A CRM SYSTEM BY ITSELF ISN'T ENOUGH! THE EFFECT OF MARKETING CAPABILITIES AND INNOVATION ORIENTATION ON CRM PERFORMANCE

UM SISTEMA CRM POR SI SÓ NÃO É SUFICIENTE! O EFEITO DAS CAPACIDADES DE MARKETING E DA ORIENTAÇÃO PARA A INOVAÇÃO NO DESEMPENHO DO CRM

UN SISTEMA CRM POR SÍ SOLO NO ES SUFICIENTE! EL EFECTO DE LAS CAPACIDADES DE MARKETING Y LA ORIENTACIÓN A LA INNOVACIÓN EN EL RENDIMIENTO DE CRM

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Abstract

Purpose: This research aims to advance the studies on the effect of Customer Relationship Management (CRM) systems and practices to capture and apply customer information on the perceived performance of customer relationship management and innovation-oriented culture. In addition, this paper aims to contribute to dynamic capability theory by studying the effect of dynamic capabilities through the lens of relationship marketing.

Methodology: We collected 268 responses from professionals in marketing and information technology and used Partial Least Square-Structural Equation Modeling (PLS-SEM) to test the hypotheses proposed in this research.

Originality: By measuring the mediating effect of marketing capabilities and innovation orientation on the impact that relational information has on CRM performance, one of the main contributions of this research is to show that by themselves, CRM systems and relational information cannot leverage CRM performance.

Findings: We offer new empirical evidence that highlights the need to integrate processes to capture, access, and use customer information with marketing strategies to attract new customers and increase loyalty and sales among existing ones. Our findings also show that organizations need to develop the marketing capabilities and innovation-oriented culture that will boost business intelligence and long-term, profitable relationships with customers.

Theoretical contributions: Our research contributes to the study of CRM practices and relational information processes as it highlights the value of marketing capabilities in achieving CRM performance. We also contribute to the emerging demand for studies on dynamic capabilities more focused on marketing.

Practical Implications: Deploying CRM systems without rearranging resources and building an environment where employees are encouraged to create new solutions and pursue customer satisfaction is unproductive. Insisting on quick, utopic solutions is the recipe for disillusionment. Achieving positive results in customer relationship management demands constant investments of time, training, finances, and structure.

Keywords

CRM system; Marketing Capabilities; Innovation Orientation; CRM Performance; Quantitative Research; Partial Least Square

Resumo

Objetivo: Esta pesquisa tem como objetivo avançar nos estudos sobre o efeito dos sistemas e práticas de Gestão de Relacionamento com o Cliente (CRM) na captura e aplicação de informações do cliente no desempenho percebido da gestão de relacionamento com o cliente e na cultura orientada para a inovação. Além disso, este artigo busca contribuir para a teoria das capacidades dinâmicas ao estudar o efeito das capacidades dinâmicas por meio da perspectiva do marketing de relacionamento.

Metodologia: Coletamos 268 respostas de profissionais de marketing e tecnologia da informação e utilizamos o Modelo de Equações Estruturais de Quadrados Mínimos Parciais (PLS-SEM) para testar as hipóteses propostas nesta pesquisa.

Originalidade: Ao medir o efeito mediador das capacidades de marketing e da orientação para a inovação no impacto que as informações relacionais têm no desempenho do CRM, uma das

principais contribuições desta pesquisa é demonstrar que, por si só, os sistemas de CRM e as informações relacionais não conseguem potencializar o desempenho do CRM.
Resultados: Oferecemos novas evidências empíricas que destacam a necessidade de integrar processos para capturar, acessar e usar informações do cliente com estratégias de marketing para atrair novos clientes e aumentar a fidelidade e as vendas entre os clientes existentes. Nossos resultados também mostram que as organizações precisam desenvolver as capacidades de marketing e a cultura orientada para a inovação que impulsionarão a inteligência de negócios e os relacionamentos lucrativos de longo prazo com os clientes.
Contribuições teóricas: Nossa pesquisa contribui para o estudo das práticas de CRM e dos processos de informação relacional, ao destacar o valor das capacidades de marketing para o sucesso do CRM. Também atendemos à crescente demanda por estudos sobre capacidades dinâmicas mais centrados no marketing.
Contribuições práticas: Implantar sistemas de CRM sem reorganizar recursos e criar um ambiente onde os funcionários sejam incentivados a criar novas soluções e buscar a satisfação do cliente é improdutivo. Insistir em soluções rápidas e utópicas leva à desilusão. Alcançar resultados positivos na gestão do relacionamento com o cliente exige investimentos constantes de tempo, treinamento, finanças e estrutura.

