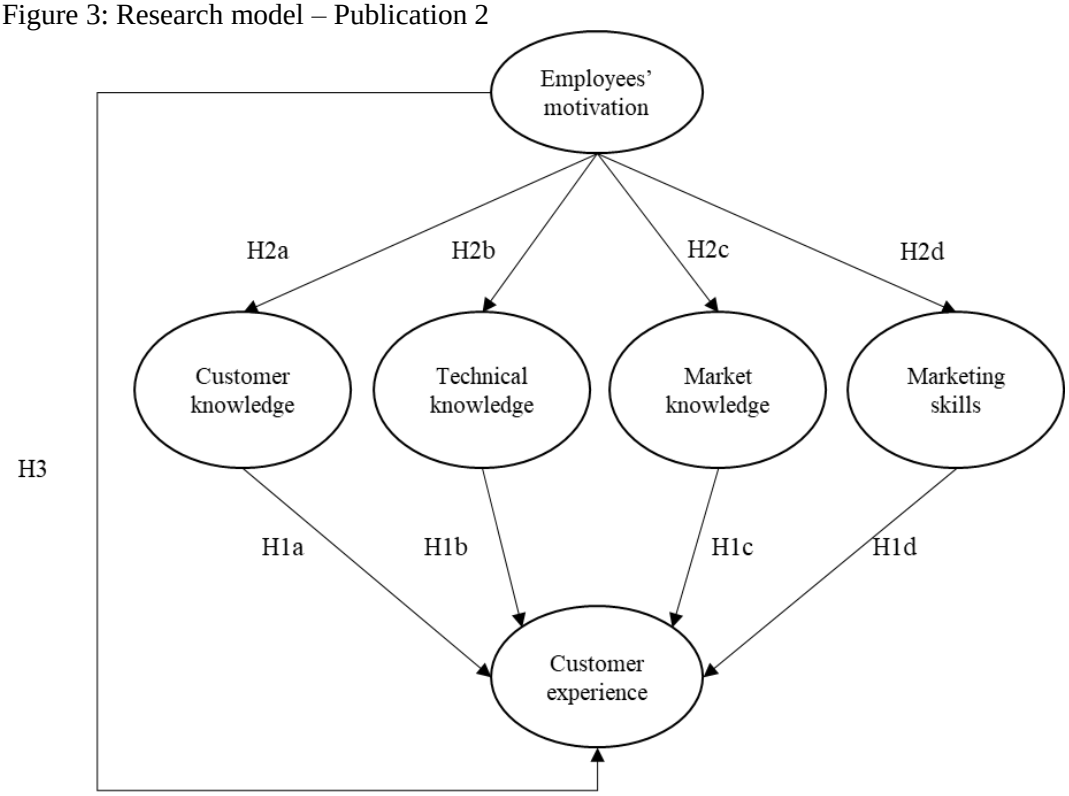
Employees from the marketing and sales function are the ones most involved in the delivery of CE. According to Mosley (2007), employees' knowledge and expertise, i.e. their HC, significantly influence the CE delivery. However, the role of employees in the generation of positive CE has been considerably ignored in extant research (Lemke et al., 2011; Waqas et al., 2020). Despite some empirical evidence (Grace & O'Cass, 2004; Arnold et al., 2005), there are no studies that specifically analyse what attitudes, behaviours, knowledge and expertise of marketers would help to generate a more positive response from customers, thus increasing their CE. Consequently, marketing and sales managers lack guidance to identify the level of HC required for employees in their function or the type of HRM practices to apply.

Additionally, motivation could be considered a driving force that encourages employees to acquire and develop knowledge and improve other types of behaviours that result in a higher CE. Previous studies have proved that motivation is linked to knowledge-related behaviour (Colquitt et al., 2000; Noe et al., 2010; Lee et al., 2016). Therefore, motivated marketing and sales employees will be more willing to acquire, use and share knowledge

about customers, products/services and the markets where their organisation operates to fulfil customer expectations and generate positive CEs.

Considering the above, the second publication is aimed at thoroughly analysing the mediating role of marketing-specific HC in the relationship between employee motivation and positive CE, thus considering that motivation indirectly influences CE performance by encouraging the acquisition of knowledge and skills by marketing and sales employees. Figure 3 depicts the research model under study.

Figure 3: Research model – Publication 2



4.2.2 **Results and contribution**

Table 6 shows the hypotheses tested and the results obtained, while Figure 4 depicts the path coefficients corresponding to the model under study. As can be observed, all the hypotheses suggested except H1b and H1c were supported, which means that marketing and sales employees' technical knowledge and market knowledge were not significantly related to CE performance. Thus, customer knowledge and marketing-related skills were the only marketing-specific HC sub-components that were related positively and significantly to CE.

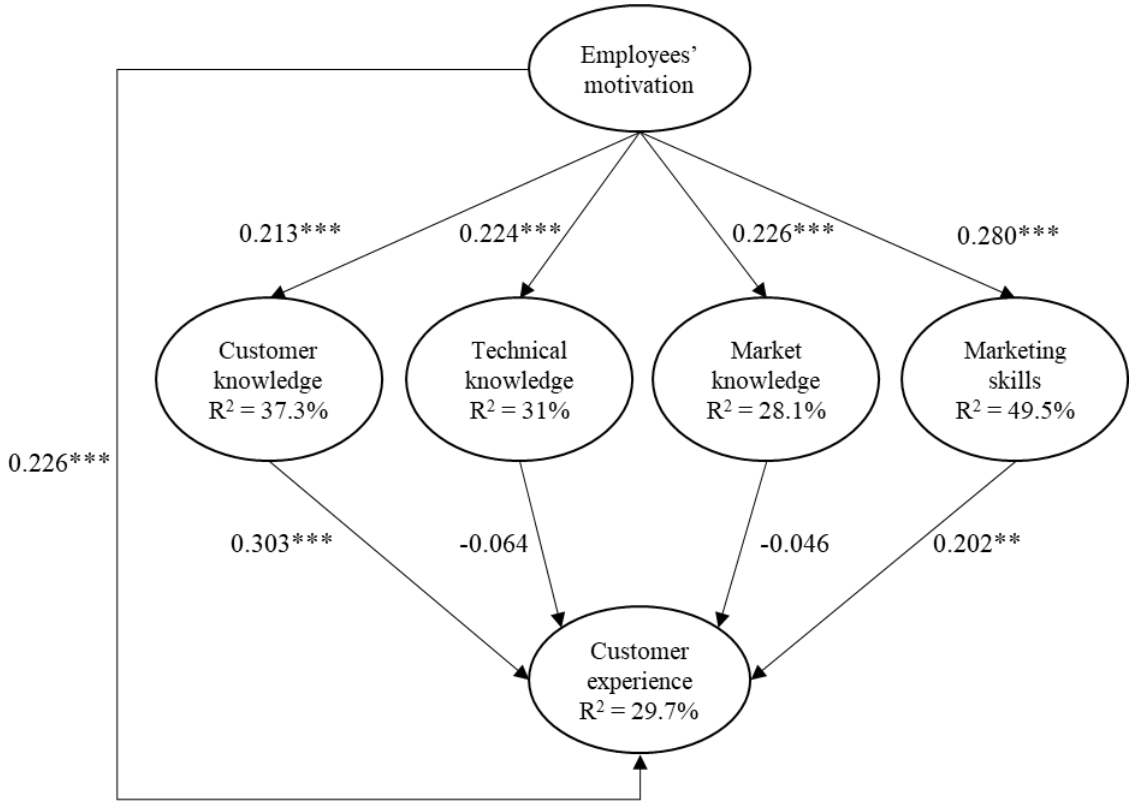
Focusing on marketing and sales employees' motivation, the results obtained show that it constitutes an essential driver when it comes to enhancing marketers' all kinds of knowledge and skills (H2a, H2b, H2c and H2d were supported). Moreover, motivation also exerts a significant direct influence on CE performance (i.e. H3 was also supported), meaning that beyond its positive input in knowledge acquisition in the workplace, it also endorses additional attitudes and behaviours that contribute to a better CE.

Regarding the amount of variance explained, the following values were obtained: 37.3% for customer knowledge, 31% for technical knowledge, 28.1% for market knowledge, 49.5% for marketing skills and 29.7% for CE.

Table 6: Hypotheses and results – Publication 2

Reasoning	Hypothesis	Result
Marketing and sales play a key role in adding and creating value for customers. The knowledge and skills of marketing and sales employees are highly important in providing positive CEs.	H1. Marketing-specific human capital—(a) customer knowledge; (b) technical knowledge; (c) market knowledge; (d) marketing-related skills—is positively related to CE performance.	H1a, H1d supported H1b, H1c not supported
Motivated marketing and sales employees undertake greater efforts to master the required marketing-specific knowledge and skills.	H2. Marketing and sales employees' motivation is positively related to marketing-specific human capital—(a) customer knowledge; (b) technical knowledge; (c) market knowledge; (d) marketing-related skills.	Supported
Motivated employees treat customers well, make them feel important and are more able and willing to provide better experiences to customers.	H3. Marketing and sales employees' motivation is positively related to CE performance.	Supported

Figure 4: Structural model evaluation – Publication 2



†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001, one-tailed test

This publication contributed to the IC and knowledge management literature by advancing the study of the IC-performance relationship with a more detailed approach, identifying the motivational levers that make a difference in the case of the HC of the marketing and sales function, and by showing which are the specific marketing and sales employees' knowledge and skills that generate superior CE. Consequently, marketing and sales managers can use these useful guidelines to establish their knowledge and skills priorities and to shape their HRM policies.

4.3 Publication 3: Marketing-specific structural capital, marketing innovation and market performance

4.3.1 Background and objective

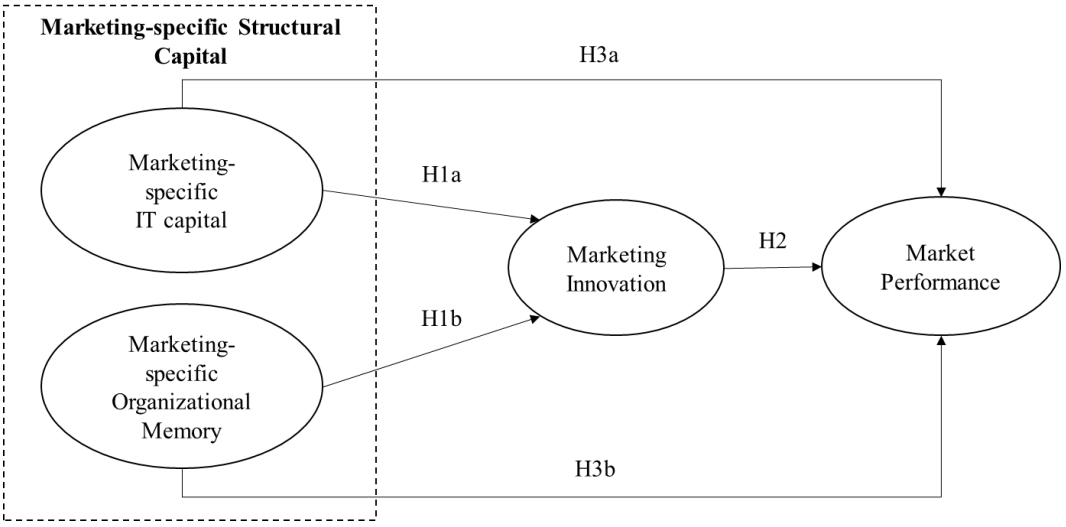
Organisations are operating in a constantly progressing business environment characterised by customers' ever-changing preferences where technology advances rapidly (Tidd & Bessant, 2009). The above situation forces companies to be innovative to survive. In this regard, while great efforts are made towards product and/or service innovation as a source of advantage to survive, other types of innovation, such as marketing innovation, are still underexplored by companies (Ren et al., 2010). Marketing innovation, which comprises 'improvements in the marketing mix' (Naidoo, 2010) with

the aim of satisfying customers' ever-changing needs more effectively, or looking for opportunities in new markets (OECD, 2005), provides organisations the ability to differentiate from their competitors and adapt to customer preferences while developing competitive advantage. Marketing innovation attracts clients and increases the demand, requiring smaller investments than technological innovation (Medrano-Sáez & Olarte-Pascual, 2016).

Among the array of potential enablers of marketing innovation, IC deserves special attention considering that innovation implicates the creation of new knowledge (Nonaka & Takeuchi, 1995; Du Plessis, 2007), combining already existing knowledge in novel ways (Sáenz & Pérez Bouvier, 2014). This linkage has been analysed by many studies relating IC with different types of innovation performance, such as product innovation (e.g. Wu et al., 2007), managerial innovation (e.g., Elsetouhi et al., 2015) or incremental and radical innovation (e.g. Subramaniam & Youndt, 2005; Wang & Chen, 2013). However, a recent structured literature review on the IC-innovation linkage by Buenechea-Elberdin (2017) showed that no previous study had analysed the association of IC with marketing innovation.

Given the spread of marketing-oriented information technology (IT) solutions together with the noteworthy opportunities that extant data analytics offer to extract marketing-related knowledge from companies' data records, as well as the importance of marketing-specific organisational memory (Walsh & Ungson, 1991), the question arises about the real impact of each type of IC in the development of marketing innovations and subsequent market performance, given the important investments that such knowledge infrastructures entail. These two elements (IT capital and organisational memory) constitute what is known as SC (Bueno et al., 2011) and, regarding this study, marketing-specific SC (i.e. all marketing-related knowledge residing in a firm's information systems, databases, documents, manuals, routines and procedures, as well as in any other physical and/or digital artefact). Hence, this study aims to examine the influence of both constituents of marketing-specific SC on marketing innovation and market performance. Table 7 presents the proposed hypotheses and a short clarification of each of them, and Figure 5 displays the structure of the model.

Figure 5: Research model – Publication 3



4.3.2 **Results and contribution**

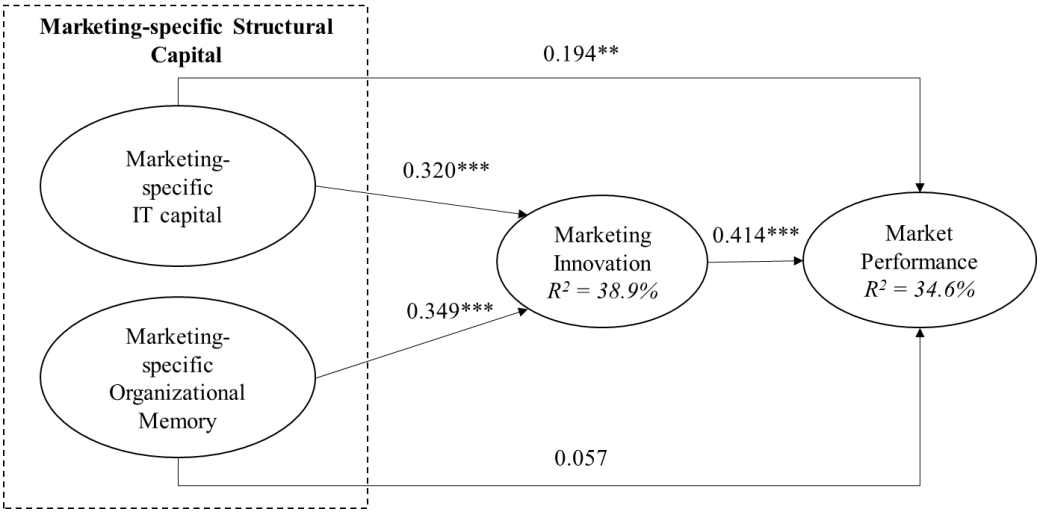
Starting with marketing innovation, both marketing-specific IT capital and organisational memory are positively and significantly related to marketing innovation. This confirms the idea that companies' preserved knowledge is a key input for incremental innovation and for marketing innovation to occur (Subramaniam & Youndt, 2005). Additionally, marketing innovation showed a positive and significant association with market performance, which supports H2.

As far as the direct effect of marketing-specific SC on market performance is concerned, organisational memory did not present a significant direct association with market performance (i.e. H3b was not supported), while the opposite holds true for the association of IT capital with market performance (i.e. H3a was supported). Nevertheless, given that the indirect effects of both marketing-specific SC components on market performance are statistically significant, this means that while in the case of IT capital, partial mediation applies, in the case of marketing-specific organisational memory, full mediation applies. Put differently, marketing-specific organisational memory positively affects market performance such that it contributes to marketing innovation, while IT capital's beneficial effect on market performance goes beyond the promotion of marketing innovation. Figure 6 presents the results of the structural model.

Table 7: Hypotheses and results – Publication 3

Reasoning	Hypothesis	Result
Organisations' preserved knowledge or SC is a fundamental input for incremental innovation, such as marketing innovation to occur.	H1. Marketing-specific structural capital—(a) IT capital; (b) organisational memory—is positively related to marketing innovation.	Supported
Marketing innovations increase a firm's sales by addressing customer needs better, opening up new markets and positioning products and/or services on the market.	H2. Marketing innovation is positively related to market performance.	Supported
Marketing-specific knowledge resources and their exploitation and coordination enable firms to develop strategies that match their market environments more effectively.	H3. Marketing-specific structural capital—(a) IT capital; (b) organisational memory—is positively related to market performance.	H3a supported H3b not supported

Figure 6: Structural model evaluation – Publication 3



†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001, one-tailed test

Focusing on the specific importance of each of the elements that constitute the constructs for marketing-specific IT capital, identifying patterns of customer behaviour constitutes the most important functionality provided by marketing-specific IT solutions (γ = 0.294). This is followed by knowledge generated regarding product/service performance (γ = 0.274), potential new customers (γ = 0.216), existing customer groups or segments (γ = 0.208) and top industry insiders and influencers (γ = 0.203). In contrast, knowledge generated on customer profitability and market trends seems to be completely irrelevant.

Regarding marketing-specific organisational memory, having updated, relevant and easily accessible information records about competitors presented the highest weight (γ = 0.355), followed by well-established routines and procedures (γ = 0.257) and updated and easily accessible information about relevant trends in the market (γ = 0.217) and also about key projects, deals and/or campaigns so that employees can reuse them when needed (γ = 0.205). By contrast, having updated and easily accessible records regarding the best practices and lessons learned, a 'who knows what' directory and updated, relevant and easily information records about customers are insignificant.

Regarding marketing innovation, although all dimensions are statistically relevant to improve market performance, innovation in pricing shows the highest weight (γ = 0.420), followed by innovation in communication (γ = 0.317) and in product/service distribution (γ = 0.302). Thus, innovation in product/service design, image and/or packaging is the least relevant, although it is still significant (γ = 0.153).

Finally, focusing on the amount of variance explained (R^2), this reached 38.9% for marketing innovation and 34.6% for market performance.

This publication contributed to the IC, marketing and innovation literatures by demonstrating that organisational knowledge in the marketing and sales domain can contribute to innovation in marketing methods and, thus, to attract and retain customers. Moreover, this study is among the first to adopt a contextual approach to IC and to show how knowledge resources regarding a particular function in the company could contribute

to firm performance, hence providing a more detailed picture about the particular knowledge resources and IT technology in which managers need to invest.

4.4 Publication 4: Putting marketing knowledge to use: Marketing-specific relational capital and product/service innovation performance

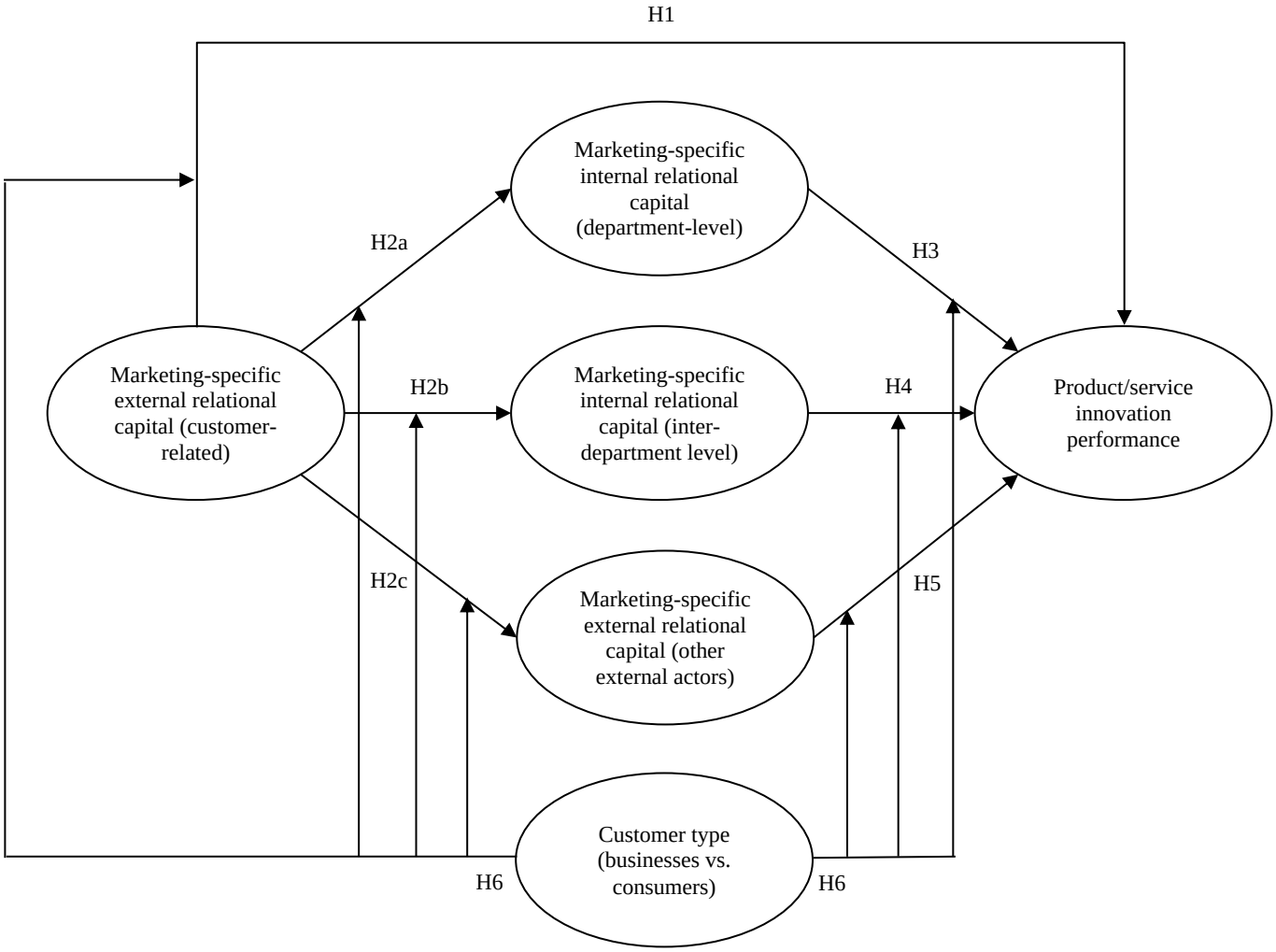
4.4.1 Background and objective

According to the innovation literature, product/service innovation is considered among the main antecedents of competitive advantage and business success. Therefore, studies have attempted to investigate key aspects and functions in which firms should improve to enhance product/service innovation performance. Although regarding innovation, the R&D department has received the most attention, lately, the contribution that the marketing and sales department makes to this capability is being increasingly highlighted (Danneels, 2007). The marketing and sales function is recognised for its responsibility to accumulate and transfer critical information for improved product and service innovation within an organisation. Considering the potential of the marketing and sales department to integrate knowledge, this publication focuses on the knowledge gathered through the different relationships that marketing and sales employees maintain with different actors —marketing-specific RC—and in its association with product/service innovation.

The knowledge required to innovate is dispersed across heterogeneous actors, meaning that firms need to assimilate both internal and external knowledge into innovation practices (Tsai & Ghoshal, 1998; Henttonen et al., 2011; West & Bogers, 2014). Extant studies have focused on demonstrating the importance of the internal and external RC to develop new products and/or services, separately (e.g. Hsu & Fang, 2009; Chen et al., 2014). Nevertheless, no studies have investigated how internal and external RC complement each other to improve product/service innovation performance. This comprises a significant research opportunity because it implies that managers lack guidelines on the knowledge exchange priorities in their internal and external relationships that help them generate innovative products and/or services matching customers' needs and preferences.

Therefore, considering the aforementioned increasing participation of the marketing and sales function in the development of products and services, this publication aims to analyse the association of the knowledge gathered internally and externally by the marketing and sales departments with product and service innovation performance. Additionally, the moderating role of customer type (i.e. businesses versus consumers) was explored due to the significant differences that exist in the way of doing marketing between B2B and B2C companies (Kotler & Armstrong, 2018). Figure 7 presents the model under study in this publication.

Figure 7: Research model – Publication 4



4.4.2 **Results and contribution**

Table 8 shows the hypotheses tested and provides a short clarification of each of them, as well as the results obtained. Figures 8, 9 and 10 show the path coefficients and explained variances for each of the samples under analysis (general, B2B and B2C).

Table 8: Hypotheses and results – Publication 4

Reasoning	Hypothesis	Result
Involving customers in the innovation process allows for the development of products with better market acceptance.	H1. Marketing-specific external RC (customer-related) is positively associated with product/service innovation performance.	No supported
When marketers share the insights gained from customers within the marketing and sales department, with people from other organisational functions and with other external actors, this provides a better foundation for innovation efforts and marketing decisions related to the introduction of new products and/or services.	H2. Marketing-specific external RC (customer related) is positively associated with marketing-specific internal RC both at the (a) department and (b) inter-department level and with (c) marketing-specific external RC regarding other external actors.	Supported
Conversation and direct ties between department members grant potential access to organisational knowledge resources and increase the ease and extent of knowledge transfer, which fosters innovation.	H3. Marketing-specific internal RC at the department level is positively associated with product/service innovation performance.	Supported
Inter-departmental integration and interaction are crucial for the creation and diffusion of product innovations.	H4. Marketing-specific internal RC at the inter-department level is positively associated with product/service innovation performance.	Supported
External networks are vital for the discovery of opportunities and testing of new ideas that complement the internal knowledge that is necessary to develop new products and/or services.	H5. Marketing-specific external RC (other external actors) is positively associated with product/service innovation performance.	Supported
B2B and B2C firms' characteristics entail important differences in terms of marketing, which may affect the knowledge integration role of the marketing and sales department in product/service innovation processes.	H6. Customer type (i.e. consumers vs. businesses) moderates the relationships between marketing-specific RC and product/service innovation performance.	Partly supported

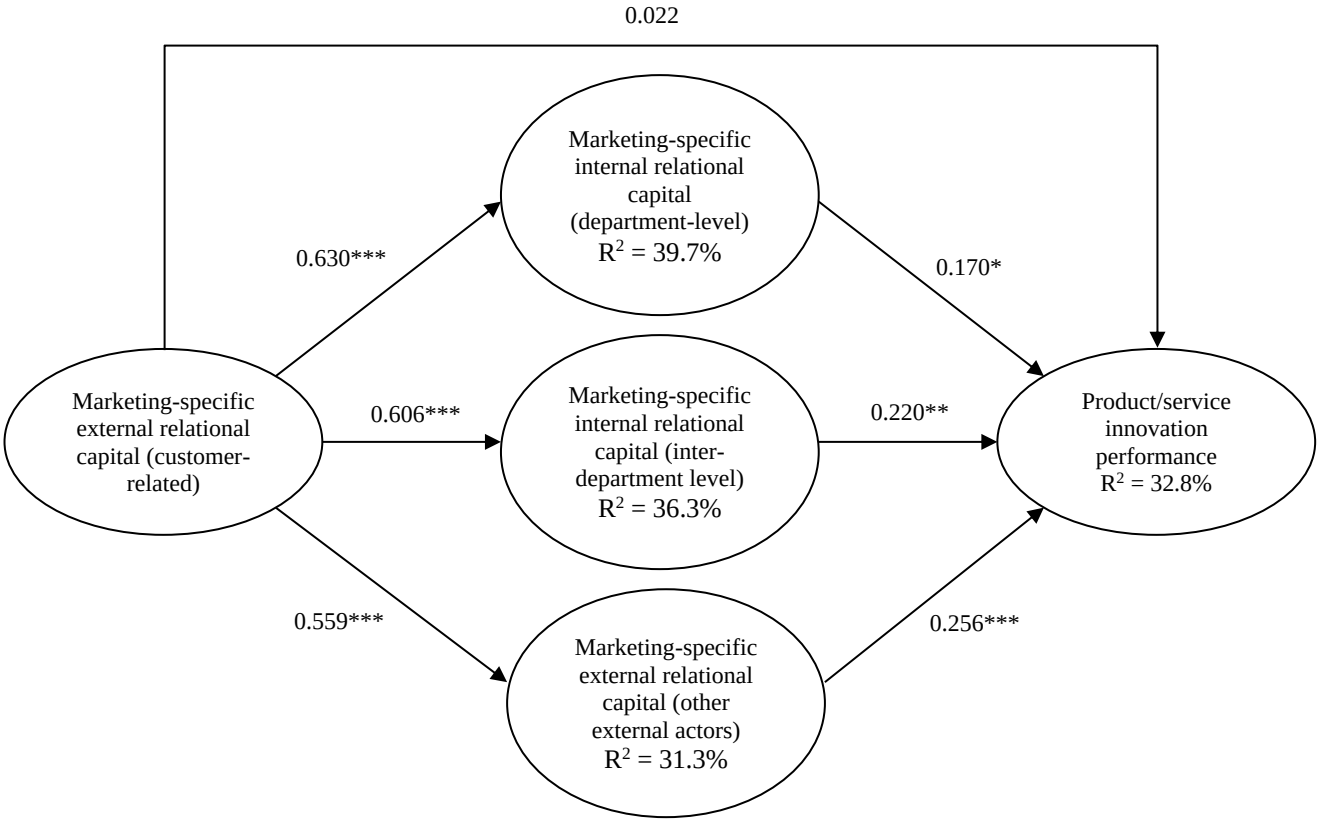
The results obtained for the whole sample showed that the direct association of external RC (customer level) with product/service innovation performance was not significant (Figure 8). Hence, hypothesis H1 was not supported. However, customer-related external RC presented a strong relationship with the other RC sub-components. Thus, support was

found for H2a, H2b and H2c. The amount of variance explained (R^2) was 39.7% for internal RC (department level), 36.3% for internal RC (inter-department level) and 31.3% for external RC (other external actors).

The direct relationship between these last three marketing-specific RC dimensions and product/service innovation performance was positive and significant in all cases. Therefore, hypotheses H3, H4 and H5 were supported. Focusing on the path coefficients, external RC (other external actors) was the sub-component presenting the largest direct relationship with product/service innovation performance (β = 0.256), followed by internal RC (inter-department level) (β = 0.220) and internal RC (department level) (β = 0.170). Regarding explanatory power, 32.8% of the variance was explained for the product/service innovation performance variable.

Considering that the indirect effects of customer-related marketing-specific external RC on product/service innovation performance via the other dimensions of marketing-specific RC proved to be statistically significant and that the direct relationship between customer-related RC capital and product/service innovation performance was non-significant, a full mediation is appreciated. Put differently, customer-related RC is associated with product/service innovation performance through its contribution to the other types of marketing-specific RC. In fact, based on the total effects, external RC (customer level) presented the strongest relationship with product/service innovation performance.

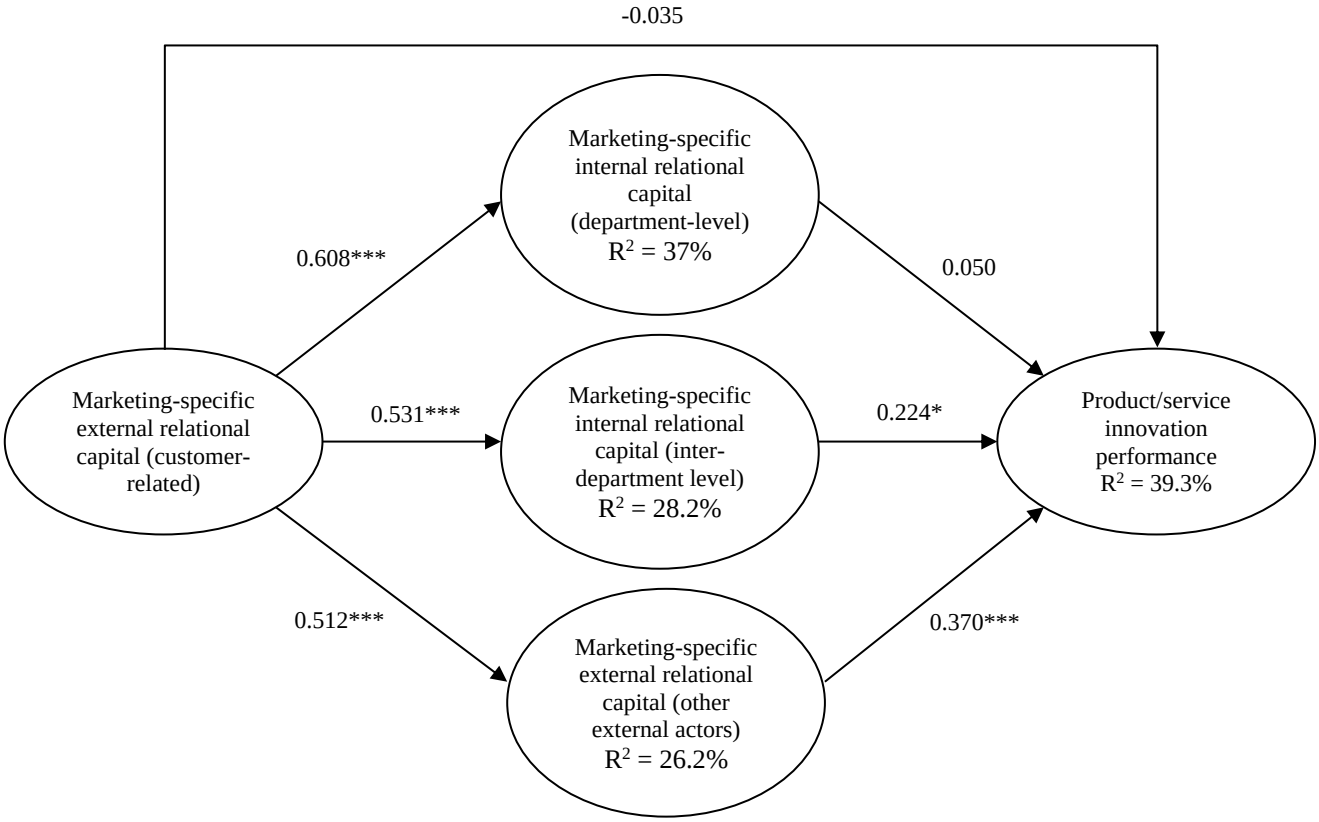
Figure 8: Structural model evaluation – Publication 4



†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001, one-tailed test

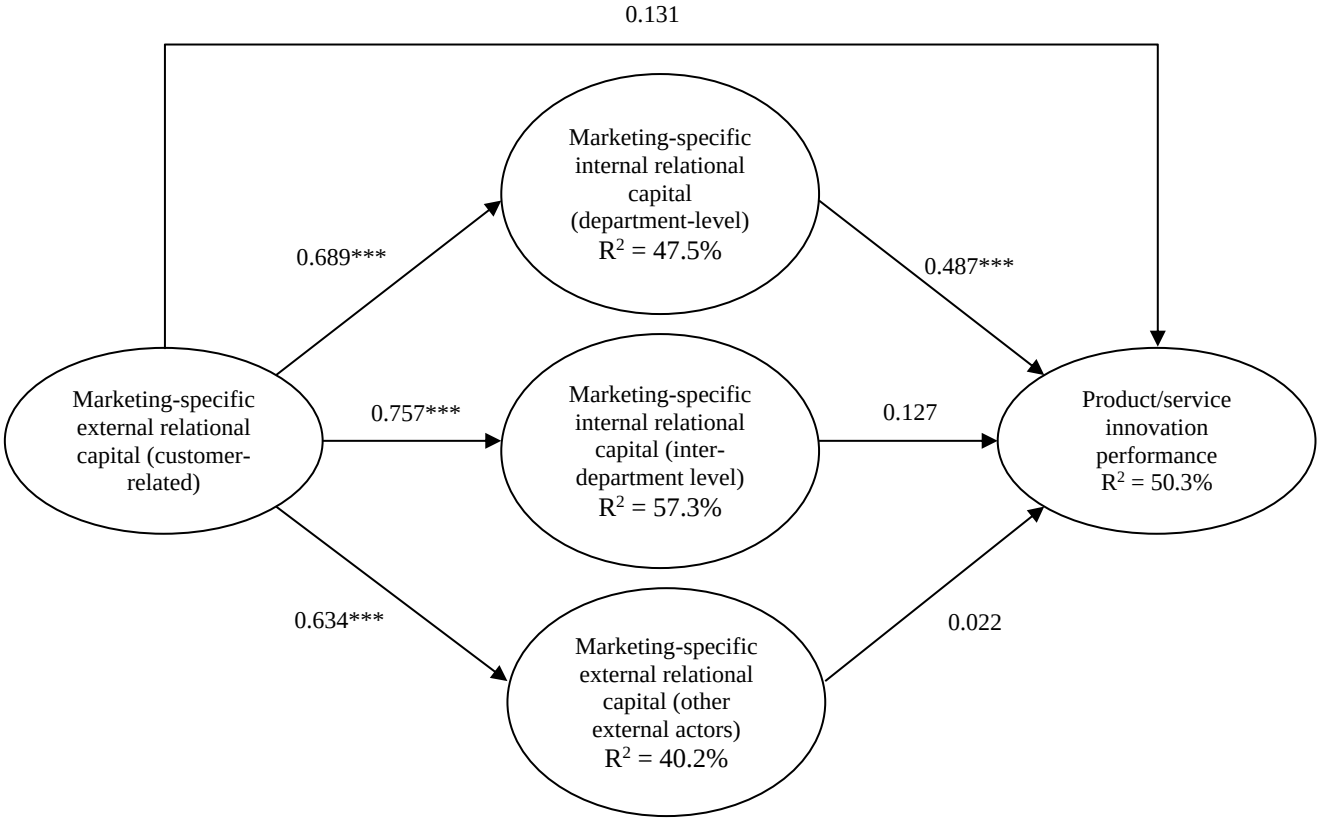
As far as the moderation effect is concerned, customer type moderated only some of the hypothesised relationships (see Figures 9 and 10 for the results obtained). In the case of B2B firms, internal RC (inter-department level) and external RC (other external actors) were directly and significantly related to product/service innovation performance, while in B2C companies, internal RC (department level) was the only sub-component that directly and significantly related to the dependent variable. Moreover, the multi-group analysis revealed that the differences in path coefficients regarding the association of both internal RC (department level) and external RC (other external actors) with product/service innovation performance were statistically significant. Furthermore, although the direct association of external RC (customer level) with the other types of RC components was statistically significant for both groups of firms, B2C companies presented stronger relationships between external RC (customer level) and internal RC (inter-department level) as well as external RC (other external actors). Finally, both groups showed positive and significant total effects of customer-related RC on product/service innovation performance. Nonetheless, this influence was much stronger in B2C companies.

Figure 9: Structural model evaluation for B2B firms – Publication 4



†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001, one-tailed test

Figure 10: Structural model evaluation for B2C – Publication 4



†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001, one-tailed test

Focusing on the explanatory power of the model, the amount of variance explained in the case of product/service innovation performance was much higher in B2C firms (50.3%) than in B2B firms (29.3%). The same happened with internal RC at the inter-department level (57.3% for B2C versus 28.2% for B2B) and external RC regarding other external actors (40.2% for B2C versus 26.2% for B2B).

This publication made a significant contribution to the marketing and management literature as it shows which are the valuable knowledge bits to be gathered through the different types of relationships in which the marketing and sales function is immersed when it comes to enhancing product/service innovation. In addition, the results showed that knowledge acquired through customer relationships is a major input for the acquisition of knowledge through other internal and external relationships. Moreover, the study discovered that depending on the customer type the firm is serving, i.e., B2B and B2C, organisations should exploit their RC following different strategies.

5 Discussion and conclusions

This study has improved the study on IC. It has developed and validated an IC measurement scale specifically tailored to the marketing and sales context, and it has analysed the association of marketing-specific IC with several types of marketing-related performance. The research began with a literature search to recognise and categorise knowledge resources that build the IC of the marketing and sales function to develop a novel marketing-specific IC scale. Once the scale was validated, three research models linking each of the marketing-specific IC main components (i.e. HC, SC and RC) and several types of marketing-related performance were built and empirically tested.

5.1 Answering the research questions

The principal research question that this study intended to answer is: How does marketing-specific intellectual capital affect companies' marketing-related performance? This question was divided into four sub-questions, which are answered below.

Publication 1 was responsible for answering the first sub-question: Which knowledge resources make up marketing-specific IC? Taking as reference the knowledge perspective of IC (Nahapiet & Ghoshal, 1998; Youndt et al., 2004; Subramaniam & Youndt, 2005), the traditional tri-component classification was adopted (Reed et al., 2006) and transferred to the marketing context. Thus, marketing-specific HC, marketing-specific SC and marketing-specific RC were distinguished. Then, marketing-specific knowledge objects were identified, namely, customers, products and/or services, market(s), the internal context of the firm, disciplinary knowledge and know-how (Kotler & Armstrong, 2018). Such knowledge objects encompass both 'information-type' or explicit knowledge (the first five) and 'automatic' or tacit knowledge (the last one). Based on these knowledge objects and the more specific 'knowledge containers' that can be found in the marketing and sales department's structures and relations, nine sub-categories were determined throughout the three main categories.

Regarding marketing-specific HC (which was defined as all the knowledge and skills residing in marketers), five sub-categories were considered: customer knowledge, technical knowledge, market knowledge, educational background and experience and marketing-related skills. Regarding marketing-specific SC (which refers to all marketing-related knowledge residing in a firm's information systems, databases, documents, manuals, routines and procedures, as well as in any other physical and/or digital artefacts), two sub-categories were established: marketing-specific IT capital (i.e. the knowledge obtained through and residing in marketing-specific IT solutions) and marketing-specific organisational memory (which refers to any type of marketing-related stored knowledge that could not be obtained through information processing by IT solutions, although it could be digitally stored). Finally, in the case of marketing-specific RC (which refers to all marketing-related knowledge generated, transferred and preserved through interpersonal relationships), four sub-categories were established: marketing-specific internal RC (department level), marketing-specific internal RC (inter-department level), marketing-specific external RC (customer-related) and marketing-specific external RC (other external actors).

Once the IC architecture was designed (i.e. IC categories and sub-categories, together with their corresponding definitions), indicators for each sub-category were generated by

adapting already existing scales in the literature (especially in the HC domain, where extant marketing literature proved to be extremely helpful) or by being inspired by the more general knowledge management and IC literature. In this regard, a total of 80 items or knowledge resources were identified.

Thus, the suggested scale combines the IC and marketing literatures to facilitate a contextual approach to IC that adapts to the knowledge specificities of a particular organisational domain (i.e. the marketing and sales function) and provides managers with a tailored tool to manage their knowledge resources. It also provides researchers with a more specific and detailed instrument to analyse the influence of IC on performance.

Publication 2 intended to answer the next sub-question: What is the degree of association between marketing-specific human capital, motivation and customer experience? Grounded on the ICV and the self-determination framework (Deci & Ryan, 1985), it was expected that employee motivation would behave as an antecedent for delivering superior CEs, while marketing-specific HC functions as a mediator within this relationship. Although the findings presented evidence to support most of the hypotheses, they demonstrated different levels of relevance for each type of knowledge and skills in improving CE.

First, supporting what the self-determination theory explains (Deci & Ryan, 1985), marketing and sales employees' motivation, particularly the intrinsic type, is directly associated with CE, confirming that different contexts might cause dissimilarities regarding employees' motivation (Gagné et al., 2010; Ritala et al., 2020). Furthermore, the direct effect that motivation presented on marketing and sales employees' HC also confirmed the expectation that motivation stimulates and promotes knowledge acquisition, use and sharing in the workplace (Noe et al., 2010; Lukoscheka et al., 2018).

Second, regarding marketing-specific HC, the ability of marketing and sales employees to interact with customers effectively influences the perceived level of CE. (Mosley, 2007). Specifically, the proposed mediation effect was supported for customer knowledge and marketing skills within the marketing-specific HC umbrella. The former is related to the argument by Rapp et al. (2006) that customer knowledge is a key part of HC, while the latter confirms the relevance of possessing specific skills to engage with customers and deliver enhanced experiences (Pettijohn et al., 2002). Particularly, marketing and sales employees must develop creativity, targeting skills, problem-solving skills and social media management skills to guarantee successful CE.

Publication 3 intended to answer the third sub-question: What is the degree of association between marketing-specific structural capital, marketing innovation and market performance? The model developed in this publication showed the relevance of marketing-specific SC for both marketing innovation and market performance and also highlighted the specific elements that are the most influential in this process. Generally, the findings confirmed that the accumulation and conservation of the prevailing knowledge base of the marketing and sales departments affects incremental marketing innovative capability in a straightforward manner (Youndt & Snell, 2004; Hanvanich et al., 2006; Wang & Chen, 2013).

Regarding the association between marketing-specific organisational memory and marketing innovation, the results obtained expand the research by Camisón and Villar-López (2011), as not only prior knowledge about clients and markets induce marketing

innovations but also the preservation of information regarding past projects, deals and/or campaigns, as well as marketing-related routines and procedures. Furthermore, it demonstrated the key role of IT capital in the development of marketing innovation and the improvement of market performance. These findings follow those of Hsu and Fang (2009), Wang & Chen (2013) and Buenechea et al. (2018), who also found support regarding the relevance of SC in innovation. Particularly, IT systems implemented by the marketing and sales departments that enable the production, analysis and integration of knowledge regarding customers, markets and products and/or services resulted in the most important SC component for the development and improvements in the marketing mix (i.e. marketing innovations).

Finally, the last publication intended to answer the last sub-question: What is the degree of association between marketing-specific relational capital components and product/service innovation performance? The study confirmed the significance of knowledge gathered through the external and internal relationships to develop improved product and/or service innovation, besides demonstrating that the influence of each specific marketing RC category is different (Grant, 1996).

Starting with marketing-specific external RC (other external actors), it showed the strongest association with product/service innovation performance. This confirms the general argument that the integration of the knowledge gathered from external relationships is necessary to guarantee the acceptance of the new product/service in the market. (Jiménez-Jiménez & Cegarra-Navarro, 2007; Martín-de-Castro, 2015). Continuing with marketing-specific internal RC (inter-departmental level), it presented the second highest direct influence on product/service innovation performance. Third, as expected, cross-functional interactions, such as collaboration between the marketing and sales department and R&D or manufacturing (Bendoly et al., 2012; Mostaghel et al., 2019; Salojärvi et al., 2015), proved to stimulate the sharing and creation of specialised knowledge resources required to develop improved products and services (Smith et al., 2014; Tsai & Ghoshal, 1998). Focusing on marketing-specific internal RC (department level), it showed the smallest influence on product/service innovation performance, which in any case was significant. When marketing and sales employees socialise among themselves, unintentionally, they exchange and combine knowledge about changing customers' preferences, new market opportunities or technological advances that can inspire them to generate new ideas for new products and/or services (Allee, 2003; Maurer et al., 2011). Finishing with customer-related external RC, it proved to be a key antecedent for the acquisition of knowledge through the other three categories of relationships, which fully mediated the association of marketing-specific external RC (customer level) with product/service innovation performance. This finding is aligned with the idea defended by Tsai and Hsu (2014), Mahr et al. (2014) and Cui and Wu (2016), who stated that knowing the customer and ensuring their involvement in the product/service innovation process give rise to higher performance.

Concerning the moderating role of customer type, the stronger influence of knowledge embedded in the relationship with customers and in the departmental relationships in B2C organisations when developing product/service innovations implies that B2C organisations depend more on purely marketing-related knowledge than B2B companies do. This could be explained because the consumer base of B2C companies is larger (Kannan and Li, 2017). Therefore, they can access more complete tools for customer management and analysis of their respective data, making the knowledge generated much more abundant and relevant than in the case of B2B companies. Additionally, a weaker

influence of marketing-specific external RC (customer level) in B2B firms could result from the fact that in B2C firms normally the marketing and sales department tends to be in touch with customers, while in B2B firms, other departments also develop relationships with customers in an attempt to provide more effective solutions (Kohtamäki & Partanen, 2016). In contrast, external RC (other external actors) showed a much stronger influence on product/service innovation performance in B2B organisations than in B2C firms. Since B2B companies depend more on external distributors than B2B firms, establishing close relationships with them to share and generate mutual knowledge can help ensure the success and acceptance of new products and services. Additionally, regarding external actors, competitors' offerings normally tend to be less visible for B2B companies than for B2C firms, which means that these companies are more dependent on the relationship with their rivals, from which marketers can gain valuable knowledge in helping them identify opportunities for product/service innovation.

Overall, for the main research question mentioned at the beginning of this section, the results show that the management of marketing-specific IC clearly influences the scope of different types of marketing-related performance in companies. Additionally, for the promotion of a particular type of performance, different business characteristics and contingency factors require different combinations of IC assets to contribute to the desired success (Hussinki et al., 2018).

5.2 Theoretical contribution

This study contributes to two main literature streams: the IC literature and the marketing and sales literature.

5.2.1 Contribution to the IC literature

The contextual view of IC

The highest-level contribution of this study refers to the recent call for greater contextualisation of research in IC management (Kianto et al., 2018). Even if, since 1998, IC-performance studies have been conducted in diverse contexts, they do not identify which are the particular knowledge resources to be considered in the corresponding settings. For instance, focusing on the top management function, Ginesti (2019) explored the association of top management characteristics with their IC performance based on the Value Added Intellectual Coefficient (VAIC) model. Although this is a different measurement approach based on financial statements, it is also very generic. The study does not enable researchers to deduce which kind of specific knowledge resources should be developed by top managers depending on their characteristics. Similarly, Souisa et al. (2019) studied the influence of IC, entrepreneurship and business strategy on cooperative manager performance. One of their findings was that IC has a positive and significant direct effect on the performance of cooperative managers. However, the study does not clarify which IC sub-category is the most relevant or which knowledge resources are the most relevant. Likewise, Ying et al. (2019) examined the role of top managers' IC in sustainable competitive performance but only included generic knowledge items to operationalise the IC variable, without specifying the different knowledge resources that top managers should master. Regarding the HRM function, the study by Patky and Pandey (2020) used the generic IC scale provided by Kianto et al. (2017), while Chen et al. (2021) measured IC based on Subramaniam and Youndt's (2005) generic scale, without any

adaptation to the HRM setting. These are specific examples that clarify the application of generic scales in context-specific IC studies without doing any kind of adaptation of the proposed items to the peculiarities of each of the contexts, which only shows the general relevance of IC in the respective contexts.

This study contributes to the contextuality view of IC by developing a novel measurement scale for the marketing and sales function that considers its context-based specificities; thus, by identifying those knowledge resources, it is strictly specific to the marketing and sales function (i.e. the focal context). The scale development methodology conducted could be useful to inspire researchers from other disciplines to develop more practical IC models for their specific contexts. The increasing interest in the development of more context-specific IC scales would prosper the applicability of IC in particular settings, which would be a great breakthrough for the IC literature.

Formalisation of the knowledge-based ICV

The analysis of the definitions used in traditional IC research (Brooking, 1996; Edvinsson, 1997; Sveiby, 1997; Nahapiet & Goshal, 1998; Youndt et al., 2004) showed that while some studies consider all types of intangible resources to measure IC, others only include knowledge resources as a research object. Defining the IC concept in various ways involves a high degree of element diversity in measurement scales. Consequently, the comparability and interpretation of the results obtained by different studies is seriously affected. Moreover, the debate created in academia around IC is not as consistent as it should be.

To make the IC measurement more relevant and consistent, this study contributes to the ICV by concentrating on what is rigorously specific of the ICV of a firm: knowledge resources residing in individuals, the organisation and relationships. In this way, homogeneity can be preserved in the aspects included within each construct. For research to be meaningful (especially when it comes to testing explanatory and predictive models), it is important that the conceptual abstractions that are created as a combination or aggregation of simpler elements really observe thematic unity and be grounded on theory (Sarstedt et al., 2016). Put differently, and focusing on the IC domain, from a theoretical perspective, aggregating things just based on the place where they reside may be a quite lax approach to explanatory and predictive research. Even though regarding accounting and inventory purposes, it could be a very reasonable approach, when it comes to research, it may imply adding elements that are interrelated in a chain of cause–effect relationships under the same umbrella, as already highlighted in this manuscript. Therefore, a finer-grained approach is needed.

Along these lines, the knowledge perspective of IC is rich enough in itself to provide researchers with fruitful avenues for future inquiry. Beyond going deeper into the contextual view of knowledge (Kianto et al., 2018) and helping to discover the specific knowledge resources that are more relevant in different settings to better guide knowledge management efforts, deepening into the distinction between knowledge assets (i.e. knowledge stocks) and capabilities (i.e. what the firm can do or 'knowledge in practice') constitutes another extremely relevant research path. As acknowledged by Grant (2010), knowledge assets represent one of the main building blocks or organisational capabilities, but little is known about how they are related. Previous research in the IC field has limitedly addressed this relationship, with dynamic capabilities (Wu et al., 2007; Ansari et al., 2016; Singh & Rao, 2016), innovation (e.g. Subramaniam & Youndt, 2005;

Aramburu & Sáenz, 2011; Martín-de-Castro et al., 2013; Wang & Chen, 2013) and learning capabilities (Hsu & Fang, 2009; Liu et al., 2010; Noruzi & Vargas-Hernández, 2010; Moghadam et al., 2013) being an exception to this rule.

Methodological contributions to the IC literature

Finally, from a methodological perspective, this study makes an in-depth reflection on the ontological nature of the concept of IC to conclude the type of measurement model that its study requires. In fact, using Rigdon's (2012) expression, the use of common factor models in IC studies have been 'oversold'. Many studies have analysed the influence of IC on different types of firm performance (Inkinen, 2015). These studies considered the IC concept and its sub-components as constructs made up of several indicators, which is completely correct. Nevertheless, the same cannot be said about the measurement model applied. Most of the studies decanted by the common factor model (i.e. reflective measurement) (Bagozzi, 2011), which means that the indicators are generated by the unobservable variable under study and should be highly interrelated. The issue is that—in the case of IC, which is a concept that only exists as an idea and does not constitute an objective reality—such a concept cannot bring into existence any indicator. In other words, the relationship between the items and respective IC constructs is just a 'definitorial' relationship (Henseler, 2017). When dealing with such a situation, a composite measurement model is the only option.

Along these lines, the dissertation provides an extensive reflection on the differences between reflective measurement, causal–formative measurement and designed conceptual measurement to conclude that the methods used in many of the IC studies so far are not adequate. Hence, this study contributes to discernment regarding the methodological choices to be considered in future IC-performance studies.

5.2.2 Contribution to the marketing literature

Even though previous studies have examined marketing assets independently without considering them as IC (Pucci et al., 2015), this study contributes to the marketing literature by organising and classifying all marketing-related knowledge resources under the umbrella of marketing-specific IC. This new concept is defined in publication I as 'all of the available valuable marketing-specific knowledge resources that an organisation manages in developing its marketing capabilities and achieving its marketing-related goals'. The marketing-specific IC concept contributes to the MO concept (Morgan et al., 2009), as it can be regarded as the result of a firm's MO. Put differently, market-oriented organisations will generate more marketing-specific knowledge resources. The identification and classification made of the marketing-specific IC constituents facilitates its management and monitoring by market-oriented firms, which increases the probability of reaching superior performance. The findings provided by the empirical studies included in this study contributed to the discussion on marketing knowledge resources by highlighting the most relevant ones when it comes to enhancing different types of marketing-related performance.

Based on the above, the study also contributes to expanding knowledge on the key antecedents of marketing-related performance (Rossano et al., 2006). It adheres to the idea that marketing performance is a multi-dimensional construct (Gao, 2010). Along these lines, each marketing-specific IC component has been associated with a specific performance metric. First, the relationship between marketing-specific HC and customer

experience has been demonstrated. Aligned with Groza et al. (2016), and considering that marketers act as brokers when engaging with customers, it has been shown that their knowledge and skills are highly important to generate positive CEs. Second, marketing-specific SC has been associated with marketing innovation and market performance. Findings demonstrate how companies' preserved knowledge is a key input for incremental innovation and for marketing innovation to occur (Abernathy & Clark, 1985; Subramaniam & Youndt, 2005). Third, marketing-specific RC has been recognised as an antecedent of product/service innovation performance. Following Davcik and Sharma (2016), the integration and deployment of the knowledge embedded in the internal and external relationship of an organisation (i.e. marketing-specific RC) works as an engine for product/service innovation creating superior value for customers.

5.3 Managerial implications

As highlighted by Dumay (2016), more suitable, useful and executable IC measurement scales are needed for practitioners. Thus, a relevant part of this study lies in offering valuable prescriptions for managers (in this case, marketing and sales managers) to manage their IC. For instance, those who want to make an IC diagnosis might use the new scale as a complete auto-evaluation instrument to conduct a detailed analysis to determine the degree of development of their knowledge resources. The collective evaluation of all the identified IC categories and their respective items provides a very detailed image to the marketing and sales employees that can be utilised as a basis for decision-making and development of action plans. Moreover, regular evaluation would help in recognising how the different proposed development initiatives affect the degree of development and evolution of the dimensions of IC over time.

Focusing on marketing-specific HC, managers must internalise its critical role in the generation of superior CE since employees are among the most important links between a firm and its customers. In fact, companies should build a learning-oriented and knowledge-sharing culture among marketing and sales employees to ensure that they acquire the essential skills and knowledge to deliver excellent customer experiences. Based on the findings, customer knowledge is particularly important to generate superior CEs, but it is insufficient, as it should be complemented with specific marketing skills. One of those skills that managers cannot forget is the management of social networks. Today, most people use social networks, and it has become a key tool for marketers to know everything about customers, to influence them or even make their experience unique (Guesagala, 2016; Michaelidou et al., 2011). Given this situation, the study recommends that organisations provide marketing and sales employees with marketing-oriented IT training and support, so they can use these touchpoints to gain specific marketing knowledge needed to develop successful strategies.

Moreover, the strategic management of marketers' motivation helps provide better CEs. Motivated sales and marketing employees show more enthusiasm and energy when interacting with customers, resulting in positive behaviours and reactions towards them (Kadic-Maglajlic et al., 2018). For customers to perceive this positivism that makes their experiences superior, human resources departments should apply regular incentive tools to ensure marketers' motivation, which does not refer only to salary or being really identified with the company. Rather, it refers to encouraging the development of intrinsic motivation, such as enjoyment and interest in their job. The more intrinsically motivated the marketing and sales employees are, the greater the CEs will be.

Regarding marketing-specific SC, marketing and sales managers must work to preserve marketing-specific knowledge resources within the company as a key antecedent to facilitate successful marketing innovations. In this regard, both traditional forms of organisational memory and IT-generated knowledge are important. Managers should take advantage of IT solutions to extract knowledge about customers and combine it with historical information records to guide marketing innovation efforts. Thus, marketing and sales departments should verify on a regular basis that all customer data is up to date and complete. Additionally, 'learning days' could be organised to encourage the sharing of best practices and lessons learned among employees and hence create a collaborative work environment that helps internalise and turn such practices into routines. Moreover, it would be advisable for company managers to invest in a project repository accessible to marketing and sales employees so that they could reuse past projects, deals and/or campaigns of different customers as a reference for developing new marketing innovations.

As far as marketing-specific RC and product/service innovation are concerned, from a practical perspective, findings revealed that marketing and sales departments take advantage of the knowledge generated through their internal and external social interactions. The results showed that the knowledge generated by interacting with customers in particular is a key antecedent for the acquisition of knowledge through other relationships. Therefore, marketing, sales managers and general managers should focus on promoting socialisation with their customers without forgetting that the social relations within the marketing department, with other departments within the company and with other external actors are also essential to generate knowledge for the development of product/service innovation. Nonetheless, it should be noted that depending on the customer type served, the importance of the knowledge generated from the different relationships differs when enhancing product/service innovation performance.

Given the importance of the relationships of the marketing and sales departments as sources of critical knowledge for decision making, this function should adopt the role of knowledge integrator throughout the organisations. One good practice would be to organise regular meetings between departments to encourage knowledge sharing, but it would be equally constructive to organise gatherings between lead customers and other functions, such as the R&D department, where the marketing and sales employees could translate customer insights, enabling improved innovation processes.

5.4 Limitations and future research

This study has some limitations that may be viewed as future research opportunities. The first limitation arises from the sample of companies, as it included merely Spanish organisations, and thus, national features could influence the results obtained. This fact should not affect the validity of the developed scale. Nevertheless, cultural characteristics can make the degree of development of the different categories and indicators of marketing-specific IC vary (Sáenz et al., 2017). Facing this issue, future research should test the models in other geographical settings to highlight cultural or geographical differences in the results obtained. Moreover, although the answers of 346 companies were finally registered, these opinions and perceptions were collected from a single respondent from each company. This perceptual data allowed testing the suggested hypotheses, but there could be some limitations regarding the knowledge of the respondent to answer all the issues gathered in the survey. Additionally, the existence of

different profiles and responsibilities within the marketing and sales function was not considered. Therefore, future studies can better distinguish the different roles of marketing and sales employees, as well as adopt different measurement approaches and combine them with several ways of measuring different types of performance.

Another limitation refers to the research methodology applied. In fact, choosing one methodological strategy over another entails limitation (Bryman & Bell, 2011). To answer the research questions posed in this study, a quantitative method was adopted and a structured survey was conducted to collect the data, which may present the possibility of common-method bias (Podsakoff et al., 2003). Although the statistical analyses used for each research model based on the specific procedures developed for PLS-SEM (Kock, 2015) allow the researcher to rule out this problem, it might be recommended to apply qualitative case studies to explore in more detail the marketing-specific IC-performance linkage or even implement a longitudinal approach that collects data at several points in time.

The last limitation that represents a future opportunity refers to the individual analysis of the marketing-specific IC components. Each empirical study has focused on a particular component and analysed its association with a specific marketing-related performance, which allows for analysing the detailed impact of such components. Nevertheless, the fact that IC is the sum of the three components cannot be ignored, which entails an interdependency. Hence, future studies could take the measurement scale developed to analyse the extant complementarity between all the main categories, sub-categories and constituents identified when enhancing a specific type of performance using the summary indicators proposed for each construct. In this regard, it would be suitable to also conduct research on other marketing-related performance metrics apart from those already analysed, namely, customer experience and market performance, for the customer behaviour category and marketing innovation and product/service innovation for the innovative category.

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Publication I

Peñalba-Aguirrezabalaga, C., Sáenz, J., and Ritala, P.
Marketing-Specific Intellectual Capital: Conceptualization, Scale development and Empirical illustration

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Marketing-specific intellectual capital: conceptualization, scale development and empirical illustration

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Abstract

Purpose – The aims of this paper are to identify and classify the knowledge resources that shape intellectual capital (IC) within the marketing function, to develop and validate a related scale and to demonstrate the scale's applicability in an empirical context.

Design/methodology/approach – A literature-based approach was adopted to identify and classify knowledge assets in the field of marketing. The new scale's content was then tested in a number of companies with different profiles. A subsequent survey of a representative sample of 346 Spanish firms sought to validate the scale and to assess those companies' marketing-related IC.

Findings – The literature search provided the basis for a marketing-related IC architecture comprising three main categories, nine subcategories and eighty items whose validity was tested and confirmed. The survey revealed that marketing-specific human capital (HC) is the most developed knowledge resource in Spanish firms, followed by marketing-specific relational capital (RC), while marketing-specific structural capital (SC) is the least developed. Significant differences were also found among companies with different profiles (B2C vs B2B, high-tech vs low-tech and manufacturing vs services).

Originality/value – This study makes a valuable contribution to the IC literature as one of the first to deploy the general IC framework in a specific functional area (here: marketing and sales) for more meaningful and in-depth assessment of firm-specific knowledge resources.

Keywords Intellectual capital, Knowledge resources, Marketing, Scale development, Spain

Paper type Research paper

1. Introduction

According to the knowledge-based view (Grant, 1996; Spender, 1996), knowledge is a firm's most strategically important resource, since it is considered the cornerstone of competitive advantage and value creation. For that reason, managers need to focus on producing, acquiring, retaining and utilizing knowledge (Spender, 1996). An organization's combined knowledge resources constitute its intellectual capital (IC) (e.g. Nahapiet and Ghoshal, 1998; Sullivan, 1999; Youndt *et al.*, 2004).

However, even though some authors equate IC to knowledge, others consider that IC encompasses all kinds of intangible resources (e.g. Brooking, 1996; Edvinsson and Malone, 1997; Sveiby, 1997; Roos *et al.*, 1998; Marr, 2006). Giving the prominent role of such resources in the generation of superior and unique returns for firms (due to their substantive

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inimitability), the early IC literature put great emphasis on taking stock of IC components and its constituents. Usually, a three-component classification has been suggested in which intangible and/or knowledge resources are sorted out according to where they reside: people (i.e. human capital (HC)), the organization (i.e. structural or organizational capital) or relationships (i.e. relational or social capital). Thus, IC components constitute designed or constructed conceptual variables with the aim to logically structure the intangible assets of the firm.

After the effort made in inventorying and classifying IC, numerous studies have been carried out to analyze its influence on company performance (for a review, see Inkinen, 2015). Many of them set out from the IC categories previously identified and tried to prove the influence of each IC component on performance using "constructs" or "proxy variables" made up of several indicators that try to capture their content. Despite the designed or constructed nature of such components, common factor models (see Bagozzi, 2011) have mostly been applied, as if they were referring to actually existing unobservable variables that give rise to the indicators included in each subscale (i.e. human, structural/organizational and relational/social capital). However, when a conceptual variable is viewed as a combination of different elements (i.e. when such elements "define" the variable but do not cause it), a composite measurement model applies (Henseler, 2017).

Beyond this general methodological challenge, the wide spectrum of elements that could be included within each IC component poses additional measurement problems. First, as the majority of existing studies analyze the influence of IC on performance with a single construct per IC component, a selection is made by authors about the specific elements to be included in each IC category, which affects the comparability of the results obtained. Second, when very heterogeneous aspects are included within the same construct, each of them tends to be represented by very generic and synthetic indicators. Thus, analyses on the IC-performance linkage based on such indicators provide very little information beyond highlighting the relevance of hiring bright and skilled people or that of investing in information systems and documenting knowledge. Moreover, very often the scales used (e.g. Bontis, 1997; Hsu and Fang, 2009) mix practices, resources and outcomes within the same construct, which implies that dependency relationships between such elements may also exist.

Therefore, to improve the relevance and consistency in IC measurement, in the current study a proposition is made to concentrate clearly on knowledge resources (i.e. to exclude other intangible assets, practices and outcomes) and to take a more specific approach into the qualities of knowledge. As pointed out by Kianto *et al.* (2018), one of such qualities is *contextuality*: knowledge is always a contextual phenomenon, with strong local and institutional components, something that has been largely overlooked by the IC literature. Although since 1998 onwards IC-performance studies exist that have been carried out in different contexts (especially in terms of industry, ownership, company size and type of country), these studies do not seek to highlight the specific types of knowledge or intangible items that may be of particular interest in these contexts, but they rather aim to show the general relevance of IC by using generic scales as discussed previously.

To overcome this research gap and considering that organizational units or functions constitute one of the less studied contexts in previous IC research, this study examines IC in the context of the *marketing and sales function* as a distinct but broadly relevant organizational domain. According to Porter (1985), while all of a business's functional areas contribute to the delivery of goods and services, marketing plays a key role in adding and creating value for customers. Additionally, the numerous and rapid changes in the marketing field have consequences for the knowledge resources needed for successful performance of this function. Marketing is therefore relevant in the present context in light

of its key role in attracting and retaining customers and shaping innovation and value creation, all of which are essential for company survival (see for example Kotler and Armstrong, 2018).

By distinguishing between human, organizational/structural and social/relational capital (RC) (Youndt *et al.*, 2004) within the marketing context, a measurement scale will be proposed that provides a more fine-grained instrument for researchers assessing the influence of domain-specific knowledge resources on marketing capabilities and performance. This will in turn provide more tailored recommendations for marketing professionals in relation to managing IC. Marketing managers can also use the scale as a self-assessment tool to diagnose the knowledge-related strengths and weaknesses of the marketing function. More broadly, the development of a domain-specific IC scale serves to demonstrate the utility of more tailored but generalizable approaches to IC measurement.

Next, a literature review will be presented on the conceptualization, categorization and specification of IC and its consequences for empirical research, including an overview of IC-performance studies in specific contexts. Research design will then be explained, whereupon knowledge resources that shape IC within the marketing function will be identified and classified. Subsequently, a scale to measure marketing-specific IC will be developed and validated before being empirically illustrated in a survey of 346 Spanish firms. Implications for research and practice will be discussed in the end.

2. Theoretical background

2.1 Conceptualization, categorization and specification of IC

IC has been conceptualized via multiple definitions in the literature, each of them providing different insights. After a careful examination of some of the most popular ones (see the Appendix for a chronological compilation of IC definitions in the literature), two main groups of definitions emerge.

The first group views IC as the sum of all intangible resources that make up the invisible part of the firm's balance sheet. Authors such as Brooking (1996), Edvinsson (1997), Edvinsson and Malone (1997), Sveiby (1997), Roos *et al.* (1998) and Marr (2006) clearly adopt this perspective. The second group, however, is more restrictive and views IC as the sum of all knowledge that firms leverage to gain competitive advantage (i.e. knowledge is the only intangible resource included). Authors such as Nahapiet and Ghoshal (1998), Sullivan (1999) and Youndt *et al.* (2004) clearly adopt this view, while other prominent contributors like Stewart (1997) and Bontis (1998) adopt a more intermediate position, as they emphasize the role of knowledge but consider other intangible resources as well.

Whichever the perspective adopted, the definitions of IC split it up into different categories. Although the specific labels may vary, usually a three-component classification is suggested in which intangible or knowledge resources are sorted out according to where they reside. Such criterion also reflects the capability of the firm to retain and preserve its sources of value creation: while human-centered assets (i.e. intangible or knowledge resources residing in people) disappear when employees leave, structural resources (i.e. those residing in the organization itself) remain within the firm. RC occupies an intermediate position because even though social relationships involve human participation, changes in the people involved do not necessarily mean institutional relationships fully disappear. Knowledge and other intangible resources derived from them may change, but relationships might be preserved.

According to the IC-based view of the firm (Reed *et al.*, 2006), intangible resources (and knowledge resources in particular) constitute the principal source of superior returns, and thus companies must develop strategies to leverage them. For this to be possible, these "hidden" sources of value creation need to become apparent in one way or another. This is

why early IC literature put great emphasis on taking stock of IC components and their constituents.