Palavras-chave: Sistema CRM; Capacidades de Marketing; Orientação para a Inovação; Desempenho do CRM; Pesquisa Quantitativa; Regressão de Quadrados Mínimos Parciais.

Resumen

Objetivo: Esta investigación tiene como objetivo avanzar en los estudios sobre el efecto de los sistemas y prácticas de Gestión de Relaciones con el Cliente (CRM) en la captura y aplicación de información del cliente en el desempeño percibido de la gestión de relaciones con el cliente y la cultura orientada a la innovación. Además, este artículo busca contribuir a la teoría de las capacidades dinámicas al estudiar el efecto de las capacidades dinámicas a través de la perspectiva del marketing de relaciones.
Metodología: Recopilamos 268 respuestas de profesionales de marketing y tecnología de la información y utilizamos el Modelo de Ecuaciones Estructurales de Mínimos Cuadrados Parciales (PLS-SEM) para probar las hipótesis propuestas en esta investigación.
Originalidad: Al medir el efecto mediador de las capacidades de marketing y la orientación a la innovación en el impacto que la información relacional tiene en el rendimiento del CRM, una de las principales contribuciones de esta investigación es demostrar que, por sí solos, los sistemas de CRM y la información relacional no pueden potenciar el rendimiento del CRM.
Resultados: Ofrecemos nuevas evidencias empíricas que destacan la necesidad de integrar procesos para capturar, acceder y utilizar información del cliente con estrategias de marketing para atraer a nuevos clientes y aumentar la lealtad y las ventas entre los clientes existentes. Nuestros hallazgos también muestran que las organizaciones deben desarrollar las capacidades de marketing y la cultura orientada a la innovación que impulsarán la inteligencia empresarial y las relaciones lucrativas a largo plazo con los clientes.
Contribuciones teóricas: Nuestra investigación contribuye al estudio de las prácticas de CRM y los procesos de información relacional, al destacar el valor de las capacidades de marketing

para el éxito del CRM. También atendemos a la creciente demanda de estudios sobre capacidades dinámicas más centrados en el marketing.
Contribuciones prácticas: Implantar sistemas de CRM sin reorganizar recursos y crear un ambiente donde los empleados sean incentivados a crear nuevas soluciones y buscar la satisfacción del cliente es improductivo. Insistir en soluciones rápidas y utópicas conduce a la desilusión. Alcanzar resultados positivos en la gestión de relaciones con el cliente requiere inversiones constantes de tiempo, capacitación, finanzas y estructura.

Palabras clave: Sistema CRM; Capacidades de Marketing; Orientación a la Innovación; Desempeño del CRM; Investigación Cuantitativa; Regresión de Mínimos Cuadrados Parciales.

1. INTRODUCTION

It is known that in dynamic and highly competitive markets, an organization should be an "active actor", capable of adapting to environment changes "at least to some extent, mainly within the limits of its resources and capabilities" (Makkonen et al., 2014, p. 2707). Sensing and seizing opportunities as well as taking initiatives to avoid potential threats is imperative (Teece, 2007).

In this scenario, the adoption of a CRM system can be a strategic tool, allowing organizations to anticipate customer demands and market tendencies, customize products/services, as well as developing individualized marketing strategies (Pedron & Saccol, 2009; Rajola, 2013; Verrill, 2013; Meena & Sahu, 2021). When well-integrated to marketing strategy, CRM can provide accurate customer information to expand relationships with customer base and increase profitability (Jayachandran et al., 2005).

Nevertheless, many organizations have fallen into the trap of easy, instantaneous solutions. After the boom in the adoption of CRM solutions, at the beginning of the 2000s, disillusionment surrounded executives and professionals regarding the actual impact of CRM systems on organizations' results (Abratiguin, 2020; Hensmans, 2021). In fact, many have complained that CRM solutions require high investments with no guarantee of returns and, on top of that, many organizations have had cases of failure after adoption (Kotler, 2003; Mollaee et al., 2002). Unfortunately, "too many companies see technology as a silver bullet that will help them overcome their bad habits" (Kotler, 2003, p. 35).