In the case of *human capital* (HC), the following were identified (see the Appendix for specific contributions and references):

(1) Knowledge-related elements, namely: individual explicit knowledge or "conscious" knowledge (i.e. knowledge about facts, concepts and frameworks); individual tacit knowledge or "automatic" knowledge (i.e. skills, abilities, know-how, capabilities, competences and expertise) and employees' training and experience (i.e. aptitudes).

(2) Other intangible resources, such as: values, attitudes (e.g. flexibility), motivation, satisfaction, loyalty and the firms' commitment to support employees' competences and capabilities.

Regarding *structural capital* (SC), the following constituents were suggested:

(1) Knowledge-related elements: objectified knowledge (i.e. intellectual property, written knowledge, documents, databases, process manuals, methodologies, policies and procedures); organizational routines and organizational capabilities or know-how.

(2) Other intangible elements, such as: technological infrastructure (i.e. technologies, computer and administrative systems, software and communication systems); organizational structure; internal networks; processes; organizational culture; leadership and management style; management systems (e.g. incentive schemes) and R&D efforts.

In the case of *relational capital* (RC), the focus was initially only on customer relationships, as is highlighted by the fact that RC was labeled as "customer capital" in some contributions. Over time, however, the scope of external relationships broadened, including relationships with other external stakeholders and even considering internal relationships as well (Youndt *et al.*, 2004). In this respect, the evolution of the so-called "social capital" concept and its linkage with RC is noteworthy. When Nahapiet and Ghoshal (1998) used the concept for the first time in connection to the IC literature (see Appendix), they were considering social capital as a key driver of IC and not as an IC component in itself (in their view, IC was made up of individual explicit and tacit knowledge – i.e. HC – and of social explicit and tacit knowledge – i.e. SC). Some years later, Youndt *et al.* (2004), recovered the concept and presented it as an IC component together with human and organizational (i.e. structural) capital. Their definition was very similar to that of Nahapiet and Ghoshal (1998), while only focusing on knowledge resources.

With the exception of Youndt *et al.* (2004) and their precursors Nahapiet and Ghoshal (1998), RC constituents found in the literature have been mainly external to the firm and different from knowledge. These consist of external relationships themselves (i.e. relationships with customers, suppliers, alliance partners, shareholders and other external stakeholders); the company's customer base; distribution channels; contracts and agreements; commercial power; image-related assets (i.e. brands, trademarks and corporate reputation) and customer-related outcomes (i.e. customer satisfaction, backlog, repeat business, customer loyalty, customer penetration, customer coverage and customer profitability).

The above compilation of constituents shows a broad and varied spectrum of elements within each IC category which confirms their "constructed" nature. Each IC component is defined by a combination of knowledge and/or intangible resources that have been grouped together according to where they reside (people, the organization itself or social relationships). These elements do not necessarily emerge from an underlying common

factor (i.e. they do not necessarily share a common root or cause) and hence do not necessarily evolve in the same direction. This is important because when empirical research tries to analyze the influence of IC components on performance, a measurement model should be proposed that is in accordance with the nature of the underlying variables (in this case, designed conceptual variables).

2.2 Consequences for empirical research

After the effort made to take stock of intangible and/or knowledge resources and classify them into different categories, numerous studies have been developed trying to analyze the influence of IC on company performance. Very often, these studies set out from the IC categories previously identified (i.e. HC, SC and RC) in examining the influence of each IC component on performance using "constructs" or "proxy variables" made up of several indicators that try to capture the content of each component.

One of the most influential IC scales that has been used and has inspired many ulterior studies is that suggested by Bontis (1997). This scale encompasses three subscales, one per IC component (i.e. HC, SC and RC)) and each subscale includes not only intangible resources but also different practices that contribute to develop them and different outcomes derived from such resources. For instance, in the case of HC, several indicators can be found related to recruiting, training programs and employee support (i.e. HC-related practices), together with others aimed at measuring whether employees are competent, brilliant, creative, reflective, collaborative or motivated (i.e. HC-related resources), and others showing whether the company is able to achieve its HC-related goals (e.g. getting the most out of employees or business planners being continuously on schedule with their new business development ideas). The same happens with SC, where some of the indicators refer to company practices (such as supporting the development of new ideas and products), others to intangible resources residing in the organization itself (like having innovation supportive systems and procedures, a supportive and comfortable atmosphere, accessible data systems and an organizational structure that promotes employee closeness) and others to SC-related outcomes (such as transaction costs, revenues per employee, transaction time and efficiency). This is also the case for RC, where practice-related indicators refer to continually meeting with customers, getting feedback from them and disseminating such feedback throughout the organization; resource-related ones include understanding targeted market segments and customer profiles and RC-related outcomes encompass customer loyalty, relationship longevity and market share.

Bontis' IC scale exemplifies one of the highest degrees of indicator diversity that we can find in empirical research analyzing the IC-performance linkage, both because each subscale mixes up practices, resources and outcomes, and also because there is a variety of each of them (i.e. different types of practices, resources and outcomes) within each subscale. Other influential scales in the literature also show important degrees of content diversity. For instance, in the case of Youndt *et al.* (2004), each of the subscales they use for human, organizational/structural and social/RC concentrate on a variety of resources or practices. For instance, in the case of HC, employee expertise together with their creativity and innovativeness are considered; while in the case of organizational/SC, indicators regarding knowledge embedded in intellectual property (patents and licenses), manuals and databases, organizational culture, systems and processes are included. In the case of social/RC, the focus moves from knowledge resources to practices, and a variety of them is suggested: employee collaborative and information sharing practices, inter-department idea exchange and knowledge application and partnering with external stakeholders.

Despite the fact that the above scales try to grasp designed or artificially created conceptual variables (in this case, a combination of knowledge and/or intangible resources –

and even outcomes and/or practices – that have been grouped together according to where they reside), common factor measurement models (Bagozzi, 2011) have been mostly applied. This approach suggests a reference to actually existing unobservable variables that give rise to the indicators included in each subscale, as is the case in behavioral research (e.g. MacKenzie *et al.*, 2005). The above involves that high correlations are expected between indicators within the same construct (as they are supposed to derive from the same underlying factor) and that indicators could be dropped out if this were not the case. However, being highly skilled, for instance, does not necessarily involve being highly motivated and having accessible data systems does not necessarily imply having an organizational structure that promotes closeness between employees. Even though this could be the case, there is no real reason to be like this. Instead, such items constitute autonomous and more elementary components of a broader concept (i.e. the corresponding IC category). Thus, when a conceptual variable is viewed as a combination of different elements (i.e. when such elements make up or define the concept as a prescription of how the "ingredients" should be arranged to form a new entity), a common factor model does not apply, but a composite one does (Henseler, 2017).

Beyond this methodological concern, the wide spectrum of elements that could be included in each IC component poses additional problems. Although classifying intangible resources based on where they reside (and thus according to the possibilities for the company to preserve them) is a logical way to proceed for inventorying and descriptive purposes (i.e. for making visible the hidden assets of the firm and present them in a structured way), the categories obtained are too diverse in content to analyze their influence on company performance correctly. With a few exceptions (e.g. Kim *et al.*, 2012; Khalique and Ordóñez de Pablos, 2015; Agostini and Nosella, 2017), most studies analyze the impact of IC on performance with a single construct per IC component. As a result, a selection is made by authors regarding the specific elements to be included within each IC category and, of course, not all authors select the same ones, which affects the comparability of the results obtained.

Moreover, knowledge aside, many intangible resources constitute the focus of other disciplines that analyze them in greater detail (put it the other way around, IC research sources extensively from other domains). That would be the case of employees' values, attitudes, motivation and satisfaction, as well as that of leadership and communication (which pertain to the field of organizational behavior), of organizational structure, networks and organizational culture (that are studied in organizational theory), of people-related management systems, such as development programs or incentive schemes (which belong to the field of human resource management) and of customer- distribution- and image-related issues, such as customer satisfaction, customer loyalty, distribution channels, brands, trademarks and corporate reputation (that belong to the field of marketing). Mixing these issues together with purely knowledge-related resources within the same construct and then analyzing the influence of such construct on performance hinders capturing each aspect properly and makes result interpretation difficult.

Regarding the first problem (i.e. being unable to capture each element properly), this refers to the fact that when very heterogeneous aspects are included within the same construct, each of them tends to be represented by very generic and synthetic indicators, such as "our employees are highly skilled or "our employees are considered the best in our industry" (e.g. Bontis *et al.*, 2000; Subramaniam and Youndt, 2005). Such indicators fail to clarify the specific skills and knowledge that employees need to master, in the same way that indicators such as "our company has efficient and relevant information systems to support business operations" or "our company has a great deal of useful knowledge in documents and databases" (e.g. Kianto *et al.*, 2017; Buenechea-Elberdin *et al.*, 2018), fail to illustrate the type of knowledge that needs to be stored and preserved. Thus, analyses of the IC-performance linkage based on such indicators only provide basic advice about the relevance of hiring bright and skilled

employees or about the need of investing in the right information systems and documenting relevant knowledge. As far as the second problem is concerned (i.e. difficulties in result interpretation), this relies on the fact that dependence relationships could also exist between the elements included in the same construct (especially if practices and outcomes are also included within the same latent variable).

Therefore, to improve the relevance and consistency of IC measurement and considering that many other intangible resources other than knowledge constitute the object of other disciplines that also analyze their influence on performance, the current study proposes to concentrate on what is truly specific of the IC literature and the IC-based view of the firm: knowledge resources residing in individuals, the organization and relationships. Indeed, according to Kianto *et al.* (2018), a necessary condition for gaining relevance lies in a thorough understanding of knowledge. As these authors point out, the IC literature seems to have largely neglected its specific qualities. One of such qualities is *contextuality*. Knowledge is always a contextual phenomenon, with strong local and institutional components. "Even when we are alone, our culture and communities influence us in the form of internalized conceptions, mental models, attitudes, and values" (Kianto *et al.*, 2018, p. 8). Moreover, relevant knowledge is dispersed throughout the organization, as each of the areas of the firm is specialized in a particular knowledge domain (Kianto *et al.*, 2018). This is why pushing general models of IC measurement does not necessarily provide practical results for managers beyond general notions (Schaper, 2016).

2.3 Towards a contextual view of IC

A journal paper search carried out by the authors in Scopus on quantitative empirical studies published since 1998 onwards analyzing the IC-performance linkage in specific contexts shows that out of the 318 articles that introduce a contextual approach, 220 of them analyze this relationship in a particular industry or set of industries: for instance, in different types of medium-high or high technology industries (58 papers), banking (40 articles), manufacturing firms (24) and educational institutions (16).

Ownership is the second most frequently considered contextual factor in the IC-performance relationship literature (106 papers), with a special focus on listed companies (83 articles), followed far behind by company size (with 47 papers). In the case of the latter, different combinations of SMEs (i.e. medium enterprises, small firms, micro-firms and nano-businesses) have been studied, with 36 articles devoted to this kind of companies. Country is the fourth contextual factor analyzed, with 36 papers aimed at obtaining specific insights for specific geographical contexts, such as developing or emerging countries (19) and Islamic countries (11). Finally, company age and organizational function are the less studied contextual factors in the literature, with just four papers devoted to start-ups in the first case and three papers devoted to the managerial function and another three to functions as diverse as purchasing, store management and TV reporting within the second group.

Even though the contextual focus of these papers, putting aside the large portion of studies (143 out of 318) based on the VAIC valuation method (Pulic, 2000; Bontis *et al.*, 2007), most of them utilize the same type of IC scales that the ones that have been described in the previous section. Thus, the previously mentioned methodological challenges apply to different extents for such studies aimed at drawing general conclusions on the degree of relevance of IC and its specific components in these contexts, without carrying out any adaptation of their items to the peculiarities of each of them. In other words, these studies mainly do not seek to highlight the specific types of knowledge or intangible items that may be of particular interest in these contexts, but opt mostly to show the general relevance of IC.

Considering the above gap, the current paper tries to develop a measurement scale adapted to the knowledge specificities of the marketing context. The numerous and rapid

changes in the marketing field considerably affect the knowledge resources needed to successfully perform this function. New technologies cause the interaction between individuals and firms to occur through different channels, devices and touchpoints. As a result, new types of data and analytic approaches are emerging, as well as new marketing models, concepts and tools (e.g. Kannan and Li, 2017).

The suggested scale will provide researchers with a more fine-grained instrument that will allow assessing the influence of marketing-specific knowledge resources in the development of marketing capabilities and performance and thus give rise to more tailored recommendations for marketing professionals about how to manage their IC. Marketing managers could also use the scale as a self-assessment tool to diagnose the strengths and weaknesses of the marketing function in terms of knowledge.

3. Research design

This section explains the rationale to develop an IC scale for the marketing function and the methods applied to validate and test it. The proposed scale could be applied to any type of company regardless of industry, size and geographical context, provided it has a marketing team (i.e. a group of people who work on marketing-related issues). Of course, certain company characteristics may influence the degree of development of some marketing-specific IC elements and categories, but any firm with a marketing team could use the scale for self-assessment purposes, and researchers could also use it to analyze the influence of marketing-related knowledge resources on organizational capabilities and performance with the appropriate controls. In such studies, firm characteristics could also be treated as moderating factors that may affect the investigated relationships.

3.1 Scale development

To develop a measurement scale for marketing-specific IC, the authors set out from the knowledge perspective of IC and thus excluded other intangible resources not related to knowledge. Second, they followed the logic used in mainstream IC research that identified three main IC components in which knowledge resources are examined according to where they reside in the organization (and beyond). Therefore, the traditional three-component classification was considered and adapted to this context, including marketing-specific HC, marketing-specific SC and marketing-specific RC.

In the third step, the authors had to decide which kind of knowledge constituents they should include within each marketing-specific IC category to reflect the knowledge peculiarities of the marketing function. For this purpose, and considering that knowledge is mainly used and leveraged by people (individually or collectively), they had first to identify the main knowledge objects that marketers need to deal with to perform their role (i.e. what do people in the marketing department need to know about). Following Nahapiet and Ghoshal (1998), the distinction was made between explicit or "conscious" knowledge, on the one hand and tacit or "automatic" knowledge, on the other.

Regarding explicit knowledge (i.e. knowledge about facts, concepts and frameworks), and starting with *facts*, the question was made about those entities on which marketers need to know what is going on to perform their job. An examination of mainstream marketing literature gave rise to four knowledge objects within this group: customers, products and/or services, market(s) and the company itself (i.e. the internal context).

The definition of marketing provided the first knowledge object. According to Kotler and Armstrong (2018), "marketing is the process of engaging customers and building profitable customer relationships by creating value for customers and capturing value in return" (p. 53). It follows that *customers* constitute the first knowledge object of the marketing function; to fulfill their mission, marketing professionals must understand the customer.

Building and maintaining profitable customer relationships—the key role of marketing—depends on delivering superior customer value and satisfaction. As this in turn depends on product/service performance that meets customers' expectations (Kotler and Armstrong, 2018), *products and/or services* (i.e. the company's offering) represent the second knowledge object of the marketing function. Marketing department personnel must understand the firm's offering, ultimately contributing to its improvement and/or development.

According also to Kotler and Armstrong, "marketing involves serving a market of final consumers in the face of competitors" (2018, p. 34). Thus, understanding the marketplace constitutes the first step of the marketing process, which implies that the *market* or markets in which the company operates represent the third knowledge object of the marketing function. Marketing professionals must understand the market if they are to successfully differentiate and position the company's offering.

This understanding of the external context must be complemented by knowledge of the firm's *internal context* (i.e. organizational mission and vision, constraints and interdependencies) to ensure that decisions and actions are consistent with the overall setting. As Kotler and Armstrong (2018) point out: "The firm's success depends not only on how well each department performs its work, but also on how well the various departments coordinate their activities" (p. 72). Therefore, company departments need to know each other, as well as how they contribute to the overall company goals and strategy.

Moving now to *concepts and frameworks*, this refers to what is also known as *disciplinary knowledge* (Rossiter, 2001). This constitutes the fifth knowledge object within the explicit or "conscious" knowledge category. In the case of marketing, it consists of "what marketing academics and consultants teach, and marketing managers draw upon in formulating marketing plans" (Rossiter, 2001, p. 9). As well as knowing about the firm's customers, products and/or services, markets and internal context, marketing professionals also need a grasp of marketing-related concepts, frameworks and principles (i.e. prescriptions for managerial action or for applying a particular research technique) to develop and implement successful marketing strategies and address different work situations based on what they know about customers, products and/or services, markets and the firm itself.

The above "information-type" (Kogut and Zander, 1992) or "knowing about" knowledge (Grant, 2010) should be complemented with tacit or "automatic" knowledge. This refers to *know-how* or knowledge about how to do something (in this case, marketing tasks or activities) and "it involves skills that are expressed through performance" (Grant, 2010, p. 163). These personal skills must be distinguished from organizational capabilities, which involve "coordination between organizational members such that they integrate their skills with one another and with a variety of other resources" (Grant, 2010, p. 154). Know-how represents the accumulated practical skill or expertise that allows one to do something smoothly and efficiently (Von Hippel, 1988). This type of knowledge is difficult to transmit: "Knowing how to do something is much like a recipe; there is no substantive content in any of the steps, except for their capacity to produce a desired end. The information is contained in the original listing of ingredients, but the know-how is only imperfectly represented in the description" (Kogut and Zander, 1992, p. 386).

Once marketing knowledge objects were identified, in the last step, different subcategories were proposed within each IC component to capture them, and specific indicators were suggested for each subcategory. To do so, the authors found extant studies that measured the identified knowledge-related constituents, and respective items were adapted to the marketing context.

Except for marketing-specific HC (where a different logic was applied), different subcategories were distinguished based on different types of knowledge "container" within each component. In the case of marketing-specific SC, the distinction was made between IT capital and more traditional forms of organizational memory (as suggested by Bueno *et al.*,

2011), while in the case of RC, four subcategories were suggested based on the internal or external nature of relationships and the actors involved: internal RC at the department level, internal RC at the inter-department level, external RC related to customers and external RC related to other external actors.

In the case of *marketing-specific HC* (where individuals constitute the only knowledge "container"), the subcategories suggested relate to the knowledge objects previously identified, with two exceptions: knowledge regarding the internal context of the firm (which the authors think is mostly embedded in internal relationships between the marketing department and other departments in the company) and disciplinary knowledge, which has been included within a larger subcategory called "educational background and experience" (or "aptitudes" as suggested by Bueno *et al.*, 2011). Thus, consistently with the knowledge-related elements identified in the literature review (Section 2 of this paper), marketing-specific HC encompasses individuals' explicit knowledge or "conscious" knowledge (including factual knowledge about customers, products and/or services and markets, as well as concepts and frameworks—i.e. disciplinary knowledge), individual tacit knowledge or "automatic" knowledge (i.e. know-how or marketing-related skills) and employees' training and experience (which nurtures both "conscious" and "automatic" knowledge).

In the case of *marketing-specific SC*, both subcategories proposed (i.e. IT capital and organizational memory) include different forms of objectified knowledge, while organizational routines (i.e. organizational repositories of collective tacit—or operational—knowledge that constitute the building blocks of organizational capabilities; Becker, 2004) are also part of organizational memory. However, organizational capabilities (in this case, marketing capabilities) are deemed to fall outside the scope of marketing-specific IC. Rather, marketing capabilities (product, pricing, placement/distribution and promotion/communication; Vorhies and Morgan, 2005) are seen to be grounded on the knowledge resources that integrate marketing-specific IC (Kogut and Zander, 1992; Grant, 2010).

Finally, in the case of *marketing-specific RC*, the four proposed categories (i.e. internal RC both at the department and inter-department level and external RC regarding customers and other external actors) will include different pieces of knowledge regarding customers, products and/or services, markets, the internal context of the firm (i.e. factual knowledge) and know-how, depending on the specific knowledge domains to which different types of relationships may be the closest.

3.2 Measurement model selection

The type of measurement model to be used is determined by the ontological status of the conceptual variables under study. According to Henseler (2017), a distinction should be drawn between *behavioral* and *designed* conceptual variables. Behavioral conceptual variables refer to human traits, moods, attitudes, behaviors and perceptions, which ". . .exist in nature irrespective of scientific investigation" (Henseler, 2017, p. 178). Conversely, designed conceptual variables are the product of theoretical thinking. They are "constructions" that are theoretically justified, which means that they are human-made "artifacts" (in other words, they are abstractions that do not have an autonomous independent existence in the real world).

In both cases, indicators are chosen to operationalize the unobservable concepts. As usually no single indicator can capture the full meaning of a theoretical concept, multiple indicators are used. These indicators constitute a "construct", "latent variable" or "proxy variable" (Sarstedt *et al.*, 2016), and it often happens that different researchers define different constructs or proxies to represent the same theoretical concept. The correspondence rule (i.e. the measurement model) that links the empirical indicators to a construct depends on the nature of the theoretical concept (Henseler, 2017).

In the case of behavioral conceptual variables, two possibilities exist: reflective measurement (or common factor models) and causal-formative measurement. In the first case, the indicators constitute the manifestation of the unobservable variable (i.e. they have been caused by this unobservable variable). For instance, "anxiety disorder" could give rise to "excessive worrying", "feeling agitated", "restlessness", "fatigue", "difficulty concentrating" and "irritability", among others. In this situation, the correlational pattern of the indicators provides indirect support of the existence of the unobservable variable (i.e. anxiety disorder). In other words, high correlations between indicators are expected (Sarstedt *et al.*, 2016; Henseler, 2017). In the second case (causal-formative measurement), the unobservable variable is caused by the observable variables. For instance, a "healthy condition" could be thought of as the result of "balanced diet", "doing exercise" and "getting enough sleep". In this situation, there is no reason to expect that indicators are correlated (Sarstedt *et al.*, 2016; Henseler, 2017).

In the case of designed conceptual variables (i.e. abstractions or ideas that develop by looking at or thinking about a number of different things), composite measurement constitutes the only possibility (Henseler, 2017). In this case, the indicators or observable variables define or build up the conceptual variable. They do not cause it, but they make it up (i.e. it is a "definitorial" relationship). Thus, in composite measurement, the relationships between the indicators and the conceptual variable are not cause-effect relationships, but rather a prescription of how the ingredients should be arranged to form a new entity (Henseler, 2017). As opposed to "being healthy" (which constitutes an objective reality), IC components only exist as an idea, and different authors may consider different constituents or "ingredients" for the same component (as the Appendix proves it clearly).

Consequently, in composite measurement, the construct is obtained as a linear combination of its indicators without error term, and each indicator enters the linear combination with a specific weight. Such weights can be calculated by means of correlations (mode "A" composites) or by means of multiple regression (mode "B" composites). Mode "A" composites involve bivariate correlations between each indicator and the construct (Sarstedt *et al.*, 2016). In this case, the relationships go from the construct to the indicators and, for this reason, mode "A" composites have been largely confused in the past with reflective measurement or common factor models (Rigdon, 2012, 2016). On the contrary, mode "B" composites involve a multiple ordinary least squares (OLS) regression of the construct or proxy variable on its associated indicators (Sarstedt *et al.*, 2016). Therefore, in this case, the relationships go from the indicators to the construct. This is why mode "B" composites have been largely confused in the past with causal-formative measurement (Rigdon, 2012, 2016).

In fact, due to the definitorial nature of indicators vis-à-vis designed conceptual variables, this is the "natural" way of posing the relationships between indicators and constructs in composite measurement: even though indicators do not cause the conceptual variable, they contribute to define it and, thus, the relationships should go from the indicators to the construct (Sarstedt *et al.*, 2016). However, collinearity among indicators could cause problems in the estimation of indicators' weights in mode "B" composites. Under these circumstances, using mode "A" composites should be considered (Rigdon, 2016; Henseler, 2017).

Most papers on scale development and reporting – see for instance Carpenter (2018) for a recent reference – assume a common factor approach aimed at proving the existence of the conceptual variables under investigation, with common factor analysis at the core of it. Nevertheless, it has been argued that "if there is no actual concept but only a theoretical definition (abstraction or idea), then validation cannot encompass anything more than an assessment of fidelity between the definition and the content of the measurement item"

(Rigdon, 2012, p. 348). In other words, the measures developed in this paper depart from the assumption that traditional factor analysis is not helpful, as it does not apply to the ontological nature of the variables under study.

As defined here, the categories and subcategories of marketing-specific IC clearly involve theoretical constructions or human-made artifacts. They are combinations of items of marketing-related knowledge that are grouped by theme (e.g. customer, product/service, market, etc.) and/or by "container" (people, IT systems, the organization itself and relationships of various kinds). This means that composite measurement is the only kind of measurement model that could be applied (Henseler, 2017), as the indicators or observable variables do not cause the conceptual variable but define or construct it in a "definitorial" relationship.

3.3 Scale validation and empirical test

To determine the validity of composites, content validity, face validity and convergent validity must be assessed.

To guarantee content validity, a core development team of three members was created with experts from both IC and marketing backgrounds. One of the team members had an extensive experience in the IC domain, with a track of publications in the most relevant journals of the field; while the second one had also an extensive experience in IC, combined with research and related publications in a variety of marketing and management outlets. Finally, the third team member had a master's degree in marketing and was initiating her academic career. In order to decide the indicators to be included within each marketing-specific IC subcategory, the core development team carried out an iterative process of individual work and collective contrasting that involved ten different rounds before obtaining a version of the scale which each member of the team was satisfied with. Once this version was obtained, the scale was cross-checked with external experts from the marketing department at the corresponding author's university (which did not lead to suggesting any changes).

In order to improve face validity, a pre-test was performed to determine whether the proposed indicators were comprehensible for marketing managers and could be applied in companies of different types. A total of six companies participated in this pre-test and were asked to provide feedback about the scale: three manufacturing companies operating in the food, beverage and wood industries (one of them B2C and the other two serving both end consumers and businesses) and three service companies operating in the editorial, marketing and telecommunication industries, of which two were B2B and the other one served both end consumers and businesses. All the participants in the pretest provided a positive feedback about the scale and did not suggest any change. What is more, several of them highlighted its usefulness as a diagnostic tool for the marketing function, providing a new and relevant perspective.

Finally, as far as convergent validity is concerned, when analyzing composites, this refers to the extent to which the indicators that constitute a construct capture the essence of the conceptual variable they are intended to represent. This involves a redundancy analysis (Hair *et al.*, 2017), where one indicator is included to provide a global or summary sense of the conceptual variable in question, and the correlation between the composite and this summary indicator is then calculated. For adequate convergent validity, that correlation should be 0.707 or higher, representing 50% of the explained variance (Hair *et al.*, 2017).

As collinearity may also create problems when estimating indicators' weights, this must also be assessed. Variance inflation factors (VIF) of 5 or above indicate collinearity between indicators. However, as such issues can also occur at lower VIF values, VIF values should ideally be lower than 3 (Hair *et al.*, 2019). If this is not the case, researchers should consider applying mode A composites (i.e. correlation weights).

A representative survey of Spanish firms was conducted to assess the convergent validity of the proposed scale. This also facilitated diagnosis of the strengths and weaknesses of these companies in terms of marketing-related IC. Spain was chosen to apply the scale because it is the home country of two of the co-authors. Although the designed instrument could be used in any context, the socio-economic and cultural context of the firm could affect the development of marketing-specific IC at the firm level. For instance, the degree of development of technological infrastructures in the country may affect the degree of development of marketing-specific IT capital, while the availability and quality of existing training programs in the marketing domain may affect the degree of development of marketing-specific HC. Likewise, according to Cegarra-Navarro and Sánchez-Polo (2010), "culture shapes assumptions about which knowledge is important, mediates the relationships between individual and organizational levels of knowledge, creates a context for social interaction and shapes the creation and adoption of new knowledge" (Sáenz *et al.*, 2017, p. 133). However, these contextual specificities do not invalidate the measurement instrument as such. Rather, they only inform the reader about potential differences in terms of marketing-specific IC development when companies from different geographical settings are compared.

The above being said, the target population for the empirical test was Spanish manufacturing and service companies with at least 100 employees. This threshold was established to ensure that participating companies had a well-established marketing and sales function. The SABI database (Sistema de Análisis de Balances Ibéricos; System of Iberian Balance Sheet Analysis) was utilized to identify companies that were representative of the study population. The total population comprised 2,346 firms, which were classified into different groups according to different combinations of manufacturing/service, high-tech/low-tech and medium-sized versus large-sized firms.

The above characteristics may cause differences in the degree of development of knowledge resources. For instance, service provision usually involves closer interaction with customers as compared to the delivery of manufactured goods, as well as continuous adaptation to their changing demands (i.e. higher customization degree) (Kianto *et al.*, 2010). The above may increase both the relevance of employees' ability to deal with novel and unexpected situations and that of stored knowledge related to customers' preferences. Second, according to Sáenz *et al.* (2017), high-tech companies deal with more rapidly changing and complex knowledge than low-tech firms, which requires a more skilled and qualified workforce and makes knowledge codification more difficult. Third, as Buenechea-Elberdin (2017) points out, companies with different sizes are expected to show differences in the degree of accumulation of knowledge resources: the larger the company, the greater the possibilities of investing in different types of knowledge assets (e.g. IT capital and highly qualified employees).

Companies were classified into manufacturing/service based on their NACE (*Nomenclature Statistique des Activités Economiques dans la Communauté Européenne*; Statistical Nomenclature of Economic Activities in the European Union) codes (NACE group C corresponds to manufacturing firms, whereas NACE groups H, I, J, K, L, M and N correspond to service companies). The same was done with high-tech and low-tech firms. In the latter case, the OECD (Organization for Economic Co-operation and Development) and Eurostat (the statistical office of the European Union) classification of industries according to their technology intensity was also used. In such classification, R&D intensity (i.e. R&D expenditure/Value added) serves as a criterion to sort out manufacturing industries. Four categories are suggested within the OECD-Eurostat classification: high technology, medium-high technology, medium-low technology and low technology industries. In the case of service sectors (whose classification in terms of technology intensity is only addressed by Eurostat), two groups are suggested (high-tech vs low-tech service industries), based on their share of tertiary educated people (Eurostat, 2020). In this study, firms whose NACE code

corresponded to a medium-high or high technology industry were classified as high-techs, whereas firms whose NACE code corresponded to a medium-low or low technology industry

Industry	B2B Freq	B2B (%)	B2C Freq	B2C (%)
Food industry	12	3.47	16	4.62
Manufacture of beverages			2	0.58
Textile industry	1	0.29	2	0.58
Manufacture of clothing	1	0.29	2	0.58
Leather and footwear industry	2	0.58	1	0.29
Wood and cork industry, except furniture: basketry and plaiting	1	0.29	1	0.29
Paper industry	7	2.02		
Graphic arts and reproduction of recorded media	4	1.16		
Manufacture of rubber and plastic products	13	3.76	1	0.29
Manufacture of other non-metallic mineral products	10	2.89	1	0.29
Metallurgy: manufacture of iron, steel and ferroalloy products	13	3.76		
Manufacture of metal products, except machinery and equipment	16	4.62	1	0.29
Manufacture of other transport material	2	0.58		
Furniture manufacturing	4	1.16		
Other manufacturing industries	1	0.29	2	0.58
Medium-low and low technology manufacturing firms	*87*	*25.14*	*29*	*8.38*
Chemical industry	7	2.02	9	2.60
Manufacture of pharmaceutical products	1	0.29	3	0.87
Manufacture of computer, electronic and optical products	5	1.45	1	0.29
Manufacture of electrical equipment and material	9	2.60	2	0.58
Manufacture of machinery and equipment	8	2.31	5	1.45
Manufacture of motor vehicles, trailers and semi-trailers	7	2.02	2	0.58
Manufacture of other transport material	3	0.87		
Medium-high and high technology manufacturing firms	*40*	*11.56*	*22*	*6.36*
Land transport and pipeline	10	2.89	15	4.34
Maritime and inland waterway transport	1	0.29		
Accommodation services	1	0.29	15	4.34
Food and beverage services	3	0.87	16	4.62
Edition	1	0.29	4	1.16
Financial services, except insurance and pension funds	1	0.29	4	1.16
Real estate activities	1	0.29	4	1.16
Legal and accounting activities	3	0.87	1	0.29
Activities of head offices, business management consulting activities	4	1.16	7	2.02
Architectural and engineering technical services; technical tests and analyses	17	4.91	1	0.29
Advertising and market studies	11	3.18	1	0.29
Other professional, scientific and technical activities	4	1.16	1	0.29
Activities of travel agencies, tour operators, reservation services and activities related thereto	1	0.29	2	0.58
Medium-low and low technology service firms	*58*	*16.76*	*71*	*20.52*
Motion picture, video and television program, sound recording and music editing activities			3	0.87
Programming activities and broadcasting of radio and television			2	0.58
Telecommunications	1	0.29	1	0.29
Programming, consulting and other activities related to computer science	22	6.36	3	0.87
Information services	3	0.87	1	0.29
Investigation and development	3	0.87		
Medium-high and high technology service firms	*29*	*8.38*	*10*	*2.89*
Subtotal per type of clients served (B2B vs B2C)	*214*	*61.85*	*132*	*38.15*
Total	*346*			

Table 1.
Sample composition

were classified as low-techs. As far as company size is concerned, companies with 250 employees or more were classified as large-sized, whereas firms with less than 250 employees, but at least 100, were classified as medium-sized.

Having calculated the sample size needed for a representative study (342 firms), companies in the target population were contacted by phone, and a follow-up system ensured that the relevant proportions of the above groups were preserved (in other words, a stratified sampling procedure was applied so as to guarantee that different proportions of company types according to industry, size and technology level were preserved as in the population). The final sample of 346 companies that answered the emailed or phone survey were assured of total confidentiality. Details of the composition of the sample are provided in Table 1. In the case of the B2B versus B2C distinction, this was done based on companies' responses regarding the type of clients served. If they claimed to serve only corporate customers, they were classified as B2B, whereas if they claimed to serve only end-consumers or both corporate customers and end-consumers, they were classified as B2C. As pointed out by Kotler *et al.* (2006), several characteristics of B2C firms as compared to B2B companies may affect the degree of development of marketing-specific knowledge resources. For instance, the lower complexity of consumer products may facilitate the mastery of their technical characteristics, in the same way as the greater visibility of competitors' offering in B2C industries could make the acquisition of market knowledge much easier.

As can be inferred from Table 1, 178 companies were manufacturing firms, of which 116 were low-techs (87 B2B and 29 B2C) and 62 high-techs (40 B2B and 22 B2C), and 168 companies were service firms, of which 129 were low-techs (58 B2B and 71 B2C) and 39 high-techs (29 B2B and 10 B2C).

Regarding the respondents' profiles, 85.26% held a managerial role in the marketing domain. Several noted that the measurement instrument was a very complete self-assessment tool that enabled them to perform an in depth-analysis of their strengths and weaknesses as a marketing department in a new and highly relevant way, providing further support for the content relevance of the proposed framework.

To analyze convergent validity, structural equation modeling (SEM) based on partial least squares (PLS) was applied, using SmartPLS software version 3.2.8 (Ringle *et al.*, 2015). PLS-based SEM was the appropriate technique for this purpose in light of its composite-based nature. Unlike covariance-based SEM (which involves a common factor approach), PLS-based SEM relies only on composites (Rigdon, 2016).

Finally, descriptive analyses and *T*-tests were carried out to analyze the strengths and weaknesses of Spanish companies in terms of marketing-specific IC and to account for differences between different groups of firms (B2B versus B2C companies, manufacturing versus service firms and high technology versus low technology companies). Differences between large- and medium-sized companies were omitted due to their lower interest.

4. Conceptualization, categorization and specification of marketing-specific IC

This section presents the scale developed to assess IC in the marketing function. To that end, the concept of marketing-specific IC is first presented. Following the knowledge view of IC, marketing-specific IC is defined as *all of the available valuable marketing-specific knowledge resources that an organization manages in developing its marketing capabilities and achieving its marketing-related goals*.

This concept complements and extends the market orientation (MO) concept traditionally addressed in the marketing literature. From a market information processing perspective (e.g. Jaworski and Kohli, 1993; Hult *et al.*, 2005), MO refers to the extent to which a company engages in the generation, dissemination and response to market intelligence pertaining to current and future customer needs, competitor strategies and actions, channel requirements

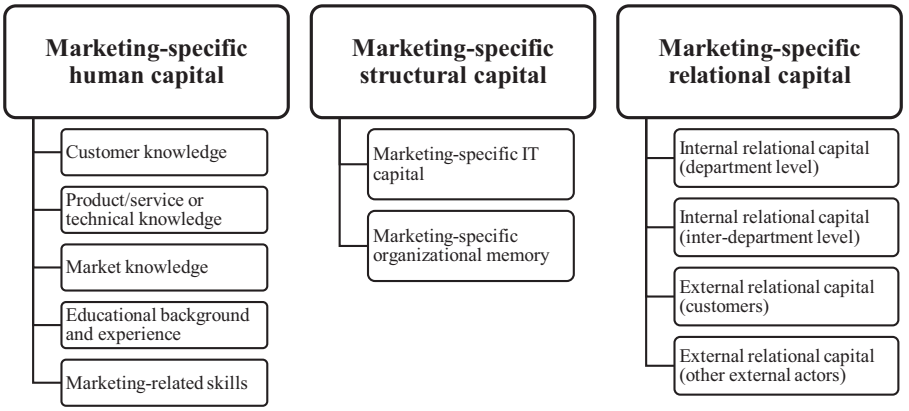

Figure 1.
Marketing-specific IC architecture overview

and abilities and the broader business environment (Morgan *et al.*, 2009). It involves customer orientation (i.e. understanding customers' needs and wants), competitor orientation (i.e. understanding rivals' strengths and weaknesses and how they are satisfying customers' needs and wants) and inter-functional coordination (e.g. Narver and Slater, 1990; Hult *et al.*, 2005). Thus, marketing-specific IC could be conceived as the result of a firm's MO: because firms are market-oriented, they are able to generate marketing-specific knowledge resources. The identification and classification of such resources facilitates their subsequent management and monitoring, which increases the chances that MO will lead to superior performance.

In the following, marketing-specific IC categories and subcategories are presented, together with their indicators. Figure 1 provides an overview of the measurement architecture.

4.1 Marketing-specific human capital

Marketing-specific HC refers to *all the knowledge residing in marketing and sales people*—in other words, what employees in the marketing department know. Unlike other IC categories involving different subtypes of knowledge containers, HC refers only to employees as "knowledge recipients."

Putting aside knowledge about the internal context of the firm (which the authors think is mostly embedded in internal relationships between the marketing department and other departments in the company), the IC subcategories considered in this domain are: Customer knowledge; product/service knowledge or "technical knowledge" (Behrman and Perreault, 1982; Rapp *et al.*, 2006); market knowledge; educational background (i.e. disciplinary knowledge) and experience (which reinforces other types of knowledge) and marketing-related skills (i.e. know-how). Based on the literature on marketing and sales staff performance, the following specific knowledge items were identified within each subcategory:

4.1.1 Customer knowledge. Employees' knowledge about customers enables them to satisfy customer needs more effectively than competitors (Saxe and Weitz, 1982; Rapp *et al.*, 2006). This subcategory comprises six key customer characteristics that people in the marketing function should know about: needs, expectations, satisfaction levels, personality, behavior and circumstances.

4.1.2 Product/service or technical knowledge. Referring to employees' knowledge about product specifications, applications and customer use situations (Behrman and Perreault, 1982; Cravens *et al.*, 1993; Rapp *et al.*, 2006), this encompasses five key elements of the company's offering that marketers should know about: product/service specifications; product/service applications and functions; differences from competitors; potential causes of operating failure and the firm's latest product and/or service developments.

4.1.3 Market knowledge. This refers to employees' knowledge about the industry in which the company operates (Schillewaert and Ahearne, 2000; Rapp *et al.*, 2006) and comprises four elements: information about industry trends, relevant events and competitors' activities and strategies.

4.1.4 Educational background and experience. This refers to employees' formal educational background in marketing, their updated knowledge in this area and their professional experience, both in marketing and sales and in their company's industry. While the first two relate to disciplinary knowledge, experience can reinforce the other three types of knowledge (customer, product/service and market-related), as well as know-how. This sub-category comprises five items encompassing the aspects included in the definition (see Table 2).

4.1.5 Marketing-related skills. These are skills considered relevant for marketing and sales professionals—in other words, know-how embedded in individuals. A literature review identified 10 such skills: targeting skills, adaptive skills, problem solving skills, communication skills, planning and organizational skills, expenditure management skills, IT skills, social media management skills, teamwork skills and creativity (e.g. Behrman and Perreault, 1982; Cravens *et al.*, 1993; Sujan *et al.*, 1994; Schillewaert and Ahearne, 2000; Rapp *et al.*, 2006; Piercy *et al.*, 2009; Guesalaga, 2016).

4.2 Marketing-specific structural capital

Marketing-specific SC refers to *all marketing-related knowledge residing in a firm's information systems, databases, documents, manuals, routines and procedures, as well as in any other physical and/or digital artifacts*.

Given the proliferation of marketing-oriented IT solutions (e.g. CRM, customer experience management software, customer journey tracking software, social media management software, marketing intelligence software) and the significant possibilities now offered by data analytics, it is useful to distinguish between organizational knowledge generated by computer-based tools and more traditional forms of "organizational memory" (Walsh and Ungson, 1991) that do not involve data processing. Depending on the knowledge resource's origin and container, a distinction can be drawn between marketing-specific IT capital and marketing-specific organizational memory, each encompassing a range of knowledge objects.

4.2.1 Marketing-specific IT capital. This subcategory relates to marketing-related knowledge generated by different IT solutions. Based on an analysis of available solutions, 12 relevant knowledge resources can be identified. Of these, 7 relate to customer knowledge (potential new customers, customers' interests and concerns, sentiments and emotions, behavior, journey stage, profitability and existing customer groups and/or segments); 2 relate to product/service-related knowledge (product and/or service performance and opportunities for product/service improvement and/or development); a further 2 relate to market knowledge (about top industry insiders and influencers and market trends) and 1 relates to the internal context (marketing and sales staff performance).

4.2.2 Marketing-specific organizational memory. This subcategory includes any stored marketing-related knowledge that employees can access physically and/or digitally. Based on the knowledge management literature (Nelson and Winter, 1982; Frambach, *et al.*, 2003; Argote, 2006; Dalkir, 2011; Murray *et al.*, 2011; O'Dell and Hubert, 2011), seven relevant items were identified. Of these, 1 relates to customer knowledge (relevant and easily accessible

Table 2.
Constructs and measures

Constructs and measures	Item wording	Sources
Human capital (HC)		
Human capital, customer knowledge (HCCK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople have a very good knowledge of customers'...	Indicators extracted from Saxe and Weitz (1982), Sheth *et al.* (1999), Homburg *et al.* (2011), Trainor *et al.* (2011) and Mu (2015)
HCCK1	Needs	
HCCK2	Expectations and/or performance requirements	
HCCK3	Satisfaction levels	
HCCK4	Personality	
HCCK5	Behavior	
HCCK6	Circumstances	
HCCK7*	In overall, our marketing and salespeople know customers very well	
Human capital, technical knowledge (HCTK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople:	Scale adapted from Behrman and Perreault (1982), Cravens *et al.* (1993) and Rapp *et al.* (2006)
HCTK1	Know all the specifications of our products and/or services	
HCTK2	Know all the applications and functions of our products and/or services	
HCTK3	Know how our products and/or services differ from those of competitors	
HCTK4	Are able to detect causes of operating failure of our products and/or services	
HCTK5	Keep abreast of our company's product and/or service developments	
HCTK6*	Know our products and/or services very well	
Human capital, market knowledge (HCMK)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople:	Scale adapted from Schillewaert and Ahearne (2000) and Rapp *et al.* (2006)
HCMK1	Have a lot of information on industry trends	
HCMK2	Are well-informed about important events in our industry	
HCMK3	Are knowledgeable about our competitors' activities	
HCMK4	Keep abreast of the marketing strategies of our competitors	
HCMK5*	Are an excellent source of competitive information	
Human capital, educational background and experience (HCEBE)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople:	Self-developed scale, based on educational background and experience as key ingredients of human capital in traditional IC literature (e.g. Bontis, 1998 and Wang and Chang, 2005)
HCEBE1	Have a Marketing and Sales educational background	
HCEBE2	Have an updated knowledge of new Marketing concepts, tools and techniques (e.g. digital marketing, social media, etc.)	

(*continued*)

Table 2.

Constructs and measures	Item wording	Sources
HCEBE3	Have a high command of the languages needed to perform their work	
HCEBE4	Have an extensive professional experience in the marketing and sales domain	
HCEBE5	Have an extensive professional experience in the industry	
HCEBE6*	Have solid educational background and experience to perform their job	
Human capital, marketing-related skills (HCMS)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and salespeople have excellent…	Indicators extracted from Behrman and Perreault (1982), Spiro and Weitz (1990), Cravens *et al.* (1993), Sujan *et al.* (1994), Schillewaert and Ahearne (2000), Rapp *et al.* (2006), Piercy *et al.* (2009) and Guesalaga (2016)
HCMS01	Targeting skills (i.e. the ability to focus on the "right" customers or those with the highest potential)	
HCMS02	Adaptive skills	
HCMS03	Problem solving skills	
HCMS04	Communication skills	
HCMS05	Planning and organizational skills	
HCMS06	Expenditure management skills	
HCMS07	IT skills	
HCMS08	Social media management skills (e.g. Twitter, Facebook, Linkedin, Google+, Youtube)	
HCMS09	Teamwork skills	
HCMS10	Creativity	
HCMS11*	In overall, our marketing and salespeople have a high command of the skills needed to perform their job	
Structural capital (SC)		
Structural capital, marketing-specific IT capital (SCIT)	Rate the extent to which data processed by your company's marketing-related IT tools allow you to (1 = not at all, 7 = very satisfactorily):	Self-developed scale, based on knowledge outputs offered by different marketing-related IT solutions existing in the market (e.g. CRM, customer experience management software, customer journey tracking software, social media management software, marketing intelligence software and the like)
SCIT01	Identify potential new customers	
SCIT02	Identify your customers' interests and concerns	
SCIT03	Analyze your customers' sentiments and emotions	
SCIT04	Identify patterns of customer behavior	
SCIT05	Track your customers' journey	
SCIT06	Analyze customers' profitability	
SCIT07	Identify customer groups and/or segments	
SCIT08	Identify top industry insiders and influencers	
SCIT09	Identify market trends	
SCIT10	Analyze product and/or service performance	
SCIT11	Identify opportunities for product/service improvement and/or development	
SCIT12	Analyze the performance of your marketing and sales staff	
SCIT13*	In overall, our marketing-related IT tools generate very useful and relevant knowledge	

(*continued*)

Table 2.

Constructs and measures	Item wording	Sources
Structural capital, marketing-specific organizational memory (SCOM)	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)	Self-developed scale, based on knowledge management (KM) general literature (e.g. Nelson and Winter, 1982; Frambach, *et al.*, 2003; Argote, 2006; Dalkir, 2011; Murray *et al.*, 2011; O'Dell and Hubert, 2011)
SCOM1	We have well-established marketing routines and procedures	
SCOM2	We have an updated and easily accessible record (in whatever format: written, video or podcast) of sales and marketing best practices and lessons learned	
SCOM3	We have updated and easily accessible information records on key projects, deals and/or campaigns so employees can reuse them when needed	
SCOM4	We have a complete and updated "who knows what" directory so employees can easily find the right expert to take advice from when needed	
SCOM5	We have updated, relevant and easily accessible information records about customers	
SCOM6	We have updated, relevant and easily accessible information records about competitors	
SCOM7	We have updated and easily accessible information about relevant trends in our markets (e.g. technological trends, regulations, social, political and economic situation)	
SCOM8*	In overall, our company has relevant documented knowledge to support its marketing and sales function	
Relational capital (RC)		
Internal relational capital, department level (IRCD)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction within your marketing and sales department(s) (e.g. regular meetings, informal talks and joint work) give rise to:	Self-developed scale based on the definition of social/relational capital by Youndt *et al.* (2004), on marketing-specific knowledge objects (Rossiter, 2001; Kotler and Armstrong, 2018) and on the specific relationship context (internal: department level)
IRCD1	New and relevant insights about customers	
IRCD2	New and relevant insights about competitors	
IRCD3	New and relevant insights about markets	
IRCD4	New and relevant insights about technological trends	
IRCD5	Shared best practices	
IRCD6	Mutual learning	
IRCD7	Effective ways to diagnose and solve problems	
IRCD8	New perspectives that challenge existing assumptions	
IRCD9*	New and relevant knowledge to improve performance	

(*continued*)

Table 2.

Constructs and measures	Item wording	Sources
Internal relational capital, inter-department level (IRCID)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, informal talks and joint work) between your marketing and sales department(s) and other functions and/or departments give rise to:	Self-developed scale based on the definition of social/relational capital by Youndt *et al.* (2004), on marketing-specific knowledge objects (Rossiter, 2001; Kotler and Armstrong, 2018) and on the specific relationship context (internal: inter-department level)
IRCID1	A truly shared vision	
IRCID2	A good understanding of existing interdependencies (i.e. how our work affects and is affected by other functions and/or departments)	
IRCID3	A shared understanding of problems and challenges	
IRCID4	A shared understanding of system constraints	
IRCID5	A shared understanding of customer needs	
IRCID6	New and relevant insights about how to better integrate and/or coordinate work from different functions and/or departments	
IRCID7	Effective ways to diagnose and solve problems	
IRCID8	New perspectives that challenge existing assumptions	
IRCID9*	New and relevant knowledge to improve performance	
External relational capital (customers) (ERCC)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction with customers (e.g. regular meetings, visits, face-to-face events and joint work) give rise to:	Self-developed scale based on the definition of social/relational capital by Youndt *et al.* (2004), on marketing-specific knowledge objects (Rossiter, 2001; Kotler and Armstrong, 2018) and on the specific relationship context (external: customers)
ERCC1	A better understanding of customers	
ERCC2	A better understanding of how customers use our products and/or services	
ERCC3	The discovery of unsolved problems	
ERCC4	The discovery of improvement opportunities	
ERCC5	New and relevant insights about competitors	
ERCC6	Effective ways to diagnose and solve problems	
ERCC7	New perspectives that challenge existing assumptions	
ERCC8*	New and relevant knowledge to improve performance	
External relational capital (other external actors) (ERCO)	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, face-to-face events and joint work) between marketing and sales people and other external actors (e.g. regulators, suppliers, researchers, competitors. . .) give rise to	Self-developed scale based on the definition of social/relational capital by Youndt *et al.* (2004), on marketing-specific knowledge objects (Rossiter, 2001; Kotler and Armstrong, 2018) and on the specific relationship context (external: other external actors)
ERCO1	New and relevant insights about markets	
ERCO2	New and relevant insights about technological trends	
ERCO3	New and relevant insights about such external actors	
ERCO4	The discovery of new opportunities	
ERCO5	The discovery of potential threats	
ERCO6	The discovery of new and relevant practices that could be adopted by the company	
ERCO7	Effective ways to diagnose and solve problems	
ERCO8	New perspectives that challenge existing assumptions	
ERCO9*	New and relevant knowledge to improve performance	

Note(s): *Summary indicator for convergent validity assessment

information records about customers); 2 relate to market knowledge (relevant and easily accessible records about competitors and market trends); 1 relates to internal context ("who knows what") and 3 relate to know-how (availability of well-established routines and procedures, best practices and lessons learned and information records on key projects, deals and/or campaigns).

4.3 Marketing-specific relational capital

Marketing-specific RC refers to *all marketing-related knowledge generated, transferred and preserved through interpersonal relationships*.

Here, a division has been made between internal and external dimensions of RC, which can be said to yield distinct benefits for the firm from an IC perspective (see for example Yli-Renko *et al.*, 2002; Inkinen *et al.*, 2017). Depending on the actors involved and whether they are internal or external, these relationships can be grouped into four subcategories, each including items related to the different knowledge objects previously identified.

4.3.1 Internal relational capital (department level). This refers to the knowledge generated, transferred and preserved through interpersonal relationships within the marketing department. According to Allee (2003), socialization of a department's members and conversations about everyday work are an essential sensemaking mechanism and help to identify knowledge gaps and the resources needed to fill those gaps. In the case of the marketing function, personal interactions between peers can be said to deliver relevant insights about customers (1 item), markets (3 items) and know-how (3 items). More generally, these personal interactions may also prompt new perspectives that challenge existing assumptions about any knowledge object (1 item).

4.3.2 Internal relational capital (inter-department level). This refers to knowledge generated, transferred and preserved through interpersonal relationships between marketing personnel and those in other departments or functions. The literature confirms that knowledge sharing and collaboration between the marketing and other functions (e.g. research and development) contributes to firm performance (e.g. Salojärvi *et al.*, 2015). Personal interactions between people from different departments contribute to knowledge of the firm's internal context. In total, four knowledge items are proposed in relation to this knowledge object, referring to shared understanding of the overall firm setting (company vision, interdependencies between departments, problems and challenges and system constraints). Customer knowledge (one item) can also be strengthened through these relationships, as for instance when engineering personnel interact with customers and acquire information of relevance to the marketing department. Know-how-related aspects (two items) include better integration and/or coordination of work from different functions and departments and problem diagnostics and solutions). As in the previous subcategory, one further item is the possibility of generating new perspectives that challenge existing assumptions.

4.3.3 External relational capital (customers). This refers to the knowledge generated, transferred and preserved through interpersonal relationships between marketers and customers. Building quality relationships with clients has been extensively discussed in the marketing literature as a key determinant of various dimensions of market performance (e.g. Boles *et al.*, 1997; Walter *et al.*, 2001). From a knowledge perspective, personal interaction with customers can improve customer knowledge (2 items), as well as product/service knowledge (2 items) regarding the discovery of unsolved problems and opportunities for improvement, market knowledge (1 item) in terms of relevant insights about competitors and know-how (1 item) related to effective ways of diagnosing and solving problems. As in the previous subcategories, one further item relates to the generation of new perspectives that challenge existing assumptions.

4.3.4 External relational capital (other external actors). This refers to knowledge generated, transferred and preserved through interpersonal relationships between marketers and external actors other than customers. External networks are vital for the discovery of opportunities and testing of new ideas (Lee *et al.*, 2001), and this also applies to the marketing function (e.g. Doyle, 1995; Payne *et al.*, 2005). Personal interactions of this kind can substantially increase knowledge of the market in which the company operates (5 items). They can also provide know-how-related insights for the marketing department (2 items) in terms of new and relevant practices and effective ways of diagnosing and solving problems. As in the other subcategories, one further item has been included regarding the generation of new perspectives that challenge existing assumptions.

5. Scale validation

As content and face validity were already verified before the survey research, only convergent validity remained to be tested at this phase. Table 3 shows the correlation between each composite and the corresponding summary indicator (i.e. items marked with an asterisk in Table 2), and Table 4 presents descriptive analyses and VIF values for each indicator. The decision to consider mode A or mode B composites for future analyses depended on the VIF values obtained.

As shown in Table 3, all but one of the correlations are higher than 0.707; the exception is the correlation for *human capital, market knowledge* (HCMK), with a value of 0.692. As this value is extremely close to the threshold, it can be concluded that convergent validity is good enough in all composites. Moreover, as VIF values larger than 3 (see Table 4) were returned for *human capital, customer knowledge* (HCCK)*; human capital, product/service or technical knowledge* (HCTK)*; structural capital, marketing-specific IT capital* (SCIT) *and* all RC subcomponents, a mode A composite was proposed for these subcategories (see Table 3). Notice that differences in the value of *N* (i.e. the number of respondents) in Table 4 are due to the presence of some missing values (i.e. non-responses) in some of the items.

6. Marketing-related IC in Spanish firms

Once the marketing-specific IC architecture had been validated, a diagnostic of the participating Spanish firms was carried out. Table 5 reports the descriptive statistics and correlations for the whole sample (in order to obtain a clearer and more synthetic picture, the average score of the items making up each IC subcategory was used). As can be observed, the most developed subcategories of marketing-specific IC are those related to HC, followed by RC and then SC. Regarding HC, product/service or technical knowledge exhibits the highest degree of development (5.75), followed by market knowledge (5.56), marketing skills (5.55)

Composites	Correlation	Mode
HCCK	0.874	A
HCTK	0.837	A
HCMK	0.692	B
HCEBE	0.808	B
HCMS	0.828	B
SCIT	0.750	A
SCOM	0.856	B
IRCD	0.863	A
IRCID	0.888	A
ERCC	0.848	A
ERCO	0.863	A

Table 3.
Correlation between composites and summary indicators

Indicators	*N*	Mean	SD	VIF	Indicators	*N*	Mean	SD	VIF
HCCK1	346	5.72	1.07	2.890	SCOM1	345	4.86	1.42	2.038
HCCK2	346	5.63	1.07	3.154	SCOM2	345	4.04	1.70	2.471
HCCK3	346	5.69	1.11	2.114	SCOM3	344	4.81	1.56	2.129
HCCK4	345	5.23	1.23	3.409	SCOM4	345	3.96	1.66	2.040
HCCK5	346	5.34	1.19	3.899	SCOM5	341	4.85	1.46	1.761
HCCK6	340	5.27	1.21	2.802	SCOM6	346	4.17	1.57	2.677
HCTK1	346	5.92	1.08	4.381	SCOM7	346	4.42	1.58	2.405
HCTK2	346	5.96	1.07	3.744	IRCD1	346	5.37	1.19	3.890
HCTK3	346	5.78	1.16	2.471	IRCD2	346	5.14	1.25	3.609
HCTK4	344	5.37	1.38	1.920	IRCD3	346	5.23	1.18	3.268
HCTK5	345	5.73	1.17	2.245	IRCD4	344	5.09	1.26	2.341
HCMK1	344	5.69	1.10	2.592	IRCD5	346	5.12	1.27	4.706
HCMK2	345	5.83	1.05	2.772	IRCD6	345	5.23	1.36	5.307
HCMK3	343	5.69	1.07	2.431	IRCD7	345	5.19	1.30	4.396
HCMK4	345	5.03	1.26	2.033	IRCD8	343	5.00	1.32	3.523
HCEBE1	344	5.32	1.54	2.510	IRCID1	343	5.21	1.28	3.694
HCEBE2	346	5.30	1.51	2.305	IRCID2	343	5.21	1.33	4.386
HCEBE3	345	5.62	1.25	1.350	IRCID3	344	5.20	1.27	7.416
HCEBE4	346	5.52	1.31	2.348	IRCID4	342	5.09	1.26	4.753
HCEBE5	346	5.74	1.21	1.799	IRCID5	344	5.21	1.31	4.405
HCMS01	344	5.50	1.13	1.922	IRCID6	344	5.08	1.35	5.164
HCMS02	344	5.76	1.05	2.407	IRCID7	345	5.06	1.35	5.180
HCMS03	345	5.84	1.04	2.585	IRCID8	344	4.93	1.38	3.960
HCMS04	344	5.78	1.08	2.478	ERCC1	344	5.65	1.10	3.718
HCMS05	344	5.49	1.19	2.758	ERCC2	343	5.73	1.08	4.006
HCMS06	340	5.41	1.21	1.863	ERCC3	343	5.46	1.20	3.292
HCMS07	342	5.32	1.28	2.163	ERCC4	343	5.70	1.13	4.370
HCMS08	343	5.06	1.56	1.745	ERCC5	342	5.30	1.35	2.253
HCMS09	345	5.83	1.20	2.512	ERCC6	344	5.39	1.22	3.943
HCMS10	339	5.55	1.22	2.263	ERCC7	344	5.32	1.29	3.364
SCIT01	345	4.70	1.53	3.253	ERCO1	341	5.18	1.32	4.299
SCIT02	344	4.74	1.52	4.491	ERCO2	341	5.19	1.31	3.267
SCIT03	344	4.11	1.67	3.449	ERCO3	340	5.07	1.31	4.296
SCIT04	341	4.50	1.58	3.816	ERCO4	341	5.23	1.29	4.314
SCIT05	343	4.49	1.63	3.346	ERCO5	340	5.11	1.35	4.269
SCIT06	344	5.19	1.44	1.690	ERCO6	341	5.21	1.28	3.671
SCIT07	340	5.13	1.42	3.091	ERCO7	340	4.97	1.35	5.487
SCIT08	341	4.33	1.70	2.265	ERCO8	341	4.94	1.37	5.501
SCIT09	344	5.01	1.52	3.456					
SCIT10	344	5.04	1.43	3.127					
SCIT11	344	4.93	1.45	3.580					
SCIT12	342	5.04	1.42	2.259					

Table 4.
Descriptive analyses and VIF values (indicator level)

and customer knowledge (5.48). In the case of marketing-specific RC, customer capital is the most prominent subcategory (5.51), followed at some distance by other types of RC, with values that are closely bunched (around 5.1 in all cases). Finally, marketing-specific SC is some distance from the other blocks, with values of 4.77 for marketing-specific IT capital and 4.44 for marketing-specific organizational memory.

Having gained this overall picture and because previous studies have shown that IC differs across firms of different types (e.g. Kianto *et al.*, 2010; Buenechea-Elberdin, 2017), *T*-tests were conducted among the previously defined groups of firms to examine whether this also applies to marketing-specific IC (Table 6). The significant differences ($p > 0.10$) between groups are reported below.

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. HCCK	5.48	0.97										
2. HCTK	5.75	1.00	0.648**									
3. HCMK	5.56	0.94	0.532**	0.523**								
4. HCEBE	5.50	1.00	0.542**	0.475**	0.452**							
5. HCMS	5.55	0.89	0.570**	0.524**	0.549**	0.684**						
6. SCIT	4.77	1.22	0.550**	0.489**	0.435**	0.455**	0.546**					
7. SCOM	4.44	1.23	0.472**	0.442**	0.437**	0.506**	0.556**	0.685**				
8. IRCD	5.17	1.07	0.491**	0.469**	0.463**	0.402**	0.591**	0.492**	0.551**			
9. IRCID	5.13	1.18	0.559**	0.484**	0.423**	0.443**	0.610**	0.526**	0.612**	0.745**		
10. ERCC	5.51	1.04	0.502**	0.437**	0.396**	0.390**	0.489**	0.379**	0.425**	0.628**	0.604**	
11. ERCO	5.12	1.17	0.429**	0.344**	0.392**	0.438**	0.501**	0.492**	0.476**	0.548**	0.529**	0.555**

Note(s): **Correlation is significant at the 0.01 level (2-tailed)

Table 5.
Descriptive statistics and correlations (construct level)

Table 6.
T-tests among different groups of firms (construct level)

Variable	B2B; B2C	*N*	Mean	SD	Sig. of mean difference	Manufacturing = M; Services = S	*N*	Mean	SD	Sig. of mean difference	High tech = HT; low tech = LT	*N*	Mean	SD	Sig. of mean difference
HCCK	B2B	214	5.44	0.96	0.389	M	179	5.56	0.88	0.134	HT	103	5.41	0.98	0.397
	B2C	132	5.54	0.97		S	167	5.40	1.05		LT	243	5.51	0.96	
HCTK	B2B	214	5.65	1.04	*0.012*	M	179	5.71	0.96	0.402	HT	103	5.59	1.07	*0.055*
	B2C	132	5.93	0.91		S	167	5.80	1.04		LT	243	5.82	0.97	
HCMK	B2B	214	5.48	0.94	*0.056*	M	178	5.53	0.90	0.504	HT	103	5.62	0.92	0.469
	B2C	131	5.68	0.93		S	167	5.60	0.98		LT	242	5.54	0.95	
HCEBE	B2B	214	5.43	0.97	0.112	M	179	5.47	0.92	0.512	HT	103	5.66	0.89	*0.053*
	B2C	132	5.61	1.05		S	167	5.54	1.08		LT	243	5.43	1.04	
HCMS	B2B	213	5.50	0.87	0.180	M	178	5.44	0.88	*0.012*	HT	102	5.53	0.92	0.742
	B2C	132	5.64	0.91		S	167	5.68	0.87		LT	243	5.56	0.87	
SCIT	B2B	214	4.65	1.25	*0.016*	M	178	4.73	1.21	0.543	HT	103	4.59	1.26	*0.077*
	B2C	131	4.97	1.13		S	167	4.81	1.22		LT	242	4.84	1.19	
SCOM	B2B	214	4.32	1.21	*0.024*	M	179	4.30	1.23	*0.034*	HT	103	4.38	1.22	0.534
	B2C	132	4.63	1.25		S	167	4.59	1.22		LT	243	4.47	1.24	
IRCD	B2B	214	5.08	1.12	*0.041*	M	179	5.14	1.07	0.605	HT	103	5.10	1.09	0.388
	B2C	132	5.32	0.99		S	167	5.20	1.08		LT	243	5.21	1.07	
IRCID	B2B	214	5.01	1.22	*0.018*	M	179	5.08	1.20	0.502	HT	103	5.01	1.30	0.261
	B2C	131	5.32	1.10		S	166	5.17	1.16		LT	242	5.18	1.13	
ERCC	B2B	213	5.51	1.02	0.987	M	179	5.55	0.94	0.472	HT	102	5.58	0.96	0.397
	B2C	131	5.51	1.06		S	165	5.47	1.13		LT	242	5.48	1.07	
ERCO	B2B	211	5.10	1.16	0.775	M	178	5.13	1.10	0.819	HT	102	5.25	1.06	0.179
	B2C	131	5.14	1.19		S	164	5.10	1.25		LT	240	5.06	1.21	

Note(s): Values in italics show those cases in which significant differences have been found

The first comparison examined differences between B2B and B2C companies. As marketing differs in B2B and B2C contexts (Kotler *et al.*, 2006), it can be assumed that marketing-specific IC will also differ. The results show that, overall, marketing-specific IC is more developed in B2C than in B2B firms, with significant differences in several IC subcategories. There were differences in HC, where product/service or technical knowledge, as well as market knowledge, were more developed in B2C than in B2B firms (comparative scores were 5.93 vs 5.65 and 5.68 vs 5.48, respectively). Further, all SC subcomponents returned larger scores in B2C companies (4.97 vs 4.65 in the case of marketing-specific IT capital and 4.63 vs 4.32 in the case of other types of organizational memory). Regarding RC, values obtained for internal relational subcomponents were also significantly larger in B2C firms (5.32 vs 5.08 in the case of internal RC at the department level and 5.32 vs 5.01 in the case of internal RC at the inter-department level).

The second comparison looked at the differences between manufacturing and service companies. Although, according to Kianto *et al.* (2010), IC differs between manufacturing and service firms, few differences were found within the marketing context. In relation to HC (marketing-related skills) and SC (marketing-specific organizational memory), service companies returned significantly larger values than manufacturing firms (comparative scores were 5.68 vs 5.44 and 4.59 vs 4.30, respectively).

The third and final comparison explored differences between high-tech and low-tech companies. As others have shown (e.g. Sáenz *et al.*, 2017), IC configurations differ according to company technology intensity, and some significant differences also emerged in the marketing context. In terms of HC, marketing employees in low-tech companies exhibited higher product/service technical knowledge (5.82 vs 5.59), although their educational background and experience was lower than that of employees in high-tech firms (5.66 vs 5.43). Unsurprisingly, the level of marketing-specific IT is significantly higher in high-tech companies (4.84 vs 4.59).

7. Discussion

In attempting to develop a model of IC with an improved managerial application, the present study developed and validated a knowledge resources measurement scale, which is specific for the domain of marketing. The marketing function is a useful context in which to develop such a scale in light of its distinctive but universally important organizational role.

Previously, a literature review was carried out aimed at tracing back the conceptualization, categorization and specification of IC and the influence of such issues on empirical research analyzing the IC-performance linkage. An examination of such research revealed several challenges related to IC measurement. These include measurement model misspecification (i.e. using common factor models instead of composites); lack of comparability between studies due to differences in the breadth of content selected by different authors for similar IC categories; usage of very generic and synthetic indicators to grasp each of the multiple elements making up each IC component (which gives rise to very unspecific recommendations) and potential dependency relationships between elements within the same construct (especially when practices, resources and outcomes are mixed up within the same construct).

Therefore, to improve relevance and consistency of IC measurement, the proposition was made to focus on the knowledge view of IC (i.e. to exclude other intangible resources, practices and outcomes) and to deepen into the qualities of knowledge, in particular, into knowledge contextuality. As already argued by Kianto *et al.* (2018), knowledge is always idiosyncratic and organization-specific, right down to the micro level of teams, functions and divisions. The present study adopted this micro-level view to contextualize IC within the marketing function. In the following, theoretical and practical contributions of the research are discussed in detail.

7.1 Theoretical contributions

The study introduced a new marketing-specific IC scale in response to recent calls for a contextualized (Kianto *et al.*, 2018) perspective. As compared to previously existing scales, an effort was made to identify those knowledge resources truly specific to the marketing function (i.e. the focal context). While there are studies that examine marketing assets and their relationship to IC as separate constructs (see Pucci *et al.*, 2015), our approach pursues to contextualize IC directly in the marketing context.

Following Nahapiet and Ghoshal (1998), knowledge about *facts* was first considered. The latter involved identifying those entities on which marketers need to know what is going on to perform their job. The following were identified: customers, products and/or services, market(s) and the internal context of the firm. Second, knowledge about *concepts and frameworks* was included (i.e. disciplinary knowledge or knowledge about theories and principles that guide managerial action). Both of them (i.e. facts, on the one hand and concepts and frameworks, on the other) imply explicit or *conscious knowledge*. Finally, *automatic knowledge* (i.e. skills) or knowledge about how to do something (in this case, marketing tasks and activities) was considered.

Once these knowledge objects were identified, specific knowledge resources related to them (i.e. specific "pieces of knowledge") were distributed across the three main groups of knowledge "containers" distinguished in the literature: people (i.e. HC), the organization (i.e. SC) and relationships (i.e. RC). In the case of SC and RC, additional subcategories were created according to more specific knowledge repositories, whereas in the case of HC, the subcategories identified referred to the knowledge objects previously outlined.

The method used to define this scale—identifying relevant knowledge objects in the focal context and how they are distributed among people, the organization and relationships as knowledge "containers"—could also be used to develop more practical IC models for other contexts.

From a methodological perspective, the research carried out also provides a relevant reflection on the type of conceptual variables that IC components represent and the subsequent measurement model that should be applied. Using Rigdon's (2012) expression, IC constitutes one the fields in which it could be said the use of common factor models might have been "oversold".

Moreover, the empirical illustration of the scale offers interesting additional insights into the development of knowledge resources in the marketing function and across companies of different types. From a global perspective, the greater development of human-capital-related subcategories (as compared to RC and SC) suggests that people are the main foundation of IC, and that development of the other dimensions is dependent on employees' knowledge and skills.