For organizations to make the most of a CRM system's potential, they need to reorganize their processes and culture orientation so that these are indeed customer-focused. Besides this, it is fundamental to integrate all information provided by CRM systems with all aspects of

present the research methodology, after which we report our data analysis and discuss research findings. In the last section, we present our final considerations and research implications.

2. THEORETICAL BACKGROUND

Relational Information Processes

As the complexity of market demands grew and new technologies appeared, CRM emerged as a technological response to the demands of building profitable, long-term relationships with customers (Abratiguin, 2020; Hensmans, 2021; Payne, 2005). The CRM system emerged as the definitive solution for achieving competitive advantage and improving customer knowledge and service quality (Pedron & Saccol, 2009; Reinartz et al., 2004).

Nevertheless, after the peak of idealization and overestimation of results following CRM technology implementation in organizations, practitioners and researchers have claimed that, despite all efforts and expectations, organizations are unable to make the most of CRM systems use to obtain valuable customer knowledge (Khodakarami & Chan, 2014). This happens because many vendors sell the idea that CRM products can solve customer-related problems automatically, without mentioning that CRM solutions cannot be effective without a customer-oriented, and organization-wide, strategy (Rigby et al., 2002).

In this scenario, relational information processes are fundamental to CRM strategy as they involve capturing, accessing, integrating and using customer information to improve marketing communication, customer knowledge, and CRM performance (Jayachandran et al., 2005).

Marketing capabilities

Dynamic capabilities can be understood as an extension of the resource-based view (RBV) of strategic management (Eisenhardt & Martin, 2000). This is because the perspective of DCs emerged to explain how organizations are able to survive and sustain leadership in unstable environments by rearranging competences, assets and abilities, which was not covered by the RBV perspective (Teece et al., 1997). Founded on effective knowledge management, dynamic capabilities enable organizations to sense and seize business opportunities in order to build competitive advantage, anticipate market trends and offer innovative and new products/services to fulfill customer demands (Teece, 2007).

Similarly, as researchers point to the critical role of dynamic capabilities in marketing-related aspects of organizations, many studies propose the need for the expansion of the dynamic capability view under the umbrella of marketing relationship (Kouropalatis et al., 2019; Pedron et al., 2018). In this sense, marketing capabilities involve adaptive capabilities focused on marketing mix (4P), market learning, CRM, brand management and marketing communication (Akgün & Polat, 2022).

Innovation orientation

The dynamic capability view emphasizes the importance of innovation culture for organizations to be able to use their resource base and capture knowledge to enhance their expertise and seize market opportunities (Hult et al., 2004; Ling-yee, 2011; Teece, 2007).

Innovation orientation implies being open to new knowledge and new ways of applying existing resources to create and improve products/services and processes. In fact, innovation orientation is related to "that portion of a firm's culture that promotes and supports novel ideas, experimentation, and openness to new ideas." (Keskin, 2006).

Therefore, innovation orientation influences the development of marketing capabilities, as organizations are open to using new technologies, knowledge and processes to acquire competitive advantage and meet market demands (Akgün & Polat, 2022).

CRM performance

CRM performance refers to all activities related to customer relationship management, such as activities to acquire and identify customers in which organizations use their CRM program and customer knowledge to target those customers who are more likely to become theirs and those who are more profitable; activities to attract customers in which organizations direct their marketing efforts towards acquiring customers from their target segments; activities to retain customers that involve monitoring customer satisfaction, one-to-one marketing, loyalty programs and complaints management; and finally, activities to develop relationships with customers, which implies expanding transaction value and intensity, and customer profitability by stimulating repeated purchases by customers and up/cross selling (Ling-yee, 2011).

2.1 Hypotheses formulation

One of the objectives of using a CRM strategy is to capture and apply customer information to anticipate market demands and seize opportunities (Zablah et al., 2004). The effective usage of this cumulative customer information within all levels allows organization members to take better decisions on how to build improved relationships with customers as well as transforming this knowledge into innovative solutions, products and services that will contribute to maintaining brand differentiation, customer fidelity and competitive advantage (Jayachandran et al., 2005; Zablah et al., 2004).