One major finding is that the overall level of marketing-related IC is higher among B2C companies (rather than B2B) (see Table 6). Several characteristics of B2C companies (Kotler *et al.*, 2006) could explain the existence of more developed marketing-related IC in these firms as compared to B2B companies. First, consumer products tend to be less complex than industrial ones, which could explain that marketing professionals in B2B firms experience more difficulties to master product/service technical knowledge. Second, in B2C industries, information about competitors' offering is much more visible, which makes the acquisition of market knowledge much easier. Third, the size of the customer base is much larger in B2C companies than in B2B firms, which increases the need for IT-based solutions that help manage relevant information about customers and their transactions in order to identify different patterns of behavior (see also Kannan and Li, 2017). Fourth, marketing actions and campaigns tend to be much more numerous and frequent in B2C companies, which increases the need for building up an "organizational memory" that could facilitate reusing relevant knowledge in future actions. Fifth, unlike in B2B companies (in which quite frequently some

marketing tasks are developed by professionals without a marketing background and from other areas of the company, such as engineering), in B2C firms marketing professionals tend to have a much more focused marketing orientation and background. This increases the need of a strong internal RC that facilitates the transmission of customers' demands and their fulfillment.

Although comparisons of manufacturing and service companies and high-tech and low-tech firms revealed fewer differences in terms of marketing-related knowledge resources, some interesting issues nevertheless emerged (see Table 6). First, as low-tech firms deal with products and services that are less complex than those of high-tech firms, it is easier to know them well, as demonstrated by higher levels of technical knowledge. The higher complexity of knowledge exhibited by high-tech firms (Schilling, 2011) confirms their greater need for highly educated people (Sáenz *et al.*, 2017), and their technology focus means that they use more sophisticated IT tools and solutions. In the case of service firms, the personnel-intensive nature of service provision (Kianto *et al.*, 2010) enhances the role of HC, especially in relation to employee skills and abilities, as the findings confirmed. Additionally, services involve a much higher degree of personalization than manufactured products (Kianto *et al.*, 2010), as reflected in the observed higher levels of organizational memory that help provide each customer with his/her preferred service options on each occasion.

7.2 Managerial implications

To paraphrase Dumay (2016), the proposed marketing-specific IC scale is a more suitable, useful and executable tool for practitioners. As several of the participating managers acknowledged, the new scale provides a complete self-assessment tool that enables marketing managers to perform an in depth-analysis of the strengths and weaknesses of their department in terms of knowledge resources. Based on the identified IC categories and their detailed constituents, this collective assessment by marketing personnel can provide a basis for dialog and discussion, as well as for decision-making and action plans to address any relevant gaps. Periodical assessment would help to evaluate development trajectories along different dimensions and how proposed development initiatives might affect different aspects of IC evolution.

7.3 Limitations and future research

Like any study, this paper has some limitations. First, as the sample comprised only Spanish firms, findings may have been influenced by national characteristics. While this should not affect the validity of the suggested measurement instrument in itself (see research methods), the level of development of marketing-specific IC categories and constituents is likely to vary across cultural contexts (see, e.g. Sáenz *et al.*, 2017). Put it differently, absolute IC scores may vary depending on the geographical context of the research, but relative differences between different groups of firms (B2B vs B2C companies, high-tech vs low-tech firms or manufacturing vs service companies) are expected to remain unchanged, due to group characteristics that are irrespective of the national context. Nevertheless, future research should test the model in other geographical settings to highlight differences in absolute scores. Second, the data reflect the opinions and perceptions of a single person in each of the surveyed companies. However, it should also be noted that the selected individuals were the most knowledgeable in the present context. Finally, the paper provides only a descriptive illustration of marketing-related IC in the participating companies, with no deeper account of the impact on capability development and performance improvement. Future research should explore how marketing-specific IC and its individual constituents affect the development of different types of capability and performance.

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Appendix

Authors	IC definition	IC components
Brooking (1996)	"Intellectual capital is the term given to the combined intangible assets that make a company to function" (p. 12)	"*Human-centered assets* comprise the collective expertise, creative and problem solving capability, leadership, entrepreneurial and managerial skills embodied by the employees of the organization" (p. 15). They also include psychological characteristics regarding how individuals may perform in given situations, such as in a team or under stress "*Infrastructure assets* are those technologies, methodologies and processes which enable the organization to function. Examples include corporate culture, methodologies for assessing risk, methods of managing a sales force, financial structure, databases of information on the market or customers, communications systems such as e-mail and teleconferencing systems" (p. 16). It refers to the way the above items are used in the organization "*Intellectual property assets* include know-how, trade secrets, copyright, patent and various design rights. They also include trade and service marks" (p. 14) "*Market assets* are the potential an organization has due to market-related intangibles. Examples include various brands, customers and their loyalty, repeat business, backlog, distribution channels, various contracts and agreements such as licensing, franchises and so on" (p. 13)
Saint-Onge (1996)	Intellectual capital is the combination of human capital, structural capital, and customer capital	*Human capital* refers to "the capabilities of the individuals required to provide solutions to customers" (p. 10) *Structural capital* consists of "the capabilities of the organization to meet market needs" (p. 10) *Customer capital* refers to "the depth (penetration), width (coverage), attachment (loyalty), and profitability of customers" (p. 10)

Table A1.
The evolution of the intellectual capital – definition and components

(*continued*)

Authors	IC definition	IC components
Edvinsson (1997); Edvinsson and Malone (1997)	Intellectual capital corresponds to the difference between market value and book value "It refers to the possession of knowledge, applied experience, organizational technology, customer relationships, and professional skills that provides [a company] with a competitive edge in the market" (Edvinsson, 1997, p. 368)	*Human capital* refers to what is the mind and in the hearts of employees. It is made up of employees' competences and capabilities and of the firms' commitment to support and update them *Structural capital* encompasses process capital and renewal and development: (1) *Process capital* refers to the technological infrastructure of the company (2) *Renewal and development* show how the company is preparing itself for the future *Customer capital* refers to company-customer relationships
Stewart (1997)	Intellectual capital is "talent, skills, know-how, know-what, and relationships – and machines that embody them – that can be used to create wealth" (p. 11) "Intellectual capital is knowledge that transforms raw materials and make them more valuable" (p. 12)	*Human capital* refers to the skills and knowledge of employees *Structural capital* includes intellectual property, methodologies, software, documents, and other knowledge artifacts *Customer capital* refers to relationships with customers and suppliers
Sveiby (1997)	Intellectual capital is the invisible part of the balance-sheet.	*Employee competence* "includes the capacity of employees to act in a wide variety of situations. People create two kinds of intangible structures, internal and external" (p. 76) "*Internal structure* may include patents, concepts, models and computer and administrative systems. These are created by the employees and are thus generally 'owned' by the organization and adhere to it. Sometimes they can be acquired elsewhere" (p. 76) "Also, the 'culture' or the 'spirit' belongs to the internal structure" (p. 76) "*External structure* may include relationships with customers and suppliers, brand names, trademarks and reputation or 'image'" (p. 76)
Bontis (1998)	Intellectual capital is "the stock unit of organizational learning flows" (p. 65) It is the sum of human capital, structural capital and customer capital	*Human capital* refers to the intelligence of organizational members. It includes individual tacit knowledge (i.e. inarticulable skills necessary to perform a function). It is a combination of genetic inheritance, education, experience and attitudes about life and business. It is the source of innovation and strategic renewal *Structural capital* refers to organizational routines. It deals with the mechanisms and structures (e.g. culture, information systems) of the organization that can help support employees in their quest for optimum intellectual performance and therefore overall business performance *Customer capital* refers to market relationships. It also involves knowledge of marketing channels

(*continued*)

Table A1.

Authors	IC definition	IC components
Nahapiet and Ghoshal (1998)	Intellectual capital refers to "the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice" (p. 245)	*Individual explicit knowledge* or "conscious" knowledge (i.e. "facts, concepts, and frameworks that can be stored and retrieved from memory or personal records"; p. 247) *Individual tacit knowledge* or "automatic" knowledge. It includes "theoretical and practical knowledge of people and the performance of different kinds of artistic, athletic, or technical skills" (p. 247) *Social explicit knowledge* or "objectified" knowledge. It represents "the shared corpus of knowledge – epitomized, for example, by scientific communities, and often regarded as the most advanced form of knowledge" (p. 247) *Social tacit knowledge* or "collective" knowledge. It represents "the knowledge that is fundamentally embedded in the forms of social and institutional practice and that resides in the tacit experiences and enactment of the collective" (p. 247). This shared knowledge has been defined as "routines"
	(*) Social capital is considered a key driver of intellectual capital	*(*) Social capital* is "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" (p. 243). It encompasses three dimensions: structural (i.e. "the overall pattern of connections between actors"; p. 244), relational (i.e. "the particular relations people have, such as respect and friendship, that influence their behavior"; p. 244), and cognitive (i.e. "those resources providing shared representations, interpretations, and systems of meaning among parties"; p. 244)
Roos *et al.* (1998)	"Intellectual capital is made up of al the invisible processes and assets of the company" (p. 30) "Human beings, organizational structure and external relations have been identified as the repositories for intellectual capital" (p. 32)	*Human capital* is the thinking side of intellectual capital. It is not owned by the company, but it is the "soul" of the firm. It includes competence (i.e. the knowledge, skills, talents, and know-how of employees), attitude (which covers the value generated by the behavior of the employees on the workplace), and intellectual agility (i.e. the ability to apply knowledge in very different situations, as well as the ability to innovate and transform ideas in products) *Structural capital* is the non-thinking side of intellectual capital and it is owned by the company. "It includes all databases, organizational charts, process manuals and intellectual property, and anything whose value to the company is higher than its material value" (p. 42). It can be split into three subcomponents: (1) *Organization:* It encompasses infrastructure (i.e. the structural layout of the organization and its intellectual property), processes (i.e. the operations that make the organization tick and that can be transmitted orally or by means of documents and manuals), and culture. Internal networks are also part of this category of capital (2) Relationships (external actors): It includes relationships with customers, suppliers, alliance partners, shareholders, and other stakeholders (3) *Renewal and development value:* It "includes the intangible side of anything and everything that can create value in the future" (p. 51). This refers to "all the items that have been built or created and that will have an impact on future value, but have not manifested that impact yet" (p. 51)

Table A1. (*continued*)

Authors	IC definition	IC components
Sullivan (1999)	"Intellectual capital is knowledge that can be converted into profits" (p. 133)	"*Human capital* consists of a company's individual employees, each of whom has skills, abilities, knowledge, and knowhow" (p. 133) "*Intellectual assets* are created whenever the human capital commits to paper (or any other form of media) any bit of knowledge, know-how, or learning. Once "written", the knowledge is codified and defined" (p. 133) "Examples of intellectual assets include plans, procedures, memos, sketches, drawings, blueprints, and computer programs, to name but a few. Any items in this list that are legally protected are called intellectual property" (p. 133)
Meritum Project (2002)	"The terms intangibles and intellectual capital are used to refer to the same concept. Both are applied to non-physical sources of future economic benefits that may or may not appear in corporate financial reports" (p. 61) "Intellectual capital is the combination of the human, organizational and relational resources of an organization" (p. 63)	"*Human capital* is defined as the knowledge that employees take with them when they leave the firm" (p. 63) It includes the knowledge, skills, experience and abilities of people, but also their motivation, satisfaction and loyalty "*Structural capital* is defined as the knowledge that stays within the firm at the end of the working day" (p. 63) "It comprises the organizational routines, procedures, systems, cultures, databases, etc." (p. 63) "*Relational capital* is defined as all resources linked to the external relationships of the firm" (p. 63) It includes relationships with customers, suppliers, investors, creditors or R&D partners It includes knowledge, but also other elements such as image, customer loyalty, customer satisfaction, commercial power, etc.
Youndt *et al.* (2004)	"Intellectual capital is the sum of all knowledge an organization is able to leverage in the process of conducting business to gain competitive advantage" (p. 337)	"*Human capital* simply refers to individual employee's knowledge, skills, and abilities" (p. 338) "*Organizational capital* represents institutionalized knowledge and codified experience stored in databases, routines, patents, manuals, structures, and the like" (p. 338) "In essence, organizational capital is the knowledge, skills, and information that stays behind when an organization's people go home at night" (p. 338) "*Social capital* is an intermediary form of intellectual capital consisting of knowledge in groups and networks of people" (p. 338) "More specifically, social capital consists of knowledge resources embedded within, available through, and derived from a network of relationships" (p. 338) "Such relationships are not limited to internal knowledge exchanges among employees, but also extend to linkages with customers, suppliers, alliance partners, and the like" (p. 338)
Marr (2006)	Intellectual capital is defined as "non-tangible resources that are attributed to an organization and which support an organization's competencies and therefore contribute to the delivery of the organizational value proposition to its various stakeholders" (p. 42)	"*Human resources* can be thought of as the living and thinking part of the intangible resources" (p. 43) They include the skills and knowledge of employees, as well as know-how in certain fields that are important to the success of the enterprise, plus the aptitudes and attitudes of its staff, and employee loyalty, motivation, flexibility, and experience "*Structural resources* cover a broad range of vital factors" (p. 45) They include the organization's essential operating processes, the way it is structured, its policies, its information flows and the content of its databases, its leadership and management style, its culture and its incentive schemes, as well as intellectual property "*Relational resources* are the relationships that exist between an organization and any outside party, both with key individuals and other organizations" (p. 44) These relationships "can include customers, intermediaries, employees, suppliers, alliance partners, regulators, pressure groups, communities, creditors or investors" (p. 44)

(*continued*)

Table A1.

Authors	IC definition	IC components
Bueno *et al.* (2011)	N.A.	*Human capital* "is made up of that which people and groups know and by the capacity to learn and share this knowledge with others for the benefit of the organization" (p. 15) It includes values and attitudes (feeling of belonging and commitment, self-motivation, satisfaction, sociability and customer orientation, flexibility and adaptability, and creativity), aptitudes (formal education, specialized training, in-house training, experience, and personal development), and capacities or know-how (learning, collaboration, communication, work-life balance, and leadership) *Structural capital* "is the combination of knowledge and intangible assets derived from the processes of action of the organization and which remain in it when people leave" (p. 17). It can be split into: (1) *Technological capital:* It includes the organization's effort in R&D, its technological infrastructure, intellectual and industrial property, and technology watch (2) *Organizational capital:* It includes organizational culture, structure, organizational learning, and processes *Relational capital* "is the combination of knowledge which is incorporated in the organization and people, as a consequence of the value derived from the relationships which they maintain with market agents and with society in general" (p. 23). It can be split into: (1) *Business capital:* It includes relationships with customers; suppliers; shareholders, institutions, and investors; Allies; competitors and institutions for quality improvement and promotion (2) *Social capital:* It includes relationships with public administrations; relationships with the media and corporate image; relationships with institutions for environmental defense; relationships with social organizations and corporate reputation *Entrepreneurship and innovation capital* is made up of innovation outcomes, innovation efforts, and R&D attitudes and capacities

Table A1.

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Publication II

Peñalba-Aguirrezabalaga, C., Sáenz, J., Ritala, P., and Vanhala, M**.**
Putting knowledge to work: The combined role of marketing and sales employees' knowledge and motivation to produce superior customer experience

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Putting knowledge to work: the combined role of marketing and sales employees' knowledge and motivation to produce superior customer experiences

Carmela Peñalba-Aguirrezabalaga, Josune Sáenz, Paavo Ritala and Mika Vanhala

Abstract

Purpose – *This paper aims to adopt a contextual approach to the knowledge-performance linkage by deepening into the role of marketing and sales employees' knowledge resources in the generation and delivery of superior customer experiences (CEs) and into the motivational antecedents of knowledge acquisition and development.*

Design/methodology/approach – *To gather information about the variables studied in this research, a survey was conducted among Spanish firms with at least 100 employees, resulting in a representative sample of 346 companies. Structural equation modeling based on partial least squares was then applied to test the hypothesized relationships.*

Findings – *The results show that employees' motivation (and especially intrinsic motivation) affects CE both directly and indirectly through its influence on marketing-specific human capital. More precisely, customer knowledge and different types of marketing-related skills (creativity, targeting, problem-solving, social media management and communication skills) are the only constituents of marketing-specific human capital that significantly affect relative CE performance (i.e. performance vis-à-vis competitors), while product/service and market knowledge do not play a relevant role.*

Originality/value – *The results contribute both to the knowledge management and intellectual capital literatures by highlighting the motivational levers of human capital in the context of the marketing and sales function and the specific types of employee knowledge resources that induce superior CEs. Consequently, marketing and sales managers are provided with useful guidance to shape their human resource management policies and to establish their knowledge priorities.*

Keywords *Marketing, Knowledge, Customer experience, Employee motivation, Human capital*

Paper type *Research paper*

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1. Introduction

Recently, there have been calls for a more contextualized approach in the study of intellectual capital (IC) and firm performance (Kianto *et al.*, 2018; Peñalba-Aguirrezabalaga *et al.*, 2020) that would allow a more accurate examination of the specific knowledge resources that need to be fostered in particular settings, beyond the broad categorization of such resources into the human, structural and relational capital. As a response to this call, the current study zooms into the knowledge resources relevant for marketing and sales employees (i.e. marketing-specific human capital; Peñalba-Aguirrezabalaga *et al.*, 2020) and into the role of motivation in mobilizing knowledge to produce superior customer experiences (CEs).

Executives in several industries have paid growing attention to the concept of CE in the past decade. One might even say that companies no longer compete on the quality of products

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and services but rather on the experience they deliver (Gorgoglione and Panniello, 2018). According to past research, CE plays a significant role in the cognitive and affective buying behavior of customers, thus acting as a key antecedent of customer loyalty (Roy, 2018). However, the study of CE as a type of performance that also deserves attention has been largely overlooked by the IC-performance literature. Customers interact with firms through myriad touch points in multiple channels and media, thereby inducing customer journeys (i.e. the path of sequential steps and interactions that a customer goes through with a product or service; Varnali, 2019) that are more complex than they used to be (Lemon and Verhoef, 2016). Under these circumstances, knowledgeable employees become more relevant than even before, as it is more difficult for firms to create, manage and control the experience and journey of each customer.

Given the involvement of marketing and sales employees in generating and delivering CEs, marketing managers must guide knowledge acquisition and development efforts in their domain, both in terms of "conscious" knowledge (e.g. knowledge about facts, characteristics and trends) and "automatic" knowledge (i.e. skills, abilities or know-how) (Nahapiet and Ghoshal, 1998). However, there is still a major research gap in the CE literature regarding the role of employees (and more precisely, their knowledge and skills) in providing a consistently positive CE (Harris *et al.*, 2000; Lemke *et al.*, 2011; Waqas *et al.*, 2020). Consequently, marketing managers lack the guidance to define their knowledge priorities and to adapt human resource management (HRM) policies and practices accordingly.

Regarding the latter (i.e. HRM policies and practices), motivation could play a critical role by boosting employee knowledge acquisition and development and by enacting other types of attitudes and behavior conducive to superior CEs. Without motivation, the ability (and knowledge) in itself is often insufficient for individuals to perform well in organizational contexts (Kim *et al.*, 2015). Past research has shown the relationship between motivation and works attitudes, such as organizational commitment (Castaing, 2006; Kim *et al.*, 2020) and between motivation and different types of behavior at work, such as organizational citizenship behavior (Kim, 2006; Barbuto and Story, 2011), innovativeness (Amabile, 1997; Ritala *et al.*, 2020) and learning (Noe *et al.*, 2010; Vanthornout *et al.*, 2014).

Accordingly, in this study, we develop hypotheses for the positive role of marketing-specific human capital (i.e. marketers' conscious or explicit knowledge regarding customers, product/services and markets, as well as automatic knowledge or skills – namely, targeting, adaptive, problem-solving, creative, teamwork, communication and social media management skills) on relative CE performance, as well as on the positive role of different types of motivation (intrinsic and extrinsic) on marketing-specific human capital and CE performance *vis-à-vis* competitors. In other words, we expect that, in addition to a direct antecedent role, motivation will influence relative CE performance by enhancing the acquisition of new knowledge and skills by marketing and sales employees.

Our research contributes to the knowledge management (KM) and IC literature by proposing a more fine-grained approach to the study of the IC-performance linkage that considers knowledge specificities at the functional level (in this case, within the marketing and sales function), and the combined role of motivation and knowledge to produce superior performance (in this case, perceived CE performance). In practice, the results help to clarify the type of knowledge and skills that need to be privileged in recruitment and training programs within the marketing and sales function, as well as the motivational levers (i.e. intrinsic and extrinsic – i.e. identification, introjection and external regulation; Gagné *et al.*, 2010) that best support successful performance in this domain (i.e. CE). This understanding can accordingly be used to shape HRM policies, eventually improving the way firms could generate superior CEs and satisfaction.

2. Theoretical background

2.1 The role of employees in customer experience

According to Berry *et al.* (2002), offering products and services alone is insufficient: organizations must provide their customers with satisfactory experiences. Indeed, managing CE has become a top priority for marketing managers, scholars and researchers (Klaus *et al.*, 2013; Lemon and Verhoef, 2016) because of its relevance for the competitiveness and success of firms (Waqas *et al.*, 2020; Witell *et al.*, 2020). After analyzing the major accepted definitions of the concept, Lemon and Verhoef (2016) concluded that CE is a multidimensional construct focusing on customers' cognitive, emotional, behavioral, sensorial and social responses to a firm's offerings during the customers' entire purchase journey. In other words, CE encompasses the total experience, including the search, purchase, consumption and after-sales phases (Verhoef *et al.*, 2009; Lemke *et al.*, 2011) and it comprises the internal and subjective responses that customers have to any direct or indirect contact with a company (Meyer and Schwager, 2007).

There are multiple elements by which CE is created (Verhoef *et al.*, 2009). In their systematic literature review on the topic, Waqas *et al.* (2020) classified these antecedents of CE into three groups, namely, attitudinal, firm-controlled and context-based. The first group of drivers refers to customer psychological factors or mental states that could induce positive or negative CEs. Such factors could be rational, emotional, sensorial, physical and spiritual (Gentile *et al.*, 2007; Gorgoglione and Panniello, 2018). The second group includes elements that can be modified and controlled by the firm, such as the marketing mix, service quality, speed of service and service personnel; and the last one refers to those variables that are not influenced by the firm nor by the customer (e.g. other customers' attitude and behavior). This study emphasizes the second group of antecedents in the process of building CE, i.e. the ones controlled by the firm. Among the array of potential enablers controlled by the company for CE delivery, the role played by employees deserves special attention (Harris, 2007; Mosley, 2007).

From this perspective, firms' creation of satisfying CEs hinges on the ability and commitment of employees. They have the formidable task of representing the firm and fostering CE through their actions (Harris, 2007). According to Mosley (2007), positive CE delivery depends on employees' knowledge and expertise and on their ability to interact successfully with customers. "It is the employees who enact the attributes of the brand and whose actions ultimately foster CE – whether good or bad" (Harris, 2007, p. 102). Employees' role is important not only because they contribute to developing a positive service attitude but also because they evoke emotional values through a particularly distinctive style of service (Mosley, 2007). However, even if the importance of employees is recognized in generating positive CEs (see the awareness-raising articles by Harris and Mosley mentioned above), thus far research has not systematically examined the role of employees in this regard (Waqas *et al.*, 2020).

Studies by Arnold *et al.* (2005) and Grace and O'Cass (2004) constitute a notable exception. In their analysis of retail shopping, Arnold *et al.* (2005) identified two major groups of factors influencing CE, namely, interpersonal and non-interpersonal (e.g. product-related). Most of the interpersonal factors identified in the study relied on the attitudes, behavior, knowledge and skills of salespeople or service providers: interpersonal effort (i.e. being helpful), interpersonal engagement (i.e. being friendly and nice to the customer), problem resolution (i.e. solving customers' problems, possibly even "bending the rules"), interpersonal distance (i.e. avoiding being too aggressive or "pushy"), time commitment (i.e. spending considerable time assisting the customer or searching for a product), ethical behavior (e.g. not deceiving the customer concerning the price or terms of a product) and being knowledgeable and skillful (e.g. knowing differences among various brands or offerings). Likewise, in their study of the banking industry, Grace and O'Cass (2004) found that

employee service (e.g. being willing to help, providing prompt service, never being too busy for the customer, being trustworthy and being polite) was a key contributor to CE.

Despite this empirical evidence, to the best of the authors' knowledge, there are no studies that deepen into the types of knowledge, skills and motivational levers that could enact marketers' adequate response to customers' demands (i.e. proposing the right solution for each client) and the kind of attitudes and behavior that make customers feel delighted. This constitutes an important research gap because it hinders marketing and sales managers from identifying the kinds of knowledge and skills that need to be promoted, as well as the HRM policies and practices that need to be applied.

2.2 Theoretical underpinnings of the knowledge and motivational antecedents of customer experience

To address the above research gap, we integrate two streams of literature as the theoretical background of the study: the intellectual capital-based view (ICV) of the firm (Reed *et al.*, 2006) and self-determination theory (Deci and Ryan, 1985). First, the ICV serves as a foundation to analyze the role of marketing and sales employees' knowledge in company performance (in this case, CE performance as compared to competitors). According to Reed *et al.* (2006), the ICV complements the knowledge-based view of the firm by focusing on the stocks and flows of knowledge embedded in an organization (i.e. IC) and their role in outperforming competitors. Within the ICV, knowledge resources are split up into three main categories, namely, human capital (i.e. knowledge residing in the employees of the firm), structural or organizational capital (i.e. knowledge embedded in the company's structures and processes) and relational or social capital (i.e. knowledge residing in relationships, both internal and external to the firm). Human capital (which constitutes the focus of this paper) encompasses both employees' explicit or "conscious" knowledge (e.g. knowledge about facts, characteristics and trends) and tacit or "automatic" knowledge (i.e. skills, abilities or know-how) (Peñalba-Aguirrezabalaga *et al.*, 2020).

According to Wiig (1993), knowledge is the main force that determines and drives the ability to act intelligently. It allows the synthesis and evaluation of alternate solutions, the capacity for decision-making and the implementation of the chosen options (Wiig, 1993; Dalkir, 2011). Additionally, skills or know-how-based knowledge (Kogut and Zander, 1992) affect the quality of implementation of the selected action alternates. Therefore, we examine the impact of marketing-specific human capital (i.e. all the knowledge and skills possessed by marketing and sales employees; Peñalba-Aguirrezabalaga *et al.*, 2020) on the generation and delivery of superior CE as compared to competitors.

Second, to understand the sources of employee motivation, we build on self-determination theory, which distinguishes intrinsic and extrinsic motivation as sources for employee behavior (Deci and Ryan, 1985; Hofeditz *et al.*, 2017). Motivation is the level of an individual's motivational experience that involves certain mental processes that arouse interest and energize, direct and sustain goal-oriented behavior when engaged in an activity (Cinar *et al.*, 2011; Silic *et al.*, 2020). Self-determination theory proposes two overarching types of motivation, intrinsic and extrinsic, that constitute a continuum (Deci and Ryan, 1985; Hofeditz *et al.*, 2017).

Intrinsic motivation refers to doing something because it is inherently interesting, with the individual deriving spontaneous satisfaction from the activity itself. *Extrinsic motivation*, however, refers to doing something for instrumental reasons. These instrumental reasons can differ depending on their degree of internalization (Gagné *et al.*, 2010). At the low end, we have *external regulation*, which involves doing an activity to obtain rewards, such as a good salary or to avoid punishments. Second, *introjected regulation* implies engaging in a behavior or committing to an activity out of guilt or compulsion or to maintain self-worth. Third, *identified regulation* involves doing an activity because one identifies with its value or

meaning and, finally, *integrated regulation* implies identifying with the value of an activity to the point that it becomes part of a person's habitual functioning and part of the person's sense of self. In practice, identified and integrated regulations are complex to distinguish (Gagné *et al.*, 2010). For this reason, only the former will be considered in this study.

Thus, we portray motivation as a bundle of various intrinsic and extrinsic components that affect marketing and sales employees' willingness to learn, develop and perform toward firms' goals (Miao *et al.*, 2007). Based on this backdrop, we will study how the combination of human capital and employee motivation affects firm relative performance regarding CE.

3. Hypothesis development

3.1 Marketing-specific human capital as a key antecedent of superior customer experience

Considering the earlier definition of CE, for organizations to compete by providing customers with superior CEs, they must control and exert a positive impact through the whole process of buying and receiving. According to Porter (1985), while all business functional areas contribute to the delivery of goods and services, marketing and sales play a key role in adding and creating value for customers. When marketers engage with customers, they act as brokers, transferring knowledge to them (Groza *et al.*, 2016). This is why the knowledge and skills of marketing and sales employees are highly important in providing positive CEs. Such knowledge and skills constitute a company's *marketing-specific human capital* (Peñalba-Aguirrezabalaga *et al.*, 2020). The latter includes several subcategories, discussed below.

First, employees' *customer knowledge* (i.e. knowledge about customer needs, expectations, satisfaction levels, personality and behavior) enables marketers to satisfy customer needs more effectively than competitors do (Saxe and Weitz, 1982; Rapp *et al.*, 2006). According to Kotler and Armstrong (2018), "marketing is the process of engaging customers and building profitable customer relationships by creating value for customers and capturing value in return" (p. 53). Consequently, to fulfill their mission and provide constant, positive CE, marketing professionals must know the customer well.

Second, to build and maintain profitable customer relationships, companies should deliver superior customer value and satisfaction. As this depends on product/service performance that meets customers' expectations (Kotler and Armstrong, 2018), marketing and sales personnel must understand the firm's a product/service specifications, applications and customer use situations (Behrman and Perreault, 1982; Cravens *et al.*, 1993; Rapp *et al.*, 2006) to develop positive CEs. Together, these issues involve *technical knowledge* related to the products and services offered to customers. We expect that technical knowledge contributes to CE through marketing employees' understanding of the technical and operational factors that drive CE.

Third, apart from having knowledge about customers and the company's offering, marketing involves serving a market of final consumers in the face of competitors (Kotler and Armstrong, 2018). Thus, marketing professionals must have knowledge about the industry in which the company operates (Schillewaert and Ahearne, 2000; Rapp *et al.*, 2006) if they are to successfully differentiate and position their offerings in customers' minds. This category comprises *market knowledge*, which we expect to contribute positively to CE given the virtue of understanding the market in which the CE occurs.

Fourth, the above "know-what" knowledge or explicit knowledge is complemented with tacit or "automatic" knowledge (Nahapiet and Ghoshal, 1998; Groza *et al.*, 2016). This refers to particular *marketing-related skills*, such as targeting skills (i.e. the ability to identify and focus on the right customers; Schillewaert and Ahearne, 2000), adaptive skills, problem-solving skills, communication skills, social media management skills, teamwork and

creativity, that are considered relevant for marketing professionals (Behrman and Perreault, 1982; Spiro and Weitz, 1990; Schillewaert and Ahearne, 2000; Rapp *et al.*, 2006; Piercy *et al.*, 2009; Guesalaga, 2016). We expect this know-how embedded in individuals to contribute to the generation and delivery of successful CE.

Overall, we expect that each of these four dimensions of marketing-specific human capital contributes positively to CE performance *vis-à-vis* competitors. Thus, the following hypotheses are formulated:

H1a. Marketing and sales employees' customer knowledge is positively related to CE performance in relation to competitors.

H1b. Marketing and sales employees' technical knowledge (i.e. product/service knowledge) is positively related to CE performance in relation to competitors.

H1c. Marketing and sales employees' market knowledge is positively related to CE performance in relation to competitors.

H1d. Marketing and sales employees' marketing-related skills are positively related to CE performance in relation to competitors.

3.2 Motivation as a foundation of employees' marketing-specific knowledge

According to past research, both intrinsic and extrinsic types of motivation induce positive job attitudes, job engagement and employee behavior (Cinar *et al.*, 2011; Silic *et al.*, 2020). One of the key behaviors for a company's employees to be competitive is knowledge-related behavior, which depends on employees' attitude toward the acquisition, generation, sharing, transfer and use of knowledge. Previous research has demonstrated that individual motivation may stimulate knowledge-related behavior. For example, the meta-analysis performed by Colquitt *et al.* (2000) showed that motivation to learn influences knowledge and skill acquisition, and the transfer or use of these on the job. Likewise, Noe *et al.* (2010) linked motivation to employees' willingness to acquire new knowledge and learn in the workplace. According to Lee *et al.* (2016), motivated knowledge workers (marketing and sales employees in our case) help firms to create organizational value. For instance, marketing and sales staff can contribute to creating value through knowledge acquisition and application by, for example, gathering information on customers and competitors and using this type of "know-what" knowledge to help the firm outperform its rivals. Other authors suggest that motivation plays an important role in knowledge sharing between colleagues (Lam and Lambermont-Ford, 2010; Nguyen *et al.*, 2019), which constitutes an essential type of behavior for generating and acquiring new knowledge (Nonaka and Takeuchi, 1995). Indeed, motivation has also been seen as an antecedent to employees' innovative behavior (Ritala *et al.*, 2020) and knowledge creation (Baldé *et al.*, 2018). Thus, it can be expected that employee motivation encourages employees' knowledge-related behavior and skills learning.

In this study, we focus on marketing employees' knowledge and skills, given their prominent role in providing positive CEs. According to Kadic-Maglajlic *et al.* (2018), satisfying customer needs and creating positive CEs depend on knowledge-related resources (e.g. knowledge of product/services, market information and customer knowledge), the sharing of which among organizational members requires collaborative behavior. Thus, in this specific context, motivation can function as an engine for marketers to acquire, use and share explicit knowledge about customers, products/services and the markets where their organization operates to fulfill customer expectations. Moreover, according to a learning goal orientation (Lukoscheka *et al.*, 2018), motivated marketers will be more willing to learn and acquire indispensable tacit knowledge or marketing-related skills relevant for marketing professionals. In this vein, Pettijohn *et al.* (2002) showed that motivation and marketing skills, such as capabilities regarding sales presentations, need identification, suggestive selling, product knowledge, time allocation and orientation toward assisting the customer,

are significantly related to customer satisfaction. Higher levels of motivation lead marketers toward training and developing increased skills and ability to engage in customer-oriented selling.

Overall, we expect motivated marketing and sales employees to undertake greater efforts to master the required marketing-specific knowledge and skills. Therefore, we formulate hypotheses for the antecedent role of motivation regarding each type of marketing-related human capital:

H2a. Marketing and sales employees' motivation is positively related to customer knowledge.

H2b. Marketing and sales employees' motivation is positively related to technical knowledge (i.e. product/service knowledge).

H2c. Marketing and sales employees' motivation is positively related to market knowledge.

H2d. Marketing and sales employees' motivation is positively related to marketing-related skills.

3.3 The direct role of motivation in generating superior customer experience

Motivation encourages marketing and sales employees to acquire the knowledge and skillsets necessary to become customer-oriented. The literature has demonstrated that employee motivation, both intrinsic and extrinsic, influences individual performance (Miao *et al.*, 2007; Gellatly *et al.*, 2020) and we expect this to hold for CE-related performance.

Motivation promotes other behavioral and attitudinal outcomes, such as more creative behavior, psychological well-being, organizational trust, commitment and job satisfaction (Gagné and Deci, 2005); flexibility and open-mindedness (Kantanen *et al.*, 2017); a positive approach to things, a creative mindset and a less critical, more relaxed attitude in general (Pullins, 2001); and organizational citizenship behavior (Kim, 2006; Barbuto and Story, 2011). All these are critical for successful performance and indicate that motivated employees originate positive attitudes leading to a positive overall work atmosphere (Lee *et al.*, 2016), which encourages them autonomously and voluntarily to search for novel ways of doing things or learn and apply new skills (Miao *et al.*, 2007). Ultimately, this will spark their enthusiasm to convert this satisfaction and energy into external customer satisfaction in their interactions (Kadic-Maglajlic *et al.*, 2018). Employees with positive attitudes and behaviors can work as part-time marketers or as corporate ambassadors, preserving the firm's reputation and generating goodwill toward it (Helm, 2011). Or as Grönroos (2001) put it, customers' experience depends on how they perceive their interaction with employees of the company. If employees are motivated to treat customers well and make them feel important, they are more able and willing to give better experiences to customers (Hussinki *et al.*, 2019).

Thus, in the context of this study, it could be argued that the more motivated marketers are, the better their attitude toward customers is, leading to improved CE (Ahammad *et al.*, 2015). On that basis, we propose the following hypothesis:

H3. Marketing and sales employees' motivation is positively related to CE performance in relation to competitors.

4. Research methods

4.1 Sample and data collection

The target population of the research comprised Spanish companies with at least 100 employees. We established this threshold to guarantee that the companies had a well-established marketing function. We used the Sistema de Análisis de Balances Ibéricos

(System of Iberian Balance Sheet Analysis) database (which contains the registered annual accounts of approximately 2,500,000 Spanish and Portuguese companies) to identify companies that met the criterion. The search resulted in 2,346 firms. Setting out from the above finite population, we calculated the minimum sample size needed to conduct a representative study as follows:

$$n_{fin} = \frac{n_{inf}}{1 + \frac{n_{inf}-1}{N}} = \frac{400}{1 + \left(\frac{400-1}{2{,}346}\right)} = 342$$

where:

n_{fin} = is the sample size for a statistically finite population;

n_{inf} = is the sample size for a statistically infinite population; and

N = is the population size.

As the calculation of the sample size for a statistically finite population draws from that of a statistically infinite population, we first calculated such a sample size, which was equal to 400:

$$n_{inf} = Z^2_{\alpha/2} * \frac{PQ}{e^2} = 2^2 * \frac{2.500}{5^2} = 400$$

In the previous formula:

- $Z_{\alpha/2}$ represents the critical value corresponding to the standard normal distribution for the chosen significance level (in our case, 4.5%, which implies a confidence or security level in the inference of results from the sample to the whole population of 95.5%).
- PQ is the estimate of the population variance under unfavorable sampling conditions (i.e. it is the maximum value that this variance could have).
- e represents the maximum sampling error acceptable to researchers.

We then contacted the target population by phone, guaranteeing total confidentiality. To ensure that the proportions of company type represented those of the population (both in terms of size – large vs mid-sized firms – and industry – manufacturing vs service companies and high technology vs low technology firms), we applied a stratified sampling procedure. The final sample included 346 companies that answered the provided email or phone-structured survey. To distinguish between business-to-business (B2B) and business-to-consumer (B2C) firms, we went through companies' responses about the types of clients they served. If they claimed to serve only corporate customers, we classified them as B2B, and if they claimed to serve only end-consumers or both corporate customers and end-consumers, we classified them as B2C.

The resulting sample composition was as follows: 178 companies were manufacturing firms, of which 116 were low-tech (87 B2B and 29 B2C) and 62 high-tech (40 B2B and 22 B2C) and 168 companies were service firms, of which 129 were low-tech (58 B2B and 71 B2C) and 39 high-tech (29 B2B and 10 B2C). Although the approach to the customer and the way to generate and deliver CEs could be distinctive depending on the type of industry (manufacturing vs service companies, high-tech vs low-tech firms) and type of customer served (businesses vs consumers), the role of marketing and sales employees (i.e. their knowledge, skills and motivation) should still be relevant in all cases. For this reason, our sample included all kinds of manufacturing and service companies, high-tech and low-tech firms and B2B and B2C companies, based on their degree of presence in the population (except for B2B and B2C firms, whose proportion in the population could not be known ex-ante).

Regarding respondents' profiles, 85.26% held a managerial role in the marketing domain, 6.65% were marketing and sales technicians or assistants, 5.20% were chief executive officers, 1.45% were salespeople and the remaining 1.45% were unspecified.

The sample size obtained was sufficiently large to conduct a statistical study based on the partial least squares (PLS) structural equation modeling (SEM) approach. According to the level of complexity of the model to be tested (i.e. considering the number of predictors in the most complex regression of the model, which contained nine independent variables), the minimum R^2 to be expected (10%), a significance level of 5% and a statistical power (i.e. the probability of finding an effect in the sample if it indeed exists in the population) of 80%, the minimum sample size was calculated and found to be 181 firms (Cohen, 1992). Thus, our final sample (346 companies) was well above the minimum threshold.

As we used the key informant technique to obtain data regarding all dependent and independent variables, there was a possibility of common method bias (Podsakoff *et al.*, 2003). To determine the extent of method variance in the data set, we conducted a full collinearity test specially conceived for PLS-SEM (Kock, 2015). The above test includes both vertical (predictor–predictor) and lateral (predictor–criterion) collinearity analyzes. According to Kock (2015), if all the variance inflation factors (VIFs) resulting from a full collinearity test are equal to or below 3.3, the model can be considered free of common-method bias. The highest VIF in our model was 2.471, well below the 3.3 thresholds. Therefore, our data did not feature common-method variance.

4.2 Measures

Our research model included one independent variable (motivation), four mediating variables (marketing-specific human capital components, namely, i.e. customer knowledge, technical knowledge, market knowledge and marketing-related skills), one dependent variable (CE performance in relation to competitors) and five control variables (size, industry [manufacturing vs service], technology intensity [high-tech vs low-tech], customer type [B2B vs B2C] and educational background and experience). The independent and mediating variables focused on marketing and sales staff, which was signaled to the informants in a leading statement to each survey item category (Table 1 for details). This allowed us to focus informants' attention on a particular subset among overall company employees aligned with our hypotheses. As mentioned in the previous section, informants mainly comprised marketing professionals, so they were likely well-positioned to assess these aspects.

The scale used for *employee motivation* was based on the four dimensions suggested by Gagné *et al.* (2010) for the motivation continuum: intrinsic motivation, identification, introjection and external regulation. Previous studies (Huber and Power, 1985; De Voe and Iyengar, 2004) suggest that there is enough correlation between managers' perceptions and employees' self-ratings regarding their degree of motivation. Therefore, we think that information provided by people in charge of the marketing and sales function will be sufficiently reliable to assess their employees' motivation, and thus, test our research hypotheses.

Regarding marketing-specific human capital components, we relied on newly developed and validated scales (Peñalba-Aguirrezabalaga *et al.*, 2020) devised based on existing literature on marketing and sales staff performance. *Customer knowledge* was based on Saxe and Weitz (1982), Sheth *et al.* (1999), Homburg *et al.* (2011), Trainor *et al.* (2011) and Mu (2015); *technical knowledge* was based on Behrman and Perreault (1982), Cravens *et al.* (1993) and Rapp *et al.* (2006); *market knowledge* was based on Schillewaert and Ahearne (2000) and Rapp *et al.* (2006); *marketing-related skills* were based on Behrman and Perreault (1982), Spiro and Weitz (1990), Schillewaert and Ahearne (2000), Rapp *et al.* (2006), Piercy *et al.* (2009) and Guesalaga (2016).

Table 1 Measurement of model evaluation

Constructs and measures	*Item wording*	*Mean*	*SD*	*VIFs*	*Weights*	*Loadings*
Control variables						
Company size	Natural logarithm of the number of employees	N/A	N/A	N/A	N/A	N/A
Industry	1 = manufacturing; 0 = services	N/A	N/A	N/A	N/A	N/A
Technology intensity	1 = high-tech; 0 = low-tech	N/A	N/A	N/A	N/A	N/A
Customer type	1 = B2B; 0 = B2C	N/A	N/A	N/A	N/A	N/A
Educational background and experience	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)					
Mode "B" composite	Our marketing and sales staff:					
Convergency: 0.799						
EBE1	Have a marketing and sales educational background	5.317	1.536	2.442	0.216*	0.723***
EBE2	Have an updated knowledge of new marketing concepts, tools and techniques (e.g. digital marketing, social media, etc.)	5.301	1.506	2.305	0.350***	0.708***
EBE3	Have an extensive professional experience in the marketing and sales domain	5.520	1.308	2.175	0.284***	0.833***
EBE4	Have an extensive professional experience in the industry	5.740	1.212	1.799	0.467***	0.769***
EBE5+	Have solid educational background and experience to perform their job	5.775	1.086	N/A	N/A	N/A
Motivation	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)					
Mode "B" composite	Our marketing and sales staff:					
Convergency: 0.854						
MOTIV1	Enjoy their job very much	5.488	1.147	2.866	0.381***	0.909***
MOTIV2	Strongly identify with the company	5.576	1.185	2.712	0.284*	0.882***
MOTIV3	Really want to succeed in their job	5.980	1.087	2.497	0.254*	0.848***
MOTIV4	Are very satisfied with their salary	4.665	1.319	1.381	0.268**	0.699***
MOTIV5+	Are highly motivated	5.281	1.265	N/A	N/A	N/A
Customer knowledge	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)					
Mode "A" composite	Our marketing and sales staff have a very good knowledge of customers' . . .					
Convergency: 0.880						
CK1	Needs	5.723	1.069	2.890	0.220***	0.840***
CK2	Expectations and/or performance requirements	5.630	1.071	3.154	0.207***	0.847***
CK3	Satisfaction levels	5.691	1.104	2.114	0.204***	0.801***
CK4	Personality	5.232	1.228	3.409	0.181***	0.850***
CK5	Behavior	5.338	1.192	3.899	0.195***	0.869***
CK6	Circumstances	5.268	1.196	2.802	0.184***	0.833***
CK7+	Overall, our marketing and sales staff know customers very well	5.581	1.125	N/A	N/A	N/A
Technical knowledge	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)					
Mode "A" composite	Our marketing and sales staff:					
Convergency: 0.845						
TK1	Know all the specifications of our products and/or services	5.916	1.081	4.381	0.245***	0.908***
TK2	Know all the applications and functions of our products and/or services	5.960	1.072	3.744	0.244***	0.881***
TK3	Know how our products and/or services differ from those of our competitors	5.783	1.154	2.471	0.259***	0.864***
TK4	Are able to detect causes of operating failure of our products and/or services	5.372	1.377	1.920	0.180***	0.772***
TK5	Keep abreast of our company's product and/or service developments	5.733	1.165	2.245	0.237***	0.840***
TK6+	Know our products and/or services very well	6.049	1.007	N/A	N/A	N/A
Market knowledge	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree)					
Mode "B" composite	Our marketing and sales staff:					
Convergency: 0.692						
MK1	Have a lot of information on industry trends	5.695	1.098	2.592	0.209†	0.802***
MK2	Are well-informed about important events in our industry	5.826	1.047	2.772	0.369**	0.837***
MK3	Are knowledgeable about our competitors' activities	5.688	1.061	2.431	0.105	0.802***
MK4	Keep abreast of the marketing strategies of our competitors	5.035	1.253	2.033	0.511***	0.863***
MK5+	Are an excellent source of competitive information	5.291	1.223	N/A	N/A	N/A

(*continued*)

Table 1

Constructs and measures	*Item wording*	*Mean*	*SD*	*VIFs*	*Weights*	*Loadings*
Marketing skills Mode "B" composite Convergency: 0.820	To what extent do the following statements apply to your company? (1 = completely disagree, 7 = completely agree) Our marketing and sales staff have excellent . . .					
MS1	Targeting skills (i.e. the ability to focus on the "right" customers or those with the highest potential)	5.503	1.128	1.802	0.323***	0.775***
MS2	Adaptive skills	5.765	1.048	2.379	0.028	0.730***
MS3	Problem-solving skills	5.843	1.042	2.522	0.248**	0.773***
MS4	Communication skills	5.776	1.075	2.243	0.138†	0.757***
MS5	Social media management skills (e.g. Twitter, Facebook, LinkedIn, Google+ and YouTube)	5.058	1.555	1.440	0.204*	0.613***
MS6	Teamwork skills	5.832	1.198	2.346	0.014	0.732***
MS7	Creativity	5.549	1.204	2.207	0.357***	0.834***
MS8^{+}	Overall, our marketing and sales staff have a high command of the skills needed to perform their job	5.750	0.962	N/A	N/A	N/A
Customer experience performance in relation to competitors Mode "A" composite Convergency: 0.917	Compare your company performance vis-à-vis competitors (as perceived by customers) in the following fields (1 = much worse, 7 = much better)					
CE1	Customer experience during product/service search and selection	5.199	1.136	2.572	0.283***	0.841***
CE2	Customer experience during the purchase phase	5.341	1.043	3.447	0.319***	0.913***
CE3	Customer experience during the use phase	5.593	1.034	2.727	0.283***	0.873***
CE4	Customer experience during the aftersales phase	5.459	1.112	2.430	0.268***	0.836***
CE5^{+}	Overall customer experience	5.544	0.993	N/A	N/A	N/A

Notes: $^{+}$Summary indicator for convergent validity assessment; $^{\dagger}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$, one-tailed test

Finally, the scale used for *CE* performance regarding competitors was based on Verhoef *et al.* (2009). It should be noted that all items were measured with 7-point Likert scales (Table 1).

Marketing-specific human capital components, motivation and CE constitute designed conceptual variables. In other words, they are abstractions or human-made conceptual "artifacts" (Henseler, 2017; Hair *et al.*, 2019). Here, the indicators or observable variables define or build up the conceptual variable. They do not cause it, but they make it up (i.e. it is a "definitorial" relationship). Thus, a composite measurement model applies (Henseler, 2017). In such a measurement model, constructs are obtained as a linear combination of their indicators without error terms, and each indicator enters the linear combination with a specific weight. These weights can be calculated based on correlations (Mode "A" composites) or multiple regression (Mode "B" composites). This choice will depend on the degree of collinearity of the indicators within a particular construct. If collinearity is high, this could cause problems in the estimation of indicators' weights in Mode "B" composites. Under these circumstances, researchers should consider using Mode "A" composites (Rigdon, 2016; Henseler, 2017).

As far as control variables are concerned (Table 1), company size may affect a firm's possibilities to generate superior CEs. The larger the company, the greater the possibilities of investing in different types of resources (Camisón-Zornoza *et al.*, 2004) that may help improve CE (e.g. communication resources, technological infrastructures, design resources and support staff, to name but a few). Industry (manufacturing vs service) could also affect relative CE. Service provision usually involves closer interaction with customers as compared to the delivery of manufactured goods and continuous adaptation to their changing demands (i.e. higher customization degree; Kianto *et al.*, 2010). The above may

increase the relevance of employees' knowledge and skills to provide superior CEs. Likewise, high-tech companies deal with more rapidly changing and complex products than low-tech firms (Schilling, 2010), which also stresses the need for a highly skilled and qualified workforce. Moreover, marketing and sales professionals differ markedly in B2B and B2C firms (Kotler *et al.*, 2006; Kotler and Armstrong, 2018). According to Kotler *et al.* (2006), B2C firms adopt a more systematic and professional approach to marketing than B2B companies, which could induce discrepancies in the perceived excellence or superiority of their CEs. Furthermore, in B2B settings, the buyer and the seller are often much more dependent on each other, which implies working closely with customers during all stages of the buying process, from helping customers define problems to finding solutions to supporting after-sale operations (Aarikka-Stenroos and Jaakkola, 2012). Finally, educational background (i.e. marketing-related training) and experience (both in terms of marketing and industry) are expected to be important antecedents of marketing-specific human capital besides employee motivation.

4.3 Statistical analyzes

The proposed research model was analyzed with SEM based on PLS using SmartPLS 3.2.8 software (Ringle *et al.*, 2015). We chose this method given the nature of the conceptual variables under study. As previously explained, our independent and dependent variables are human-made conceptual "artifacts," and thus, a composite measurement model applies. Unlike covariance-based SEM, which adopts a common factor approach, PLS-based SEM relies only on composites (Rigdon, 2016). There are two stages in PLS-based SEM:

1. assessment of the measurement model; and
2. assessment of the structural model.

Conducting assessments in this order ensures that the constructs' measures are valid and reliable before attempting to draw conclusions about the relationships among constructs (Barclay *et al.*, 1995).

5. Results

5.1 Measurement model evaluation

In composite measurement, researchers need to analyze convergent validity to determine the extent to which the indicators making up a construct capture the essence of the conceptual variable they are intended to represent. According to Hair *et al.* (2017), this requires redundancy analysis. To perform this analysis, the survey included one indicator that summarized each conceptual variable under study to calculate the correlation between the composite and this summary indicator. Appropriate convergent validity requires a correlation of 0.707 or higher, which translates into 50% of the variance explained for the summary indicator (Hair *et al.*, 2017). Good correlations (i.e. convergency levels) were found for all constructs in the research but one: market knowledge. As the correlation obtained in this case was closer to the established limit (0.692), no changes were made in the model (Table 1).

Potential problems in the estimation of indicators' weights due to collinearity are another aspect that must be considered. Ideally, VIF values should be below 3 (Hair *et al.*, 2019). As Table 1 shows, several indicators in customer knowledge, technical knowledge (i.e. product/service knowledge) and CE performance in relation to competitors exceeded the threshold value of 3. Therefore, to avoid problems related to reversed signs for indicators' weights due to collinearity, a Mode "A" composite was applied (i.e. correlation weights).

Finally, in Mode "B" composites, the significance and relevance of indicators' weights should be assessed. For indicators with non-significant weight estimates, researchers should investigate whether composite loading estimates are statistically significant and consider dropping any indicator with non-significant weight and loading estimates (Benítez *et al.*, 2020). Significance levels were tested with a one-tailed 5,000 subsample bias-corrected and accelerated (BCA) bootstrap (Hair *et al.*, 2017). While indicators' weights show the relative contribution of each indicator to its construct, indicators' loadings show their absolute contribution (Benítez *et al.*, 2020). As can be observed in Table 1, although not all indicators' weights in Mode "B" composites are statistically significant, all indicators' loadings are statistically relevant. Therefore, the decision was made to keep all indicators in the model, as their absolute contribution is at least statistically significant. Detailed comments regarding indicators' weights in Mode "B" composites will be provided in the next section once the overall role of each independent and mediating variable has been clarified.

Table 2 shows correlations between constructs. As can be seen, none of them is too high, the largest one being the correlation between marketing skills and educational background and experience (0.660), which implies a shared variance of 43.56% between both constructs.

5.2 Structural model evaluation

Once the quality of the measurement model was guaranteed, the structural model was evaluated. First, a collinearity test was conducted to remove any potential bias in path coefficients due to critical levels of collinearity among the predictor constructs (Hair *et al.*, 2017). Analogous to the assessment of composite measurement models, VIF values should be below 3. All VIFs in our model were well below the established threshold, the highest one being 2.217. Therefore, collinearity in the structural model was not a problem in this research.

Second, we used a one-tailed 5,000 subsample BCA bootstrap to test the strength of the established relationships between constructs. Table 3 shows the results obtained. As can be observed, customer knowledge and marketing-related skills are the only constituents of marketing-specific human capital that positively and significantly affect CE. Thus, *H1a* and *H1d* are accepted, while *H1b* and *H1c* are rejected. Furthermore, motivation constitutes an essential driver in boosting all types of marketing-specific knowledge residing in individuals within the marketing function (both "know-what" [customer, product/service and market-related knowledge] and "know-how" [marketing-related skills]). Hence, *H2a–H2d* are accepted. Moreover, we find this effect to hold across different types and levels of educational background and experience. Finally, motivation affects CE both directly (thus,

Table 2 Correlation matrix

Constructs	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Company size	1.000										
2. Industry	−0.082	1.000									
3. Technology intensity	0.064	0.123	1.000								
4. Customer type	−0.063	0.206	0.095	1.000							
5. Education and exp.	0.074	−0.045	0.073	−0.093	1.000						
6. Motivation	0.115	−0.071	0.009	−0.058	0.499	1.000					
7. Customer knowledge	−0.009	0.073	−0.049	−0.046	0.582	0.450	1.000				
8. Technical knowledge	−0.012	−0.041	−0.095	−0.124	0.522	0.428	0.658	1.000			
9. Market knowledge	0.076	−0.050	0.030	−0.130	0.492	0.415	0.528	0.523	1.000		
10. Marketing skills	0.124	−0.069	−0.006	−0.059	0.660	0.540	0.572	0.495	0.529	1.000	
11. Customer experience	−0.005	−0.060	−0.035	−0.078	0.288	0.425	0.454	0.318	0.285	0.441	1.000

Table 3 Structural model evaluation

	Effects	*STDEV*	t-*statistics*	p-*values*	*5%*	*95%*
Direct effects on customer experience						
Size	−0.057	0.045	1.283	0.100	−0.132	0.015
Industry (manufacturing vs service)	−0.051	0.049	1.036	0.150	−0.131	0.029
Technology intensity (high-tech vs low-tech)	−0.011	0.048	0.233	0.408	−0.089	0.071
Customer type (B2B vs B2C)	−0.046	0.049	0.934	0.175	−0.125	0.035
Customer knowledge	*0.303*	*0.076*	*4.006*	*0.000*	*0.179*	*0.429*
Technical knowledge (product/service knowledge)	−0.064	0.071	0.893	0.186	−0.184	0.049
Market knowledge	−0.046	0.066	0.692	0.245	−0.161	0.058
Marketing skills	*0.202*	*0.077*	*2.628*	*0.004*	*0.067*	*0.319*
Motivation	*0.226*	*0.065*	*3.490*	*0.000*	*0.123*	*0.339*
Direct effects on customer knowledge						
Educational background and experience	*0.476*	*0.060*	*7.933*	*0.000*	*0.375*	*0.571*
Motivation	*0.213*	*0.055*	*3.870*	*0.000*	*0.113*	*0.292*
Direct effects on technical knowledge						
Educational background and experience	*0.410*	*0.069*	*5.919*	*0.000*	*0.292*	*0.523*
Motivation	*0.224*	*0.064*	*3.473*	*0.000*	*0.117*	*0.325*
Direct effects on market knowledge						
Educational background and experience	*0.380*	*0.061*	*6.193*	*0.000*	*0.275*	*0.478*
Motivation	*0.226*	*0.066*	*3.434*	*0.000*	*0.107*	*0.324*
Direct effects on marketing skills						
Educational background and experience	*0.521*	*0.068*	*7.694*	*0.000*	*0.394*	*0.618*
Motivation	*0.280*	*0.066*	*4.218*	*0.000*	*0.168*	*0.384*
Indirect and total effects of motivation on CE						
Indirect effect via customer knowledge (1)	*0.064*	*0.023*	*2.850*	*0.002*	*0.033*	*0.109*
Indirect effect via technical knowledge (2)	−0.014	0.017	0.841	0.200	−0.045	0.011
Indirect effect via market knowledge (3)	−0.010	0.016	0.633	0.263	−0.042	0.012
Indirect effect via marketing skills (4)	*0.057*	*0.027*	*2.065*	*0.019*	*0.019*	*0.105*
Total indirect effect (1 + 2 + 3 + 4)	*0.097*	*0.032*	*2.998*	*0.001*	*0.047*	*0.148*
Total effect (direct + indirect)	*0.323*	*0.060*	*5.418*	*0.000*	*0.219*	*0.417*

H3 is accepted) and indirectly (through its input into knowledge acquisition in the workplace). Regarding control variables, educational background and experience are key antecedents of all marketing-specific human capital constituents.

Regarding the relative relevance of each of the elements making up Mode "B" composites (marketing-related skills, motivation and educational background and experience), indicators' weights (Table 1) show that creativity (0.357) and targeting skills (0.323) constitute the most relevant marketing-related skills, followed by problem-solving (0.248) and social media management skills (0.204). Adaptive skills (0.028), communication skills (0.138) and teamwork skills (0.014) are insignificant. For motivation, although all its dimensions are statistically relevant, enjoying work (intrinsic motivation) appears to be the most relevant (0.381), followed by strongly identifying with the company (identification: 0.284), satisfaction with salary (external regulation: 0.264) and willingness to succeed in the job (introjection: 0.254). Interestingly, for educational background and experience, having extensive professional experience in the industry (0.467) is more relevant than having extensive professional experience in the marketing and sales domain (0.284) and having up-to-date knowledge of new marketing concepts, tools and techniques (0.350) is more relevant than having a marketing and sales educational background (0.216). In any case, all dimensions proved to be statistically relevant.

Third, the coefficient of determination (R^2 value) of the mediating and dependent variables was examined, representing a measure of in-sample predictive power (Hair *et al.*, 2017). The amount of variance explained for customer knowledge reached 37.3%, for technical knowledge 31%, for market knowledge 28.1%, for marketing skills 49.5% and for CE 29.7%.

6. Discussion and implications

Our study is built on two literature streams, namely, the ICV of the firm (Reed *et al.*, 2006) and self-determination theory (Deci and Ryan, 1985). Based on these foundations, we hypothesized that employee motivation is a key antecedent for creating superior CEs and that marketing-specific human capital plays an important role as a mediator in this process. Our results mainly support these hypotheses but also demonstrate that not all marketing-specific knowledge and skills possessed are equally relevant in enhancing CE.

First, we found that marketing employees' motivation – and especially intrinsic motivation – directly influences CE performance in relation to competitors. This is in line with the expectations of the self-determination theory (Deci and Ryan, 1985) in that both extrinsic and intrinsic motivation affect employee behavior, and that there might be important differences among these motivation types in different contexts (Gagné *et al.*, 2010; Ritala *et al.*, 2020). Second, we found that motivation directly impacts the stimulation of individual knowledge-related behavior (marketers' human capital). This confirms the general expectations of marketing scholars (Noe *et al.*, 2010; Lukoscheka *et al.*, 2018) that motivation encourages knowledge acquisition in the workplace that improves performance (in this case, positive CE). Third, supporting previous research, our results show that the delivery of positive CE depends on employees' knowledge and on their ability to interact successfully with customers (Mosley, 2007). In particular, we found support for the mediating role of *customer knowledge* and *marketing skills*. The strong role of customer knowledge is supported by literature that views the customer as the center of marketing efforts (Kotler and Armstrong, 2018) and customer knowledge as a key part of human capital (Rapp *et al.*, 2006). The strong relevance of a variety of *marketing skills* is related to the need of marketing and sales employees to engage in customer interactions and provide improved experiences (Pettijohn *et al.*, 2002). This includes targeting – the ability to identify and focus on the "right" customers (Schillewaert and Ahearne, 2000; Rapp *et al.*, 2006) – as well as problem-solving skills (Day, 1994) and social media management skills (Guesalaga, 2016). Finally, our results show that marketers' creativity constitutes the most relevant skill to guarantee successful CE (Groza *et al.*, 2016). Conversely, we found no support for hypotheses regarding the direct effect of *technical knowledge* and *market knowledge* on CE performance. It might be that these are components within the broader marketing-specific human capital that contribute to the organizational performance and to CE, in more indirect ways. We will leave this aspect for further research.

6.1 Theoretical implications

Our results contribute to the IC and KM literature, where more contextual approaches to IC have been called for Kianto *et al.* (2018). Marketing is a specific context that focuses particularly on customer value creation (Kotler and Armstrong, 2018), which has also received recent attention in IC research (Peñalba-Aguirrezabalaga *et al.*, 2020). In this study, we adopted a contextual approach to human capital, demonstrating the organizational value of knowledge and skills possessed by marketing and sales employees. In particular, we found that marketers' knowledge about customers and specific marketing skills – creativity, targeting, problem-solving and social media management – promote superior CEs. CE and customer value creation are key performance metrics among marketers and firms in general (Waqas *et al.*, 2020; Witell *et al.*, 2020); however, this type of performance has been largely neglected in previous IC-performance research that has focused more on general performance metrics (Inkinen, 2015).

Our research also contributes to further clarifying the role of employee motivation in generating positive knowledge-related behavior (Cinar *et al.*, 2011; Noe *et al.*, 2010), showing that both types of motivation (intrinsic and extrinsic) function as an engine for marketers to acquire marketing-specific human capital. This result resonates with the

research that has shown that motivation plays an important role in knowledge sharing between colleagues (Lam and Lambermont-Ford, 2010; Nguyen *et al.*, 2019) and in creating new knowledge in general (Baldé *et al.*, 2018). Based on this, we advocate more attention to individual motivation as an antecedent to knowledge sharing, transfer and creation behavior.

Moreover, our results demonstrate how marketing and sales employees' motivation also contributes directly to generating superior CEs. While motivation, in general, promotes the generation of employees' positive job attitude and behavior toward customers (Cinar *et al.*, 2011) and influences individual performance (Miao *et al.*, 2007; Gellatly *et al.*, 2020), we found that intrinsic motivation (Gagné *et al.*, 2010) has a particularly strong role in fostering CE performance. This resonates with findings in the creativity and innovation literature (Amabile, 1997; Ritala *et al.*, 2020), where the role of intrinsic motivation is highlighted. This finding highlights a limitation of the extant employee motivation research, showing that even if intrinsic and extrinsic motivation have been treated as global constructs, they have distinct consequences (Miao *et al.*, 2007). Our results underline that the different dimensions of motivation can have different consequences for customer value creation, calling for more attention to the motivation, compensation and behavior of marketing and sales employees.

6.2 Managerial implications

As marketers act as crucial boundary-spanners and brokers between the firm and its customers, their motivation and human capital must be strategically managed to ensure superior CEs throughout the entire customer journey. Motivation promotes the generation of marketers' necessary customer knowledge and specific skills to ensure that they fulfill customer expectations and effectively become part of the marketing mix of the firm (Judd, 2003). Motivated marketers transfer their satisfaction and energy to customers in their interactions, and thus, their motivation can be reflected in positive attitudes and behaviors toward customers (Kadic-Maglajlic *et al.*, 2018). Therefore, companies should use different types of incentives and HRM schemes to ensure marketing employees' motivation. Moreover, according to our results, high motivation is not only linked to a good salary or identification with the company but also to intrinsic motivation (i.e. enjoyment and interest in the work itself). Alternately, if marketers are motivated because they enjoy their job (i.e. they are intrinsically motivated), their interaction with customers and subsequent experience will be even more satisfying.

Moreover, companies must be aware of the critical role that marketing-specific human capital plays in generating superior CE and stimulate a learning-oriented and knowledge-sharing environment to ensure that employees possess the required skills and knowledge for excellent customer performance. Based on our results, particularly customer knowledge – as opposed to more generic technological or market knowledge – is particularly important in understanding customers' needs and preferences. However, sufficient understanding of the customer can also be supplemented by high-level marketing skills, as our results demonstrate. For instance, the use of social media (e.g. Facebook, LinkedIn, YouTube and Twitter) has grown significantly among consumers (Guesalaga, 2016). This highlights the role of marketing and sales personnel' abilities to use social media to influence consumer preferences and purchasing decisions (Michaelidou *et al.*, 2011), as well as how to communicate with them and improve their experience (Wilson *et al.*, 2011). Thus, firms should provide marketing-oriented IT tools (e.g. customer relationship management, CE management software, customer journey tracking software, social media management software, marketing intelligence software, etc.) as human capital infrastructural support to facilitate access to sources of information that guarantee the acquisition of required marketing-specific knowledge.

6.3 Limitations and future research

Like any study, this paper has some limitations that need to be addressed by future research. First, we analyzed the role of marketing-specific human capital without considering that employees in the marketing and sales function may play different roles in providing CEs. Thus, future studies could provide a more fine-grained picture of marketing-specific human capital by distinguishing the role of different types of marketing and sales employees in generating CEs. Second, survey responses were collected only from Spanish firms, and therefore, findings may have been influenced by national characteristics. As the level of development of marketing-specific IC categories and constituents is likely to vary across cultural contexts (Sáenz *et al.*, 2017), future research could extend the analysis to other national contexts. Third, a key informant in each company reported the data collected through the structured cross-sectional survey. This allowed us to access firm-level perceptional data and test our hypotheses, but there may be limitations regarding the scope of informants' knowledge and the ability to draw causal inferences. Future studies could thus, adopt different approaches to measurement and combine them with various ways of measuring CE performance. Fourth, considering that we found no support for the hypotheses that technical knowledge and market knowledge directly affect CE, future research could explore how these components within the broader marketing-specific human capital contribute to organizational performance, as well as to CE in more indirect ways.

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Marketing-Specific Structural Capital, Marketing Innovation and Market Performance

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Abstract

Organization's capability to innovate is closely tied to its intellectual capital; yet, studies addressing this issue have neglected marketing innovation and have mostly focused on technological innovation. However, marketing innovation (i.e., innovation in pricing, product/service design and packaging, placement and promotion) can help attract customers and increase the demand of a firm's products with a relatively smaller investment than technological innovation. In this paper, we test how knowledge generated by means of marketing-specific IT solutions (i.e., marketing-specific IT capital) and other forms of organizational memory in the marketing domain (i.e., marketing-specific organizational memory) can contribute to marketing innovation and subsequent market performance. Using marketing directors-reported data, we empirically test research hypotheses by means of structural equation modelling based on partial least squares. Results reveal that while marketing innovation fully mediates the relationship between organizational memory and market performance, it partially mediates the relationship between IT capital and market performance. Moreover, the study identifies which are the most relevant knowledge resources within marketing-specific IT capital and organizational memory to boost both marketing innovation and market performance. This encourages marketing managers to carefully assess marketing-specific knowledge resources residing in the firm to benefit their businesses.

Keywords – Intellectual capital, Structural capital, Marketing innovation, Market performance.

Paper type – Academic Research Paper

1 Introduction

Despite the relevant role that marketing innovation could play in firm competitiveness (e.g., Ren et al., 2010), there is dearth of empirical studies addressing both the antecedents (Geldes and Felzenstein, 2013; Ramírez et al., 2018) and outcomes (Medrano-Sáez and Olarte-Pascual, 2016) of such innovation.

According to Ramírez et al. (2018), attention has only been substantially drawn on marketing innovation since its inclusion in the third edition of the Oslo Manual (OECD, 2005), i.e., the international reference guide for collecting and using innovation data. According to this guide, "Marketing innovations involve the implementation of new marketing methods. These can include changes in product design and packaging, in product promotion and placement, and in methods for pricing goods and services" (p. 17). In other words, marketing innovation consists of "improvements in the marketing mix" (Naidoo, 2010; p. 1311) and has been positioned in the literature as a type of incremental innovation (e.g., Grewal and Tansuhaj, 2001; Contò et al., 2015).

As Naidoo (2010) points out, marketing innovation provides quick fix solutions emphasizing low-risk product modifications, extension, and design changes. It allows differentiation by enabling companies to address the psychological needs of consumers and the rational needs of business-to-business customers by improving their ability to sell (Gupta and Malhotra, 2013). In short, marketing innovation attracts clients (Medrano-Sáez and Olarte-Pascual, 2016) and increases the demand for a firm's products (Ramírez et al., 2018) with a relatively smaller investment than technological innovation (Medrano-Sáez and Olarte-Pascual, 2016).

Among the array of potential enablers of marketing innovation, intellectual capital (IC) deserves special attention. According to Subramaniam and Youndt (2005), "It is widely accepted that an organization's capability to innovate is closely tied to its intellectual capital or its ability to utilize its knowledge resources" (p. 450). However, a recent structured literature review on the IC-innovation linkage by Buenechea-Elberdin (2017) revealed that no previous study had analyzed the influence of IC on marketing innovation.

Given the proliferation of marketing-oriented IT solutions and the significant possibilities now offered by data analytics to extract marketing-related knowledge from companies' data records, as well as the importance of marketing-specific organizational memory (i.e., stored information from an organization's past; Walsh and Ungson, 1991), the question arises about the real impact of each type of knowledge resources in the generation of new marketing methods (and subsequent market performance). These two elements (IT capital and organizational memory) constitute what is known as structural capital (SC) (Bueno et al., 2011) and, in this case, marketing-specific SC (i.e., all marketing-related knowledge residing in a firm's information systems, databases, documents, manuals, routines, and procedures, as well as in any other physical and/or digital artefacts; Peñalba-Aguirrezabalaga et al., 2020). The aim of this paper is to analyze the influence of both constituents of marketing-specific SC on marketing innovation and market performance.

This paper represents a relevant contribution to the IC, marketing, and innovation literatures because it clarifies how organizational knowledge in the marketing domain can contribute to innovation in marketing methods, and thus to attract and retain customers. Moreover, this study is among the first ones that adopts a contextual approach to IC and that shows how knowledge resources regarding a particular function in the company could contribute to firm performance, hence providing a more fine-grained picture about the specific knowledge resources and IT technology in which managers need to invest.

2 Theoretical background

This study assumes the knowledge perspective of IC (Peñalaba-Arrizabalaga et al., 2020), and thus conceives the former as the sum of all knowledge that firms leverage to gain competitive advantage. Usually, a tricomponent classification is suggested that groups resources according to where they reside: people (i.e., human capital), the organization (i.e., structural capital), or relationships (i.e., relational capital).

Following Bueno et al. (2011), a distinction could be made within SC between IT (or technological) capital and organizational capital. In the context of this paper, IT capital refers to knowledge resources generated by means of IT solutions (e.g., knowledge on behavioral patterns obtained through data analytics), while organizational knowledge (or "organizational memory") refers to knowledge that has not been generated by means of computer-based data processing, although it may be stored in a digital repository (e.g., knowledge on best practices and lessons learned, or information records regarding past projects, deals, and/or campaigns).

As we are interested in marketing innovation and its influence on customer acquisition and retention (i.e., market performance), this paper adopts a contextual approach to IC (Kianto et al., 2018) and focuses on marketing-specific SC (Peñalaba-Arrizabalaga et al., 2020). As Morgan et al. (2009) point out, although many organizational capabilities may cross different functional areas of the firm, capabilities regarding the marketing-mix processes (and, thus, innovation related to them) are usually associated with the marketing function (e.g., Dutta et al., 2003). Therefore, knowledge resources residing in the marketing department should play a prominent role.

Along these lines, Morgan et al. (2009) contend that having a greater understanding of customers' expressed wants and latent needs, competitor capabilities and strategies, channel requirements and developments, and the broader market environment constitutes an advantage that enables the firm to be both more effective and efficient by allowing managers to select the most productive available resource combinations to match market conditions. More specifically, it is the interaction between such knowledge resources and marketing capabilities (e.g., marketing innovation) that allows the firm to outperform its rivals (Morgan et al., 2009).

In the following section, we hypothesize how marketing-specific SC can lead to marketing innovation and market performance.

3 Hypothesis development

As already highlighted in the introduction section, marketing innovation has been positioned in the literature as a type of incremental innovation (e.g., Grewal and Tansuhaj, 2001; Contò et al., 2015). According to Abernathy and Clark (1985), incremental innovations build on and reinforce the applicability of existing knowledge. Hence, an organization's preserved knowledge or SC is a fundamental input for such innovation to occur. As Subramaniam and Youndt (2005) point out, reliance on manuals, databases, and other types of codified knowledge, along with the establishment of structures, processes, and routines that encourage repeated use of knowledge will boost and organization's incremental innovative capabilities.

Regarding marketing-specific IT capital, a plethora of IT-based solutions (e.g., CRM, customer experience management software, customer journey tracking software, social media management software, marketing intelligence software) have emerged (Soltani and Navimipour, 2016; Benítez et al., 2018), which enable companies to extract new knowledge from their data records and guide decision-making. These marketing-oriented technological tools offer the ability to identify potential new customers, customer groups and/or segments, patterns of customer behavior, market trends, and even top industry insiders and influencers, as well as to analyze customer's profitability and product/service performance, all of which could be very valuable to guide marketing innovation decisions.

Moving on to organizational memory (i.e., stored information from an organization's history that can be brought to bear on present decisions; Walsh and Ungson, 1991), previous studies provide empirical confirmation that what has already been stored in organizational memory drives innovation (e.g., Hanvanich et al., 2006; Camisón and Villar-López, 2011). According to Camisón and Villar-López (2011), prior knowledge that a firm possesses about clients and markets can lead to early identification of changes in consumer preferences and facilitate the introduction of novel marketing tools to distinguish the firm's products from those of its competitors. In other words, the storage of marketing-specific knowledge and its easy access by the members of the marketing department facilitates and encourages the generation and implementation of new ideas for marketing practices.

Based on the above, we hypothesize that:

H1a. Marketing-specific IT capital is positively related to marketing innovation.

H1b. Marketing-specific organizational memory is positively related to marketing innovation.

As early as 1960, Theodore Levitt drew attention to the profit possibilities of creating new value satisfactions through changes in the marketing schemes (Levitt, 1960). As Ren et al. (2010) point out, "some marketing managers pay exaggerate attention to product innovation as a source of competitive advantage while neglecting other sources of innovation like marketing" (p. 82). However, the particular style of products, the nuances

of advertisements, the level and availability of after-sales service, and even the cultural implication of a brand symbol may be important means to increase a firm's market share, as the analysis of some leading Chinese companies demonstrated (Ren et al., 2010). In other words, marketing innovation provides a way of differentiating firms from their competitors and adapt to markets in order to gain competitive advantage (Medrano and Olarte-Pascual, 2016; Ramírez et al., 2018). As highlighted by the Oslo Manual, "marketing innovations are aimed at better addressing customer needs, opening up new markets, or newly positioning a firm's product on the market, with the aim of increasing the firm's sales" (OECD, 2005; p. 49). To that end, "the logic of marketing innovation emphasizes shifting consumer demand from elastic to more inelastic market segments through the delivery of better value (actual or perceived) to the consumer" (Naidoo, 2010; p. 1311).

Consequently, we hypothesize that:

H2. Marketing innovation is positively related to market performance.

Marketing-specific SC (both IT capital and organizational capital) are expected to have additional benefits beyond those related to the promotion of marketing innovation that could also improve market performance (i.e., customer acquisition and retention). For instance, knowledge generated by means of marketing-specific IT solutions (e.g., knowledge regarding customer behavior, market trends, or product/service performance) could also be essential to guide product/service innovation efforts by highlighting the type of product/service characteristics and functionalities that need to be reinforced to increase customer acceptance. Likewise, knowledge generated regarding potential customers and existing customer segments may help improve targeting capabilities and thus the effectiveness of commercial actions (e.g., selling the right products to the right customers; Soltani and Navimipour, 2016).

In the case of other types of stored knowledge that do not necessarily involve computer-based data processing, the marketing department controls and retains information flows which are critical to understand the industry complexity where the firm operates (Guilding and Pike, 1990). The importance of these marketing-specific assets and their exploitation and coordination enables firms to develop strategies that match their market environments more effectively (Eisenhardt and Martin, 2000; Makadok, 2001; Morgan et al. 2009). Moreover, well established marketing routines and procedures, easily accessible best practices and lessons learned, and information records about past projects, deals, and campaigns may provide marketers with solid guidance to carry out their work and build durable relationships with customers.

As these additional benefits derived from marketing-specific SC that could also lead to improved market performance (i.e., better focused product/service innovation efforts, superior targeting capabilities, more effective marketing strategies, and improved work guidance) have been excluded from our research, we hypothesize that:

H3. Marketing-specific structural capital – (a) IT capital; (b) organizational memory – is positively related to market performance.

In other words, we suggest that marketing innovation partially mediates the relationship between marketing-specific SC and market performance.

4 Research methods

4.1 Sample and data collection

This research examines Spanish companies with at least 100 employees. We established this threshold to guarantee that companies had a well-established marketing function. The Sistema de Análisis de Balances Ibéricos (System of Iberian Balance Sheet Analysis; SABI) database was used to identify companies that met the criterion. The search resulted in 2,346 firms. Setting out from the above population, we calculated the sample size needed to carry out a representative study (342 firms) and then contacted the target population by phone, guaranteeing total confidentiality. A stratified sampling procedure was applied to ensure that different proportions of company types according to industry (manufacturing vs. service), size, and technology intensity were preserved as in the population. The final sample included 346 companies that answered the provided email or phone survey.

This sample size was large enough to carry out a statistical study based on the partial least squares (PLS) structural equation modelling (SEM) approach. As a first approximation, and according to the level of complexity of the model to be tested, we calculated the minimum required sample size as ten times the number of variables in the most complex regression, which contained seven variables (Barclay et al., 1995). The calculated sample size was 70 firms. Thus, our final sample (346 companies) was well above the minimum threshold.

As data regarding all dependent and independent variables were reported by a single key informant in each company, this presented the possibility of the occurrence of what is known as common-method bias (Podsakoff et al., 2003). To determine the extent of method variance in the dataset, a full collinearity test specially conceived for PLS-SEM (Kock, 2015) was carried out. The above test includes both vertical (predictor-predictor) and lateral (predictor-criterion) collinearity analyses. According to Kock (2015), if all the variance inflation factors (VIFs) resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free of common-method bias. The highest VIF in our model was 2.023, well below the 3.3 threshold. Therefore, common-method variance was ruled out of our research.

4.2 Measures

Our research model included two independent variables (marketing-specific SC subcomponents), one mediating variable (marketing innovation), one dependent variable (market performance) and five control variables (size, age–year of foundation–, industry–manufacturing vs. service–, technology intensity–high-techs vs. low-techs–, and customer type–B2B vs. B2C). We relied on a newly developed and validated scale for marketing-

specific SC categories (Peñalba-Aguirrezabalaga et al., 2020), while the scale used for marketing innovation was based on traditional marketing mix components, and the market performance scale was adapted from Liozu (2015). All the items were measured by means of 7-point Likert scales.

SC, marketing innovation, and market performance constitute designed conceptual variables. In other words, they are abstractions or human-made conceptual "artefacts" that do not have an autonomous existence in the real world. In this case, the indicators or observable variables define or build up the conceptual variable. They do not cause it, but they make it up (i.e., it is a "definitorial" relationship). Thus, a composite measurement model applies (Henseler, 2017). In such kind of measurement model, constructs are obtained as a linear combination of their indicators without error term, and each indicator enters the linear combination with a specific weight.

4.3 Statistical analyses

The proposed research model was analyzed with SEM based on PLS using SmartPLS 3.2.8 software (Ringle et al., 2015). Unlike covariance-based SEM, which adopts a common factor approach, PLS-based SEM relies only on composites (Rigdon, 2016). There are two stages in PLS-based SEM: (1) assessment of the measurement model and (2) assessment of the structural model. Conducting assessments in this order ensures that the constructs' measures are valid and reliable before attempting to draw conclusions about the relationships among constructs (Barclay et al., 1995).

5 Results

5.1 Measurement model evaluation

In composite measurement, traditional common factor approaches to measurement model evaluation do not apply. Researchers need to analyze convergent validity to determine the extent to which the indicators making up a construct capture the essence of the conceptual variable they are intended to represent. According to Hair et al. (2017), this requires redundancy analysis. To perform this analysis, the survey included one indicator that summarized each conceptual variable under study in order to calculate the correlation between the composite and this summary indicator. Appropriate convergent validity requires a correlation of 0.707 or higher, which translates into 50% of the variance explained for the summary indicator (Hair et al., 2017). Good correlations were found for all the constructs in the research but one: market performance. As the correlation obtained in this case was very close to the established limit (0.692), no changes were made in the model.

Potential problems in the estimation of indicators' weights due to collinearity issues are another aspect that must be considered. Ideally, VIF values should be lower than 3 (Hair et al., 2019), which is the case for all indicators used in the model. Thus, a mode "B" composite has been applied in all constructs, which means that correlations weights are

calculated by means of multiple regression (Hair et al., 2017). This allows assessing the specific relevance of each indicator when it comes to maximizing the amount of variance explained of the dependent variables.

Finally, as far as correlations between latent variables are concerned, none are excessively high. The largest correlation (0.660) was found between marketing-specific IT capital and organizational memory.

5.2 Structural model evaluation

Once the quality of the measurement model was guaranteed, we used bootstrapping to test the strength of the established relationships between constructs. More specifically, we employed a one-tailed 5,000 sub-sample bias-corrected and accelerated (BCA) bootstrap (Hair et al., 2017). Table 1 shows the results obtained.

Table 1: Structural model evaluation

	Effects	*t statistics*	*p-values*	*5%*	*95%*
Direct effects on marketing innovation (R^2 = 38.9%)					
Size	0.042	1.060	0.145	-0.025	0.104
Year of foundation	0.028	0.663	0.254	-0.039	0.100
Industry (manufacturing vs. service)	-0.017	0.371	0.355	-0.092	0.058
Technology intensity (high-techs vs. low-techs)	-0.020	0.442	0.329	-0.096	0.051
Customer type (B2B vs. B2C)	-0.032	0.714	0.238	-0.109	0.041
Marketing-specific IT capital	**0.320**	**4.941**	**0.000**	**0.194**	**0.411**
Marketing-specific organizational memory	**0.349**	**5.181**	**0.000**	**0.237**	**0.460**
Direct effects on market performance (R^2 = 34.6%)					
Size	-0.025	0.592	0.277	-0.092	0.045
Year of foundation	0.045	0.957	0.169	-0.026	0.129
Marketing-specific IT capital	**0.194**	**2.661**	**0.004**	**0.065**	**0.306**
Marketing-specific organizational memory	0.057	0.776	0.219	-0.073	0.165
Marketing innovation	**0.414**	**6.575**	**0.000**	**0.311**	**0.517**
Indirect and total effects of marketing-specific IT capital on market performance					
Indirect effect via marketing innovation	**0.132**	**3.879**	**0.000**	**0.075**	**0.187**
Total effect (Direct + Indirect)	**0.326**	**4.498**	**0.000**	**0.193**	**0.433**
Indirect and total effects of marketing-specific organizational memory on market performance					
Indirect effect via marketing innovation	**0.145**	**3.914**	**0.000**	**0.092**	**0.215**
Total effect (Direct + Indirect)	**0.202**	**2.891**	**0.002**	**0.074**	**0.306**

As can be observed in Table 1, both marketing-specific IT capital (β=0.320) and organizational memory (β=0.349) are positively and significantly related to marketing innovation, while marketing innovation (β=0.414) also shows a positive and significant relationship with market performance. Thus, hypotheses H1a, H1b, and H2 are accepted.

Moving on now to the direct effects of marketing-specific SC on market performance, in the case of IT capital (β=0.194) this is positive and significant, while in the case of organizational memory (β=0.057) is positive but insignificant. Therefore, hypothesis H3a is accepted, while hypothesis H3b is rejected. As the indirect effects of both marketing-specific IT capital and organizational memory on market performance are statistically relevant, the above means that, in the case of marketing-specific IT capital, partial mediation applies (i.e., such component of marketing-specific SC has additional benefits on market performance beyond the promotion of marketing innovation), while in the case of marketing-specific organizational memory, full mediation applies (i.e., marketing-specific organizational memory positively affects market performance inasmuch it contributes to marketing innovation).

Regarding the specific relevance of each of the elements making up marketing-specific IT capital and organizational memory in terms of enhancing both marketing innovation and market performance (detailed tables have been omitted for space reasons), identifying patterns of costumer behavior constitutes the most important functionality provided by marketing-specific IT solutions (γ=0.294), followed by knowledge generated in terms product/service performance (γ=0.274), potential new customers (γ=0.216), existing customer groups or segments (γ=0.208), and top industry insiders and influencers (γ=0.203). On the contrary, knowledge generated on customer profitability and market trends seems to be completely irrelevant (i.e., their specific weights are very close to 0).

In the case of marketing-specific organizational memory, having updated, relevant, and easily information records about competitors shows the highest weight (γ=0.355), followed by having well established routines and procedures (γ=0.257), updated and easily accessible information about relevant trends in the market (γ=0.217), and also about key projects, deals, and/or campaigns so employees can reuse them when needed (γ=0.205). Conversely, having updated and easily accessible records regarding best practices and lessons learned; a "who knows what" directory; and updated, relevant, and easily information records about customers are not significant.

Finally, although all dimensions within marketing innovation are statistically relevant to improve market performance, innovation in pricing shows the highest weight (γ=0.420), followed by innovation in communication (γ=0.317), and in product/service distribution (γ=0.302). Thus, innovation in product/service design, image, and/or packaging is the least relevant, although still significant (0.153).

6 Conclusions

The research carried out shows the relevance of marketing-specific SC (both IT capital and organizational memory) on marketing innovation and market performance and

highlights the specific elements within each independent and mediating variable that are the most influential to maximize the amount of variance explained.

Results confirm that an organization's preserved knowledge is a key input for incremental innovation (and, thus, marketing innovation) to occur (Abernathy and Clark, 1985; Subramaniam and Youndt, 2005). Moreover, our findings highlight existing complementarities between IT-generated marketing-specific knowledge and other forms of organizational memory that do not necessarily involve computer-based data processing.

In the case of customers, results show that IT-generated knowledge constitutes a must to guide marketing innovation efforts and to attract and retain customers. As indicators' weights clearly point out, merely having historical information records about customers is not enough: marketing-specific IT solutions are needed that help extract new knowledge from these records for marketing innovation to succeed. Conversely, in the case of market knowledge, it seems that marketing-specific IT solutions in this regard are not as effective as more traditional forms of organizational memory based on data recording from direct observation.

Following with other forms of organizational memory, the results obtained also suggest that best practices and lessons learned are not effective unless they become embedded in organizational routines and procedures, and that facilitating the recording and retrieval of information regarding past projects, deals, and/or campaigns constitutes a very solid foundation to build new marketing solutions. However, providing marketing employees with a complete and updated "who knows what directory" so they can find the right expert to take advice from when needed proves to be irrelevant. In other words, investing in a project repository seems to be much more effective than having access to expert advice, which seems to highlight that marketing innovation relies more on codified knowledge than on tacit knowledge.

Going back to IT-generated knowledge, the results obtained show that product-performance-related knowledge and knowledge on top industry insiders and influencers complete the recipe to increase the chances of successful marketing innovation and market performance.

This study has a number of limitations that may be addressed in future research. First, survey responses were collected only from Spanish firms, and therefore the study is based on data from a single country. Future research could extend the analysis to other national contexts. Second, a key informant in each company reported the data collected through a structured cross-sectional survey. This allowed us to access firm-level perceptional data and test our hypotheses, but there may be limitations regarding the scope of informants' knowledge and the ability to draw causal inferences. Future studies could thus adopt different types of measurement approaches and combine them with various ways to measure innovation and other types of performance over time.

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Publication IV

Peñalba-Aguirrezabalaga, C., Ritala, P., and Sáenz, J.
Putting marketing knowledge to use: Marketing-specific relational capital and product/service innovation performance

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Putting marketing knowledge to use: marketing-specific relational capital and product/service innovation performance

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Abstract

Purpose – The importance of integrating both internal and external knowledge into the product/service innovation process has been widely recognized in the knowledge management and innovation literature. Likewise, the role of the marketing and sales function as a driver of innovation has been stressed because of its market-facing role. However, limited research has investigated the complementarity of both internal and external knowledge regarding product/service innovation performance in a marketing context. The purpose of this study is to analyze marketing departments' role in accessing internal and external knowledge resources (i.e. marketing-specific relational capital [RC]) to reach improved product and service innovation performance.

Design/methodology/approach – The analysis uses empirical evidence collected by a structured survey of 346 respondents representing marketing and sales functions in Spanish companies.

Findings – The survey revealed that marketing-specific internal relational capital at the department and inter-department levels, as well as noncustomer external RC, are directly associated with product/service innovation performance. Further, the analyses show that the relationship between customer-specific RC and innovation performance is mediated by other types of RC, making it a fundamental antecedent to the innovation process. Finally, significant differences in marketing-specific RC subcomponents were found between business-to-consumer (B2C) and business-to-business (B2B) firms.

Originality/value – This study makes a valuable contribution to marketing and management literature by revealing the types of social interactions in the marketing function that enable access to knowledge sources that promote successful product/service innovation.

Keywords Relational capital, Customer relational capital, Intellectual capital, Knowledge resources, Innovation performance, Marketing

Paper type Research paper

1. Introduction

The product and service innovation are considered critical to a company's financial performance over time, as shown in broad-based studies in different fields (Damanpour *et al.*, 2009; Geroski *et al.*, 1993; Verona and Ravasi, 2003). For this reason, researchers have sought to find key capabilities and practices through which firms can improve product and service innovation performance. The determinant of innovation that has received the most attention from researchers is research and development (R&D) (Becheikh *et al.*, 2006; Nijssen *et al.*, 2006). More recently, however, the role of marketing and sales function as a driver of innovation has increasingly been highlighted because of its market-facing role, which provides visibility to new technology trends, customer needs and competitive environments (Atuahene-Gima *et al.*, 2005; Danneels, 2007). Marketing tends to have a major role in accumulating and translating knowledge within a company (i.e. in the development of knowledge integration capabilities), eventually resulting in improved product and service innovation performance.

Because of the increasing amount of specialized knowledge dispersed across heterogeneous actors, it is broadly recognized that firms should integrate both internal and external knowledge in their innovation processes (Henttonen *et al.*, 2011; Laursen and Salter, 2006; Tsai and Ghoshal, 1998; West and Bogers, 2014). Therefore, we examine how marketing

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knowledge is put to use in companies, including knowledge from both internal and external sources.

From an internal perspective, different authors have demonstrated the relevance of knowledge sharing and cross-functional coordination between marketing and R&D departments in developing new products or services (Bendoly *et al.*, 2012; Ernst *et al.*, 2010; Tsai and Hsu, 2014). The patterned interactions between departments result in a system of "intersubjectively shared meanings" (Walsh and Ungson, 1991) that enables superior tracking, acquisition and dissemination of information related to customers' and competitors' activities.

From an external perspective, many studies have highlighted the relevance of understanding current and future customer needs, competitor strategies and actions, channel requirements and abilities and the broader business environment to innovate successfully (Atuahene-Gima *et al.*, 2005). Indeed, it is through the ongoing monitoring of customers, their needs and market conditions that firms can adapt, allowing them to develop and deliver the products and services that customers value (Atuahene-Gima *et al.*, 2005; Day, 1994; Kohli and Jaworski, 1990). Moreover, interactions with external supply chain partners allow firms to discover new product opportunities and understand new market dynamics (Bendoly *et al.*, 2012; Malhotra *et al.*, 2005).

To reap the benefits of internal and external knowledge for product and service innovation, this knowledge needs to be integrated within the organization (Kogut and Zander, 1992). Knowledge integration involves both "the shared knowledge of individuals and the combined knowledge that emerges from their interactions" (Okhuysen and Eisenhardt, 2002, p. 371). Relational characteristics (Huang and Newell, 2003; Tell, 2011) and knowledge embedded in relationships (i.e. relational or social capital; Youndt *et al.*, 2004) are two key factors that influence knowledge integration. Thus, we focus on *relational capital* (RC) by using a knowledge-based perspective on relationships (Peñalba-Aguirrezabalaga *et al.*, 2020).

Although previous research has highlighted the importance of both internal and external RC to develop new products and/or services or improve existing ones (Chen *et al.*, 2006; Chen *et al.*, 2014; Hsu and Fang, 2009), no studies investigate how different types of RC complement each other and work together to enhance product/service innovation performance. This constitutes an important research gap because it implies companies lack guidance about how to manage and prioritize their social relationships and the specific networks of actors in which knowledge exchange mechanisms should be implemented to generate innovative products and/or services that best match customers' needs and preferences. Furthermore, we problematize the existing literature's focus on external relationships at the firm level or within the R&D function (Laursen and Salter, 2006; Henttonen *et al.*, 2011), which leaves lacunae in our understanding of the potential of marketing and sales RC.

Given the pivotal role of marketing and sales function in the development of products and services and following recent calls for a more contextual approach toward intellectual capital (IC) (Kianto *et al.*, 2020), this study focuses on marketing-specific RC (Peñalba-Aguirrezabalaga *et al.*, 2020) and explores the moderating role of customer type (i.e. businesses vs consumers) because of the important differences that exist between business-to-business (B2B) and business-to-consumer (B2C) firms regarding their marketing and selling processes (Kotler and Armstrong, 2018).

Building on survey data from 346 respondents in Spanish companies, our study contributes to the literature by revealing the role of knowledge generated through different types of external and internal relationships held by the marketing and sales function when it comes to enhancing product/service innovation performance in B2B and B2C firms.

2. Theoretical background

This study focuses on two main literature streams as the foundations of RC: the knowledge-based view (Grant, 1996), which is an extension of the resource-based view (Barney, 1991; Wernerfelt, 1984) and the relational view (Dyer and Singh, 1998). In an attempt to explain the differences in firm performance, the resource-based view posits that those resources and capabilities that are rare, valuable, nonsubstitutable and difficult to imitate allow a firm to achieve a competitive advantage over competing organizations.

In this regard, the knowledge-based view sees knowledge as the most strategically important resource of the firm due to the existing barriers to its transfer and replication, and posits that, under dynamic competition, superior profitability is likely to be associated with resource and capability-based advantages that are likely to derive from superior access to and integration of specialized knowledge (Grant, 1996). Indeed, empirical studies have found that knowledge-based resources are important for firm performance and competitiveness (McEvily and Chakravarthy, 2002; Wiklund and Shepherd, 2003).

However, it should be acknowledged that a company is always embedded in a network of relationships (Dyer and Singh, 1998). This means that a firm's critical resources – and knowledge resources in particular (Grant, 1996) – may extend beyond firm boundaries and be embedded in interfirm resources and routines (Dyer and Singh, 1998). Based on this backdrop, we study how knowledge resources embedded in the marketing and sales department's networks of relationships (i.e. marketing-specific RC) can be an important source of a competitive advantage through their contribution to product/service innovation performance.

2.1 Relational capital and innovation

The concept of RC has evolved within the broader discussion on IC. Initially, the focus was only on customer relationships (Bontis, 1998; Saint-Onge, 1996; Stewart, 1997). Over time, however, the scope of external relationships extended to include relationships with other external stakeholders, such as suppliers, alliance partners, shareholders, investors or communities (Marr, 2006; Roos *et al.*, 1998). Later, internal relationships were also included (Inkinen *et al.*, 2017; Youndt *et al.*, 2004). In this study, following Youndt *et al.* (2004), we adopt a knowledge-based approach to IC, viewing RC as the *knowledge that is accessible to a firm* through *its internal and external relationships*.

From an innovation perspective, the interactions between different actors inside and outside a company can provide access to knowledge resources that may facilitate the development of new products and/or services (Martín-de Castro, 2015; Tsai and Hsu, 2014). Moreover, innovation often involves a "recombinant

search" (Fleming and Sorenson, 2004) of specialized, differentiated, yet complementary knowledge (Tell, 2011). From this perspective, an innovation is achieved by either combining fundamental bits of knowledge in a novel manner or reconfiguring existing combinations (Henderson and Clark, 1990). Recombination may result in completely new products and services or applying existing products to new markets and uses (Fleming and Sorenson, 2004). This process of recombinant search relies on the social relationships between individuals. As Nonaka and Takeuchi (1995) point out, to create a new product or service, a networking process is needed that stimulates the combination of different pieces of knowledge.

2.2 Marketing as a knowledge integration function for innovation: marketing-specific relational capital

Marketing is often associated with firms' innovation outcomes because of its contribution to the development of new products/services (Danneels, 2007). Product/service innovation performance depends on not only technological knowledge resources but also the ability of firms to deploy accessible knowledge for commercially successful products (Adams *et al.*, 2019). In this sense, marketing can play a key role in which knowledge resources gathered from within and outside the firm are integrated and deployed to create value for customers (Davcik and Sharma, 2016). Given the potential for the marketing department to integrate knowledge, we focus on the knowledge embedded in the different types of relationships that marketing and sales staff maintain with different actors – that is, *marketing-specific RC* (Peñalba-Aguirrezabalaga *et al.*, 2020) – and their potential to contribute to product/service innovation.

Following the accepted distinction in the IC literature between internal and external RC (Inkinen *et al.*, 2017), we define marketing-specific RC as all marketing-related knowledge that is generated, transferred and preserved through internal and external interpersonal relationships (Peñalba-Aguirrezabalaga *et al.*, 2020). From an internal perspective, this includes knowledge embedded in the relationships among employees within the marketing department and between these employees and people in other departments (Tsai and Ghoshal, 1998; Yli-Renko *et al.*, 2002). In other words, marketing-specific internal RC is the knowledge embedded in social structures within organizational boundaries (Kianto and Waajakoski, 2010). From an external perspective, marketing-specific RC includes the knowledge embedded in the relationships between employees in the marketing department and customers, and between these employees and other external actors, such as competitors, suppliers, industry associations or any other stakeholder that may influence organizational life (Cabrita and Bontis, 2008). Put differently, marketing-specific external RC is the knowledge embedded in the relationships established by the marketing department with the outside environment (Bontis, 1999; Kogut and Zander, 1992). To sum up, we differentiate four main categories within marketing-specific RC: intradepartment RC, inter-department RC, customer-related RC and RC related to other external actors.

This categorization is fully consistent with the knowledge integration hierarchy put forward by the knowledge-based view. According to Grant (1996), new product development capability (i.e. product/service innovation) is a high-level capability that involves especially wide-ranging integration of specialist knowledge related to different functional capabilities (e.g. operations, R&D, marketing and human resource management; i.e. interdepartmental knowledge integration), as well as to activity- and task-related capabilities at the functional level (e.g. market research, customer relationship management, communication and social media management in the marketing function; i.e. intradepartmental knowledge integration) and to different external actors (e.g. customers, distributors, furnishers, complementors and competitors). As put forward by the knowledge-based view, such multi-level knowledge integration contributes to the development of organizational capabilities (in this case, new product development capability) that leads to superior profitability (Grant, 1996).

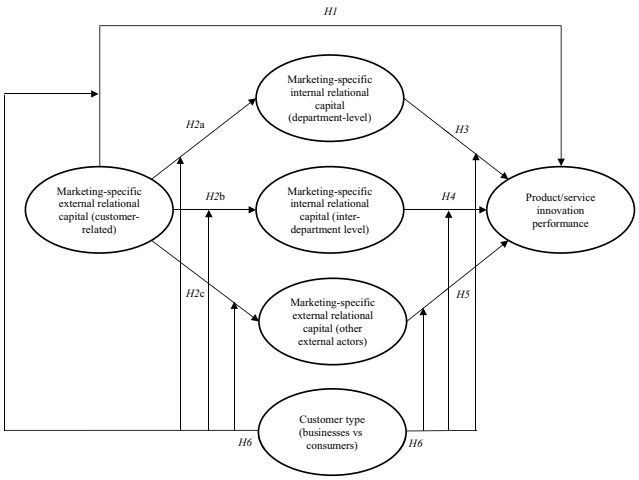
3. Hypothesis development

Before developing the research hypotheses, we first define our dependent variable – product/service innovation performance – and the overall hypothesized model. Here, we follow Griffin and Page (1993, 1996), who reported the findings of a Product Development and Management Association (PDMA) task force studying the measures of product development success and failure. Three categories of measures were identified that were equally relevant for both academics and companies: customer-related measures (e.g. customer acceptance, revenue growth and market share), product-related measures (e.g. development costs and speed to market) and financial performance (e.g. innovation profitability), which were then labeled as customer-based success, technical performance success and financial success (Griffin and Page,1996). Thus, product/service innovation performance is portrayed as a combination of the above dimensions.

Our research model and hypotheses are based on our expectation of the key RC dimensions (each one representing a specific knowledge integration space) that can facilitate product and service innovation success by boosting new product development capability. Importantly, we argue that knowledge gained by marketing and sales staff through customer relationships (which constitute the core of their job) influences product/service innovation performance by fueling other types of marketing-specific RC. In other words, we consider customer-related RC as the primary input for the marketing department to exert its knowledge integration role across various types of RC to support product/service innovation performance. Figure 1 provides a visual summary of the research model and hypotheses that are discussed in the remainder of Section 3.

Marketing-specific external RC (customer-related) refers to the knowledge generated, transferred and preserved through interpersonal relationships between marketers and customers (Peñalba-Aguirrezabalaga *et al.*, 2020). In contrast to a follower, a leading company understands what customers want in a product or service better than anyone else (Bontis, 1998). In the context of innovation, customers participate in value cocreation by playing an active role in new product development (Cui and Wu, 2016; Sofka and Grimpe, 2010). Customers could be involved as an information source, codevelopers or innovators. Involving customers in the innovation process allows for developing products with better market acceptance (Mahr *et al.*, 2014) and creates an increased

Figure 1 Research model and hypotheses



legitimacy for the new offerings provided by the firm and its ecosystem (Thomas and Ritala, 2021).

The marketing literature has recognized high-quality customer relationships as a key determinant of market performance (Boles *et al.*, 1997). For instance, Joshi and Sharma (2004) stated that understanding customers and their preferences (i.e. customer knowledge) are essential for creating successful new products. Furthermore, Tsai and Hsu (2014) found that the integration of influential customers' viewpoints into product development produces higher product performance. Through relationships with customers, a marketing department gathers critical knowledge that improves the fit between new product/service features and customers' preferences. Consequently, we hypothesize the following:

H1. Marketing-specific external RC (customer-related) is positively associated with product/service innovation performance.

When interacting with customers, marketers gain relevant insights (Jiménez-Jiménez and Cegarra-Navarro, 2007) into what customers need, what they prefer, how they react, how they use the company's products and/or services and how they view competitors. Later, when employees in the marketing department interact and exchange their individual insights, a richer, more complete picture emerges because of the integration of knowledge (Maurer *et al.*, 2011). This provides a better foundation for innovation efforts and marketing decisions related to the introduction of new products and/or services. Likewise, when marketers interact with people from other parts of the company (e.g. manufacturing or engineering) and exchange the insights they gained regarding how customers perceive and/or use the firm's products, new interpretations and conclusions may emerge (Tsai and Hsu, 2014). For example, integrating these insights with specialized technical knowledge possessed by engineers may generate a better understanding of the customer–product relationship. Again, this integrated knowledge becomes a solid foundation to guide innovation efforts. Similarly, when marketers interact with other external actors, such as distributors and share the insights they gained about customers' buying experiences, new ideas to improve these experiences may emerge. In this vein, Rai *et al.* (2006) and Rollins *et al.* (2011) showed the benefits derived from sharing customer knowledge through the partners of the supply chain. Based on the above, we hypothesize the following:

H2. Marketing-specific external RC (customer-related) is positively associated with marketing-specific internal RC, both at the department, inter-department level and with marketing-specific external RC regarding other external actors.

Continuing with *internal RC at the department level*, the ties between organization members serve as channels for information exchange and knowledge transfer, facilitating the mobilization of existing knowledge resources (Maurer *et al.*, 2011). According to Allee (2003), socialization among members of the same department and conversations about everyday work are essential for encouraging knowledge sharing at the team level, helping identify the knowledge gaps and resources needed to fill those gaps. In addition, social interaction supports the assimilation of knowledge resources by allowing organization members to exchange and combine each other's knowledge to generate new knowledge, which is critical for innovation (Tsai and Ghoshal, 1998). Through social ties, organization members can inform their colleagues about the existence and location of relevant knowledge (Smith *et al.*, 2014). In the marketing context, this could be knowledge about customers' needs and preferences or about competitors and market trends. Moreover, a greater number of direct ties between department members not only grants potential access to organizational knowledge resources, but also increase the ease and extent of knowledge transfer (Maurer *et al.*, 2011). Knowledge transfer contributes to the reallocation of existing resources or the combination of new resources that may provide relevant insights, generating a new collective understanding that fosters innovation outcomes (Song *et al.*, 2005). Therefore, it can be expected that marketing departments with strong internal RC are better able to contribute to firms' product and service innovation performance. Accordingly, we hypothesize the following:

H3. Marketing-specific internal RC at the department level is positively associated with product/service innovation performance.

Moving on now to *marketing-specific internal RC at the inter-department level*, it is well-known that interdepartmental integration and interaction are crucial for the creation and diffusion of product innovations (Kahn, 1996; Tsai and Ghoshal, 1998). In particular, knowledge transfer between departments can trigger the development of new or better products because it facilitates the integration and combination of specialized knowledge resources (Smith *et al.*, 2014). The literature confirms the importance of knowledge sharing and collaboration between the marketing department and other firm departments in new product development. For example, Hise *et al.* (1990) and Salojärvi *et al.* (2015) found that cooperation and knowledge sharing between the marketing and R&D departments encourage the integration of market and technology knowledge, promoting the development of products technically superior and valuable for customers (see

also Mostaghel *et al.*, 2019). Additionally, Bendoly *et al.* (2012) proposed that the patterned interactions between the marketing department and other departments in a company result in a system of "intersubjectively shared meanings" (Walsh and Ungson, 1991). Based on the above, we suggest the following:

H4. Marketing-specific internal RC at the inter-department level is positively associated with product/service innovation performance.

The last marketing-specific RC category is *marketing-specific external RC (other external actors)*. Henttonen *et al.* (2011) highlighted that the knowledge required in the innovation process – especially in radical innovations – is often found outside organizational boundaries. Indeed, external networks are vital for the discovery of opportunities and testing of new ideas (Lee *et al.*, 2001), allowing the company to gain access to the external knowledge and competences that complement internal ones and that are necessary to develop new products and/or services (Wu *et al.*, 2007). Moreover, searching for knowledge across organizational boundaries offers the potential for new combinations that are truly innovative (Miller *et al.*, 2007). Marketing managers are involved in significant interactions with external actors, such as suppliers, channel members, agencies, key industry players, government agencies and even competitors (Gök and Hacioglu, 2010), all of which play proactive roles in the design of winning technologies, services and marketing strategies. Research has also stressed the need for external relationships and networks because these can provide new knowledge that complements existing marketing knowledge, resulting in improved innovation outcomes (Jiménez-Jiménez and Cegarra-Navarro, 2007; Martín-de Castro, 2015). Thus, we hypothesize the following:

H5. Marketing-specific external RC (other external actors) is positively associated with product/service innovation performance.

Firms and their marketing professionals differ markedly when it comes to the B2B and B2C sectors (Kotler *et al.*, 2006). As opposed to B2C firms (where customer relationships tend to be concentrated in the marketing and sales department), in B2B companies, relationships with customers tend to be distributed across different departments (Gummesson, 2004; Wang *et al.*, 2018), for example, it would not be unusual for machinery manufacturer engineers and maintenance teams to regularly meet customers. Moreover, business buyers face more complex buying decisions than consumer buyers because business purchases often involve large sums of money, complex technical and economic considerations and interactions among people at many levels of the buyer's organization (Kotler and Armstrong, 2018; Wang *et al.*, 2018). Consequently, in B2B settings, the buyer and seller are often much more dependent on each other (Aarikka-Stenroos and Jaakkola, 2012). Given the larger set of contact points with customers in B2B companies, we expect that the relative relevance of customer-related RC may be somewhat diluted, whereas the degree of relevance of internal RC at the inter-department level may be reinforced. Additionally, as demand in B2B markets constitutes a "derived demand" (i.e. it ultimately derives from the demand for consumer goods; Kotler and Armstrong, 2018) and competitors' and complementors' products and services tend to be less visible than in B2C markets, the relationships with distributors and direct interaction with competitors and complementors may become more relevant to identify opportunities for product/service improvement and/or differentiation.

Although we expect that B2B and B2C companies involve the above-discussed differences, the existing literature provides a broad-based understanding that B2B and B2C companies might be different, but there are no specific arguments that would allow for detailed hypotheses. Therefore, we formulate an explorative contingency hypothesis regarding the moderating role of firm type (B2B vs B2C):

H6. The customer type (i.e. consumers vs businesses) moderates the relationships between marketing-specific RC and product/service innovation performance.

4. Research methodology

4.1 Sample and data collection

This study examines Spanish companies with at least 100 employees to guarantee that firms have a well-established marketing and sales function. The *Sistema de Análisis de Balances Ibéricos* (System of Iberian Balance Sheet Analysis; SABI) database was used to identify the companies. The search resulted in 2,346 firms that were then classified into different groups according to different combinations of manufacture/service, high-tech/low-tech and medium-sized/large-sized firms because these characteristics may cause differences in the degree of development of knowledge resources (Buenechea-Elberdin, 2017).

With these 2,436 companies, we calculated the sample size needed to conduct a representative study (342 firms) and then contacted the target population by phone to invite them to participate in the survey, guaranteeing total confidentiality. A stratified sampling procedure was applied to guarantee that different proportions of company types according to industry, size and technology level were preserved as in the population. The final sample included 346 companies that answered the provided email or phone survey: 178 companies were manufacturing firms, of which 116 were low-techs (87 B2B and 29 B2C) and 62 high-techs (40 B2B and 22 B2C) and 168 companies were service firms, of which 129 were low-techs (58 B2B and 71 B2C) and 39 high-techs (29 B2B and 10 B2C). To distinguish between B2B and B2C firms, we examined companies' responses about the type of client they served. If they claimed to serve only corporate customers, we classified them as B2B (which was the case for 214 companies), and if they claimed to serve only end consumers or both corporate customers and end consumers, we classified them as B2C (which was the case for 132 firms). Regarding the respondents' profiles, 85.26% held a managerial role in the marketing domain, 6.65% were marketing and sales technicians or assistants, 5.20% were CEOs, 1.45% were salespeople and remaining 1.45% did not specify their role.

The final sample size was large enough to conduct a statistical study based on the partial least squares (PLS) structural equation modeling (SEM) approach. Considering the most complex regression of the model (which contained

nine predictors), the minimum R^2 to be expected (25%), a significance level of 5% and a statistical power of 80%, the minimum sample size was calculated, which should consist of 88 firms (Cohen, 1992). Thus, our final sample was well above the minimum threshold, which is true for the B2B and B2C subsamples as well.

Because the survey data were reported by single informants, there was a risk of common-method bias (Podsakoff *et al.*, 2003). Thus, we conducted a full collinearity test developed specifically for PLS-SEM (Kock, 2015), which involved both vertical (predictor–predictor) and lateral (predictor–criterion) collinearity analyses. According to Kock (2015), if a full collinearity test reveals all the variance inflation factors (VIFs) to be equal to or lower than 3.3, the model can be considered free of common-method bias. This is the case in our research model; the highest VIF was 2.667. Therefore, our data did not feature common-method variance.

4.2 Measures

Our research model included one independent variable (customer-related marketing-specific external RC), three mediating variables (the remaining marketing-specific RC subcomponents), one dependent variable (product/service innovation performance), one moderating variable (customer type: businesses vs consumers) and four control variables (see later). Independent and dependent variables were measured using the seven-point Likert scales, while the remaining variables were measured through different scales according to their nature (Table 1).

The IC perspective plays a crucial role in the development of a scale for IC subcomponents. According to Aramburu and Sáenz (2011), there are two main perspectives: holistic and knowledge based. The holistic perspective views IC as the sum of all intangible resources that make up the invisible part of the firm's balance sheet. The knowledge-based perspective, however, is more restrictive and views IC as the sum of all knowledge that firms leverage to gain a competitive advantage (i.e. knowledge is the only intangible resource included). As previously explained, in the current research, we adopted a knowledge-based perspective because we wanted to understand how the marketing function can integrate knowledge embedded in different types of relationships. Therefore, we relied on a newly developed and validated scale for marketing-specific RC subcomponents (Peñalba-Aguirrezabalaga *et al.*, 2020) because the existing scales in the IC literature focus on relationships instead of the knowledge derived from those relationships. The suggested scales are based on the definition of social capital or RC proposed by Youndt *et al.* (2004) – "knowledge resources embedded within, available through, and derived from a network of relationships" (p. 338) – on marketing-specific knowledge objects (Kotler and Armstrong, 2018; Rossiter, 2001) and on the specific context of each kind of relationship (internal – department or inter-department level – or external – relationships with customers or with other external actors).

The scale we used for product/service innovation performance (i.e. the dependent variable) is based on the work by Griffin and Page on product/service innovation measures that are deemed relevant in both academia and practice (1993, 1996). The measures identified by these authors were grouped into three categories: customer-based success, technical performance success and financial success. We selected representative measures from each category, and in relation to these items, we asked the managers to indicate the relative performance of their firm against major competitors (Venkatraman and Ramanujam, 1987). Even though this leaves measurement units to the respondents' discretion (Ketokivi and Schroeder, 2004), asking informants to directly provide figures such as new product/service share in turnover would lead to high nonresponse rates (Boyer *et al.*, 1997). Therefore, we decided to focus on perceptual performance measures compared with competitors. Moreover, Ketokivi and Schroeder (2004) demonstrated that perceptual data from senior managers (which tend to strongly correlate with objective data; Venkatraman and Ramanujam, 1987) adequately satisfy reliability and validity requirements.

RC and product/service innovation performance are fundamentally conceptual abstractions, that is, designed theoretical constructs or human-made conceptual "artifacts" (Henseler, 2017) that do not have an autonomous existence in nature as opposed to behavior, attitudes or perceptions. When working with designed conceptual variables, researchers should apply a composite measurement model (Henseler, 2017). In composite measurement, the indicators or observable variables define or build up the conceptual variable; they do not cause it, but they make it up (i.e. it is a "definitorial" relationship). Consequently, the construct is obtained as a linear combination of its indicators without an error term, and each indicator enters the linear combination with a specific weight.

These weights can be calculated by means of correlations (mode "A" composites) or by using multiple regression (mode "B" composites) (Sarstedt *et al.*, 2016). Mode "A" composites involve bivariate correlations between each indicator and the construct. In contrast, mode "B" composites involve multiple ordinary least squares (OLS) regression of the construct or proxy variable on its associated indicators. Because of the definitorial nature of indicators in relation to the designed conceptual variables, this is the "natural" way of posing the relationships between indicators and constructs in composite measurement (Sarstedt *et al.*, 2016). However, collinearity among indicators could cause problems in estimating indicators' weights in mode "B" composites. Under these circumstances, using mode "A" composites should be considered (Henseler, 2017; Rigdon, 2016).

To control for possible confounding effects, we added additional variables, such as company size, year of foundation (company age), industry (manufacturing or service) and technology intensity (medium-high and high technology or medium-low and low technology).

4.3 Statistical analyses

We analyzed our research model using SEM based on PLS using SmartPLS 3.2.8 software (Ringle *et al.*, 2015). Using PLS-SEM avoids the averaging of construct indicator values required by an OLS regression, which is problematic because the constructs become less reliable and may provoke structural model estimates to deflate, potentially triggering Type II errors (Hair *et al.*, 2019). Conversely, Henseler *et al.* (2014) showed that PLS-SEM substantially reduces the effects of measurement errors, thereby increasing the reliability of construct scores. Moreover, Hair *et al.* (2019) showed that PLS-SEM is superior

Table 1 Measurement model evaluation (1 of 2)

Constructs and measures	Item wording	VIF	Weight	*p*-val.
Internal RC (department level) (IRCD) **Mode "A" composite** **Convergency: 0.863**	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction within your marketing and sales department(s) (e.g. regular meetings, informal talks and joint work) give rise to:	–	–	–
IRCD1	New and relevant insights about customers	3.890	0.147	0.000
IRCD2	New and relevant insights about competitors	3.609	0.134	0.000
IRCD3	New and relevant insights about markets	3.268	0.153	0.000
IRCD4	New and relevant insights about technological trends	2.341	0.141	0.000
IRCD5	Shared best practices	4.706	0.148	0.000
IRCD6	Mutual learning	5.307	0.159	0.000
IRCD7	Effective ways to diagnose and solve problems	4.396	0.145	0.000
IRCD8	New perspectives that challenge existing assumptions	3.523	0.150	0.000
IRCD9*	New and relevant knowledge to improve performance	N/A	N/A	N/A
Internal RC (inter-department level) (IRCID) **Mode "A" composite** **Convergency: 0.888**	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, informal talks and joint work) between your marketing and sales department(s) and other functions and/or departments give rise to:	–	–	–
IRCID1	A truly shared vision	3.694	0.128	0.000
IRCID2	A good understanding of existing interdependencies (i.e. how our work affects and is affected by other functions and/or departments)	4.386	0.135	0.000
IRCID3	A shared understanding of problems and challenges	7.416	0.140	0.000
IRCID4	A shared understanding of system constraints	4.753	0.137	0.000
IRCID5	A shared understanding of customer needs	4.405	0.145	0.000
IRCID6	New and relevant insights about how to better integrate and/or coordinate work from different functions and/or departments	5.164	0.137	0.000
IRCID7	Effective ways to diagnose and solve problems	5.180	0.148	0.000
IRCID8	New perspectives that challenge existing assumptions	3.960	0.145	0.000
IRCID9*	New and relevant knowledge to improve performance	N/A	N/A	N/A
External RC (customer-related) (ERCC) **Mode "A" composite** **Convergency: 0.848**	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction with customers (e.g. regular meetings, visits, face-to-face events and joint work) give rise to:	–	–	–
ERCC1	A better understanding of customers	3.718	0.164	0.000
ERCC2	A better understanding of how customers use our products and/or services	4.006	0.164	0.000
ERCC3	The discovery of unsolved problems	3.292	0.162	0.000
ERCC4	The discovery of improvement opportunities	4.370	0.161	0.000
ERCC5	New and relevant insights about competitors	2.253	0.158	0.000
ERCC6	Effective ways to diagnose and solve problems	3.943	0.180	0.000
ERCC7	New perspectives that challenge existing assumptions	3.364	0.170	0.000
ERCC8*	New and relevant knowledge to improve performance	N/A	N/A	N/A
External RC (other external actors) (ERCO) **Mode "A" composite** **Convergency: 0.863**	Rate the extent (1 = not at all, 7 = very much) to which current patterns of personal interaction (e.g. regular meetings, face-to-face events and joint work) between marketing and salespeople and other external actors (e.g. regulators, suppliers, researchers, competitors) give rise to:			
ERCO1	New and relevant insights about markets	4.299	0.129	0.000
ERCO2	New and relevant insights about technological trends	3.267	0.128	0.000
ERCO3	New and relevant insights about such external actors	4.296	0.142	0.000
ERCO4	The discovery of new opportunities	4.314	0.142	0.000
ERCO5	The discovery of potential threats	4.269	0.149	0.000
ERCO6	The discovery of new and relevant practices that could be adopted by the company	3.671	0.141	0.000

(***continued***)

Table 1

Constructs and measures	Item wording	VIF	Weight	*p*-val.
ERCO7	Effective ways to diagnose and solve problems	5.487	0.150	0.000
ERCO8	New perspectives that challenge existing assumptions	5.501	0.149	0.000
ERCO9*	New and relevant knowledge to improve performance	N/A	N/A	N/A
Product/service innovation performance (PSIP)	Compare your company's performance with that of competitors	–	–	–
Mode "B" composite	regarding the following items related to product/service			
Convergency: 0.862	innovation performance (1 = much worse than competitors, 7 = much better than competitors):			
PSIP1	Customers' acceptance of new or improved products and/or services	2.769	0.186	0.124
PSIP2	Revenue growth due to new or improved products and/or services	3.348	0.265	0.053
PSIP3	Development costs of new or improved products and/or services	2.281	0.260	0.025
PSIP4	Time to market for new or improved products and/or services	2.093	0.234	0.054
PSIP5	Profitability of new or improved products and/or services	2.704	0.238	0.059
PSIP6*	Product/service innovation performance as a whole	N/A	N/A	N/A
Control variables	–	–	–	–
Company size (SIZE)	Natural logarithm of the number of employees	N/A	N/A	N/A
Year of found. (YEARF)	Year in which the company was founded	N/A	N/A	N/A
Industry (IND)	1 = Manufacturing; 0 = Services	N/A	N/A	N/A
Technology intensity (TI)	1 = High-tech; 0 = Low-tech	N/A	N/A	N/A
Customer type (CT)	1 = B2B; 0 = B2C	N/A	N/A	N/A

Note: *Summary indicator for convergent validity assessment

to OLS regression when the research model includes mediated relationships, as is the case in this study. Regression only allows for the sequential testing of model parts without taking the entire model structure into account. However, PLS-SEM considers the entire theoretical structural model in the estimation process.

Finally, we chose PLS-SEM as opposed to covariance-based SEM based on the conceptual variables under study (Peñalba-Aguirrezabalaga *et al.*, 2020). As previously explained, our independent, mediating and dependent variables are human-made conceptual "artifacts." Thus, a composite measurement model applies. Unlike covariance-based SEM, which adopts a common factor approach implying an unobservable but really existing variable produces a series of manifestations that are highly correlated because of their common origin, PLS-based SEM relies only on composites (Rigdon, 2016) (i.e. linear combinations of measures that shape the abstract concepts created by the human brain).

Moreover, a multigroup analysis was conducted by means of the PLS-MGA approach (Henseler *et al.*, 2009) to determine the extent to which customer type moderates the hypothesized relationships.

5. Results

5.1 Measurement model evaluation

As stated by Rigdon (2012), "if there is no actual concept but only a theoretical definition, validation cannot encompass anything more than an assessment of fidelity between the definition and content of the measurement item" (p. 348). Thus, researchers should analyze the convergent validity to determine the extent to which the indicators making up a construct capture the essence of the conceptual variable they are intended to represent. According to Hair *et al.* (2017), this requires a redundancy analysis. To perform this analysis, one indicator that summarizes the conceptual variable under study is included in the survey (see the indicators marked with an asterisk in Table 1), and then, the correlation between the composite and this summary indicator can be calculated. The appropriate convergent validity requires a correlation of 0.707 or higher, which translates into 50% of the variance explained for the summary indicator (Hair *et al.*, 2017). As we can observe in Table 1, the appropriate convergent validity was found for all constructs. The convergency values range from 0.848 in the case of external RC (customer level) to 0.888 in the case of internal RC (inter-department level).

Potential problems in the estimation of indicators' weights because of collinearity issues are another aspect that must be considered. Ideally, VIF values should be lower than 3 (Hair *et al.*, 2019). As Table 1 reveals, several indicators in the RC constructs exceed the threshold value of 3. Therefore, to avoid problems related to the reversed signs for indicators' weights because of collinearity, we applied a mode "A" composite (i.e. correlation weights). One indicator of product/service innovation performance, PSIP2, also showed a VIF value slightly higher than 3. However, because the sign of this indicator's weight was not reversed, we applied a mode "B" composite.

Regarding the correlations between the latent variables, none are excessively high. The largest correlation (0.741) was found between internal RC (department level) and internal RC (inter-department level).

5.2 Structural model evaluation

Once we guaranteed the quality of the measurement model, we used bootstrapping to test the strength of the established relationships between the constructs. More specifically, we

used a one-tailed 5,000 subsample bias-corrected and accelerated bootstrap (Hair *et al.*, 2017). Table 2 shows the results.

Even though external RC (customer level) did not show a significant direct relationship with product/service innovation performance (i.e. providing no support to *H1*), the results show that external RC is strongly related to the other RC subcomponents. Hence, *H2a*, *H2b* and *H2c* are supported. Customer-related external RC explains 39.7% of the variance for internal RC (department level), 36.3% for internal RC (inter-department level) and 31.3% for external RC (other external actors).

Additionally, marketing-specific internal RC (both at the department and inter-department levels) and marketing-specific external RC (other external actors) are positively and significantly related to product/service innovation performance. Thus, *H3*, *H4* and *H5* are supported. According to the obtained path coefficients, external RC (other external actors) is the RC subcomponent showing the largest direct relationship with product/service innovation performance (β = 0.256), followed by internal RC (inter-department level) (β = 0.220) and internal RC (department level) (β = 0.170). In terms of explanatory power, 32.8% of the variance is explained for the dependent variable (i.e. product/service innovation performance).

Because the indirect relationship between external RC (customer level) and product/service innovation performance through these subcomponents is statistically significant in all cases (p-values are well below 5%) and the direct relationship between external RC (customer level) and product/service innovation performance is irrelevant, full mediation applies. In other words, customer-related, marketing-specific external RC relates to product/service innovation performance through its link to the other types of marketing-specific RC.

Regarding total effects, it should be noted that external RC (customer level) is the RC subcomponent with the strongest degree of association with product/service innovation performance (0.406 vs 0.170 for internal RC at the department level, 0.220 for internal RC at the inter-department level and 0.256 for external RC regarding other external actors).

Finally, as far as moderation effects are concerned, Table 3 shows the results of the multigroup analysis.

Customer type moderates several of the hypothesized relationships (thus, *H6* is partly supported). For B2C companies, internal RC (department level) is the only subcomponent that directly and significantly relates to product/service innovation performance. For B2B firms, internal RC (inter-department level) and external RC (other external actors) both directly and significantly relate to the dependent variable. Moreover, the multigroup analyses reveal that the differences in the path coefficients regarding the relationships between internal RC (department level) and product/service innovation performance, on the one hand, and between external RC (other external actors) and product/service innovation performance, on the other hand, are statistically relevant. Furthermore, even though the direct relationship between external RC (customer level) and the other types of RC is statistically significant for all subcomponents and both groups of firms, the relationships between external RC (customer level) and internal RC (inter-department level) and between external RC (customer level) and external RC (other external actors) are much stronger in B2C companies. Finally, both the indirect and overall relationships between customer-related RC and product/service innovation performance are positive and significant for both firm groups. However, the total association between external RC (customer level) and product/service innovation performance is much stronger in B2C companies.

Regarding the explanatory power of the model, the amount of variance explained by product/service innovation performance is much higher in B2C firms (50.3%) than in B2B firms (29.3%). The same was observed for internal RC at the inter-department level (57.3% for B2C, 28.2% for B2B) and external RC regarding other external actors (40.2% for B2C, 26.2% for B2B).

6. Discussion

This study analyzed how marketing-specific RC affects product/service innovation performance. The literature has largely overlooked how different types of knowledge generated through and embedded in the relationships involving marketers inside and outside organizational boundaries complement each other and help develop new products and/or services. As a result, managers lack guidance about how to combine and prioritize these relational sources of knowledge. The current study confirms the relevance of knowledge embedded in external and internal relationships while demonstrating that each category of marketing-specific RC (or knowledge integration space; Grant, 1996) has a different role in enhancing product/service innovation performance.

First, marketing-specific external RC (other external actors) shows the strongest direct relationship with product/service innovation performance. In line with Jiménez-Jiménez and Cegarra-Navarro (2007) and Martín-de Castro (2015), bringing new products or services to the market involves participating of several actors outside the company, such as technological partners that collaborate in the innovation process, suppliers and/or complementors that provide the inputs needed to produce the new product or service or to complement and/or enrich the offering. Additionally, distributors must make the final product and/or service accessible to users. Therefore, it is important to integrate knowledge from external actors to guarantee that the new product/service reaches the market successfully.

Second, marketing-specific internal RC (interdepartmental level) shows the second largest direct relationship with product/service innovation performance. This confirms the general argument that cross-functional interactions encourage the sharing and creation of specialized knowledge resources relevant to the success of product/service innovation (Smith *et al.*, 2014; Tsai and Ghoshal, 1998). Collaboration with other departments (Bendoly *et al.*, 2012), such as R&D or manufacturing (Mostaghel *et al.*, 2019; Salojärvi *et al.*, 2015), allows the marketing department to create better products and services and, thus, a higher value for customers.

Third, marketing-specific internal RC (department level) shows the lowest (but still significant) direct relationship with product/service innovation performance. It is important for employees in the marketing department to socialize to exchange and combine knowledge (Allee, 2003; Maurer *et al.*,

Table 2 Structural model evaluation (full sample)

	Effects	SD	*t* statistics	*p*-values	5%	95%
Direct relationships regarding product/service innovation performance (R^2 = 32.8%)						
Size	−0.065	0.046	1.421	0.078	−0.139	0.014
Year of foundation	−0.037	0.046	0.810	0.209	−0.112	0.038
Industry	−0.010	0.050	0.206	0.418	−0.094	0.071
Technology intensity	−0.040	0.055	0.729	0.233	−0.133	0.049
Customer type	−0.030	0.054	0.564	0.286	−0.119	0.060
Internal RC (department level)	0.170	0.084	2.021	0.022	0.025	0.301
Internal RC (inter-department level)	0.220	0.089	2.483	0.007	0.066	0.360
External RC (customer-related)	0.022	0.075	0.289	0.386	−0.103	0.144
External RC (other external actors)	0.256	0.068	3.757	0.000	0.140	0.363
Direct relationships between external RC (customer-related) and other types of RC	–	–	–	–	–	–
Direct relationship with internal RC (department level) (R^2 = 39.7%)	0.630	0.042	14.935	0.000	0.553	0.693
Direct relationship with internal RC (inter-department level) (R^2 = 36.3%)	0.606	0.047	12.935	0.000	0.517	0.674
Direct relationship with external RC (other external actors) (R^2 = 31.3%)	0.559	0.048	11.722	0.000	0.475	0.633
Indirect relationships between external RC (customer-related) and product/service innovation performance	–	–	–	–	–	–
Indirect relationship through internal RC (department level) (1)	0.107	0.054	1.979	0.024	0.016	0.194
Indirect relationship through internal RC (inter-department level) (2)	0.134	0.055	2.439	0.007	0.043	0.224
Indirect relationship through external RC (other external actors) (3)	0.143	0.039	3.654	0.000	0.079	0.208
Total indirect relationship (1 + 2+3)	0.384	0.056	6.903	0.000	0.296	0.477
Total degree of association between external RC (customer-related) and product/service innovation performance (Direct + Indirect)	0.406	0.056	7.298	0.000	0.304	0.488

Note: RC: relational capital

2011). This could improve the understanding of customers' needs and preferences, generate new insights about market and technological trends and produce improved marketing practices, leading to the development of better ideas for new products and/or services and ways to communicate about these offerings to the market.

Finally, we did not find support for the hypothesis that external RC (customer level) is directly related to product/service innovation performance. Rather, the knowledge generated through customer relationships is a key input for generating new knowledge in the other three marketing-specific RC categories, which fully mediate the relationship between marketing-specific external RC (customer level) and product/service innovation performance.

Regarding the moderating role of customer type, the results revealed that our model has much stronger explanatory power for B2C firms than B2B firms. This finding suggests that product/service innovation success is much more dependent on purely marketing-related decisions (e.g. decisions related to product/service distribution or accessibility, pricing or communication aspects) in B2C companies than B2B firms. This idea is reinforced by the fact that the total effects of marketing-specific external RC (customer level) and marketing-specific internal RC (department level), which are mostly related to marketers' core work, are significantly stronger in B2C firms than B2B companies. Indeed, internal RC (department level) is completely nonsignificant in B2B firms. This might be because of the fact that B2C firms have access to more sophisticated tools for

customer and market data analysis because of their much larger customer and consumer base (Kannan and Li, 2017), making their input much more relevant than for B2B firms.

The lower (but still significant) relevance of marketing-specific external RC (customer level) in B2B companies compared with B2C firms may reflect the fact that in the latter, only the marketing department tends to create relationships with customers, whereas in B2B firms, these relationships may be distributed across different departments. Because relationships may be handled by a variety of actors from different departments with different functions, the role of marketing-specific, customer-related RC in B2B companies becomes diluted (Kohtamäki and Partanen, 2016). Similarly, this RC category is less related to the development of marketing-specific internal RC (inter-department level) and marketing-specific external RC (other external actors).

Conversely, external RC (other external actors) shows a much stronger association with product/service innovation performance in B2B firms than B2C companies; in fact, its role in the latter case is completely nonsignificant. Because many B2B firms may be selling their products to end users through external distributors, sharing knowledge with distributors and engaging in subsequent knowledge integration may be much more relevant for B2B firms than B2C companies to guarantee the success and acceptance of new offerings. Moreover, competitors' and complementors' products and services tend to be less "visible" and accessible in B2B industries than B2C ones. Thus, interacting with competitors and complementors at fairs and similar events may be one of the best ways for marketers to understand the features of their offerings and identify opportunities for product/service improvement and/or differentiation.

Finally, although the difference is not statistically relevant, the role of marketing-specific internal RC (inter-department level) is slightly stronger in B2B firms than B2C companies (in which it is not statistically significant). This finding is consistent with the fact that in B2B firms, customer knowledge tends to be distributed between different departments, making the integration of such knowledge at the inter-department level more necessary.

7. Implications, limitations and future research

Currently, there is a lack of understanding about how the knowledge embedded in different types of internal and external relationships related to marketing functions contributes to product/service innovation performance. This makes it difficult for marketing managers to decide which types of socialization processes need to be reinforced. Hence, this study addressed how the knowledge generated through interaction with different actors both inside and outside a company complement each other and lead to successful product/service innovation. We examined four types of marketing-specific RC and found that each has an important and distinct role in this process. The results contribute to several streams of literature from both theoretical and practical viewpoints.

7.1 Theoretical implications

First, marketing plays a key role in translating customer demands into insights that can lead to product and service innovation (Bontis, 1998; Cui and Wu, 2016; Mahr *et al.*, 2014); however, there are few studies on the knowledge generated through different types of relationships involving the marketing department. Our results provide explicit evidence regarding this phenomenon, demonstrating how this integrative role might be structured through access to internal and external knowledge resources. The knowledge generated through customer interaction acts as a major input of the knowledge created by interacting with other internal and external actors, the latter of which is an essential antecedent of good product/service innovation performance. In other words, focusing on customer interaction is not enough; the marketing function must be *relationally embedded* in a network of ties to internal and external stakeholders. This helps clarify the strategic role and positioning of marketing (Danneels, 2007; Vorhies and Morgan, 2005) as part of a firm's overall product/service innovation activities. In addition, our study demonstrated that B2B and B2C companies differ in terms of how they can use RC in product and service innovation, highlighting that innovation initiatives depend on the type of customer the firm is serving. This is also an important opportunity for future research.

Second, our study contributes to the innovation literature by examining the benefits of diverse knowledge sources for innovation (Henttonen *et al.*, 2011; Laursen and Salter, 2006). In particular, our results support the integration and recombination arguments that highlight the benefits of combining diverse sources of knowledge for innovation (Grant, 1996; Kogut and Zander, 1992; Savino *et al.*, 2017), including cross-functional collaboration (Tsai and Hsu, 2014) and across organizational boundaries with external stakeholders (West and Bogers, 2014). We have shown how this integrative role can be adopted within a particular function of the firm (marketing and sales) that operates at the interface of external and internal stakeholders. The results call for more research on the recombinatory dynamics of knowledge accessed through different relational sources and on the specific capabilities of different firm departments and functions to combine and apply that knowledge.

Finally, our results have implications for the RC literature as part of the larger discourse on IC. We adopted a knowledge-based perspective on RC (Aramburu and Sáenz, 2011; Peñalba-Aguirrezabalaga *et al.*, 2020), demonstrating how the knowledge generated through and embedded in different types of relationships is an important part of a firm's IC. Interactions with different actors – not only customers – provides firms with access to valuable, complementary knowledge resources that contribute to firm-level innovation performance. With our empirical focus on marketing-specific RC, we respond to the calls for more contextuality when measuring the benefits of different types of IC (Kianto *et al.*, 2020).

7.2 Managerial implications

From a practical perspective, our results show that marketing personnel and departments benefit from active networking with both internal and external stakeholders. The classic notion that the "customer is king" is supported, as knowledge generated by the customer interaction plays a key role in the generation of new knowledge by interacting with other actors. Thus, both marketing and general managers should focus on fostering socialization not only with customers but also within the marketing department, with other departments within the company and with other external actors. However, it should be noted that the relationships that must be reinforced vary depending on whether the company is B2C or B2B and based on other contingency factors.

Table 3 Comparison between B2C and B2B firms

	β_{B2C}	β_{B2B}	Difference	*p*-values
Direct relationships regarding product/service innovation performance				
Size	†−0.101	−0.044	0.058	0.719
Year of foundation	−0.068	−0.086	0.018	0.428
Industry	†−0.122	0.022	0.144	0.914
Technology intensity	0.078	−0.091	0.169	0.073
Internal RC (department level)	***0.487	0.050	0.438	0.008
Internal RC (inter-department level)	0.127	*0.224	0.097	0.720
External RC (customer-related)	0.131	−0.035	0.167	0.176
External RC (other external actors)	0.022	***0.370	0.348	0.976
Direct relationship between external RC (customer level) and internal RC (department level)	***0.689	***0.608	0.081	0.149
Direct relationship between external RC (customer level) and internal RC (inter-department level)	***0.757	***0.531	0.226	0.002
Direct relationship between external RC (customer level) and external RC (other external actors)	***0.634	***0.512	0.122	0.094
Indirect relationships	$\beta_{1B2C} \cdot \beta_{2B2C}$	$\beta_{1B2B} \cdot \beta_{2B2B}$	*Difference*	*p-values*
Total indirect degree of association between external RC (costumer level) and product/service innovation performance	***0.446	***0.339	0.107	0.212
Total degree of association between external RC (customer-related) and product/service innovation performance	*Total* β_{B2C}	*Total* β_{B2B}	*Difference*	*p-values*
Direct relationship + Indirect relationships	***0.577	***0.303	0.274	0.011
Variance explained	R^2_{B2C}	R^2_{B2B}	*Difference*	*p-values*
Internal RC (department level)	47.5%	37.0%	0.105	0.150
Internal RC (inter-department level)	57.3%	28.2%	0.291	0.002
External RC (other external actors)	40.2%	26.2%	0.140	0.094
Product/service innovation performance	50.3%	29.3%	0.210	0.007

Note: RC: relational capital

By understanding that all these relational sources of knowledge matter, marketing departments should try adopting an explicit role as knowledge integrators within their firms. Holding inter-department knowledge sharing meetings is a best practice, but it might be even more beneficial to facilitate gatherings in which lead customers meet important internal constituents (e.g. from the R&D department). In these gatherings, marketers could serve as translators, disseminating customer insights to both internal and external stakeholders and thus enabling improved innovation processes in external partnerships and internal development.

7.3 Limitations and future research

This study has several limitations that may be addressed in future research. First, survey responses were collected only from Spanish firms. Future research could extend the analysis to other national contexts. Second, a key informant in each company reported the data collected through the structured cross-sectional survey. This allowed us to access firm-level perceptional data and test our hypotheses, but there may be limitations regarding the scope of the informants' knowledge and ability to draw causal inferences. Moreover, regarding the dependent variable, even if using a perceptual measure of performance *vis-à-vis* competitors is a good substitute for objective data, using multiple information sources would be preferable. Future studies could adopt different types of measurement approaches and combine them with various information sources to measure innovation and other types of performance over time. In this regard, it would be interesting to adopt a configurational approach and analyze how the different components making up marketing-specific RC may be combined in different, multiple and complex ways to produce product/service innovation performance. Finally, we noted some interesting

differences between B2C and B2B firms. Future research could go further in distinguishing the differences among these types of firms in terms of how they use internal and external RC.

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