We thus propose the following:

H1: *Relational information processes positively impact innovation orientation.*

As organizations implement customer information processes, they capture useful information on customer consumer patterns and perceptions of products/services/brand (Pedron et al., 2016) which can definitely be used to manage relationships with regard to profitable and long-term relations with valuable customers, as well as promptly and efficiently responding to market changes (Akgün & Polat, 2022). Not only that, but, as CRM systems can be wholly integrated into social media, organizations can use information on customer opinions to adjust their distribution channels and marketing communication (Malthouse et al., 2013, Azzari & Pelissari, 2018).

Based on these arguments, we propose the following hypothesis:

H2: *Relational information processes positively impact CRM performance*

The role of customer knowledge in a firm`s ability to reconfigure resources and competencies to achieve new forms of obtaining sustainable competitive advantage is undeniable (Jayachandran et al., 2005). The better organizations capture, integrate and apply customer information by integrating CRM systems and external data sources, such as social media, the abler they are to add value to their products/services, to monitor and anticipate changes in consumer demands/needs, and consequently, to respond efficiently to them (Teece et al., 1997).

Therefore, we propose that:

H3: *Relational information processes positively impact marketing capabilities.*

It is beyond doubt that the mere implementation of CRM systems and customer information processes does not guarantee the effectiveness of an organization`s marketing

capability (Boulding et al., 2005). To master this capability, a customer and market-oriented culture is needed (Ngo & O´Cass, 2009). In fact, even though well-structured processes are fundamental organizations often overemphasize the formalization of client procedures and governance compliance which develop into rigid, slow decision-making processes (Reinartz et al., 2004). For this reason, innovation orientation is "the glue that combines, develops, and transforms the resources to create value offering for customers" (Ngo & O'Cass, 2009, p. 49).

In that case, we propose that:

H4: *Innovation orientation positively impacts marketing capabilities.*

And

H5: *Innovation orientation positively impacts CRM performance.*

In turn, organizations that constantly improve their market learning, marketing mix (4P) and their relationships with customers are more prone to maintain customer loyalty and satisfaction, retain valuable customers despite competitor' advances, and have more efficient distribution channels, as well as lowering customer service costs (Kotler, 2003; Quach et al., 2020; Rasouli, Shirazian & Rasuli, 2021).

Therefore, we hypothesize that:

H6: *Marketing capabilities positively impact CRM performance.*

To be able to seize the full potential of advances in internal information systems (IS) and technology, organizations should be open and willing to utilize them to capture and transform customer knowledge into new market insights, better work practices, and new products/services that will add true value to customers and other stakeholders (Ngo & O'Cass, 2009). Without innovation orientation, organizations may invest in IS, but will be unable to transform its benefits into competitive advantage (Hult et al., 2004).

Accordingly, we propose that:

H7a: *Innovation orientation strengthens the impact of relational information processes on marketing capabilities.*

Likewise, as we consider the imperative need for organizations to continuously improve marketing strategy to minimize competitors' advances towards their customer base as well as attracting potential and profitable new customers in a competitive and turbulent environment

(Teece, 2007), it is appropriate to infer that organizations should be open to new ideas and/or new forms of applying already known insights into their target segment (Ngo & O'Cass, 2009).

Therefore, we propose that:

H7b: *Innovation orientation strengthens the impact of relational information processes on CRM performance.*

Finally, as we embrace the dynamic view of marketing capabilities, we admit that these enable organizations to learn, filter and shape opportunities by identifying new market segments and new tendencies in customer demands (Teece, 2007). In fact, the dynamic capability view emphasizes the need for organizational capabilities that enable organizations to respond to and even mold customer demands by creating new products and services (Prahalad & Hamel, 1990).

Therefore, we propose that:

H7c: *Marketing capabilities strengthen the impact of relational information processes on CRM performance.*

3. METHODOLOGY

In order to analyze the relationship between the use of the CRM system, innovation orientation, marketing capabilities and CRM performance, we validated a research model. To do so, we developed measurements for the research constructs in three phases, as proposed by Slavec and Drnovesek (2012).

In the first phase, we verified the theoretical importance and existence of the constructs by conducting a thorough literature review, which included a bibliometric analysis of CRM (Araújo, Pedron, & Picoto, 2018) and a systematic review of the existing scales in DCs (Araújo, Pedron, & Bitencourt, 2018). With this theoretical foundation, we developed a conceptual model that was presented to five marketing specialists, who provided perceptive insights into the scope of the constructs and the relationships between them. Based on their insights, the model was adjusted as illustrated in Figure 1.

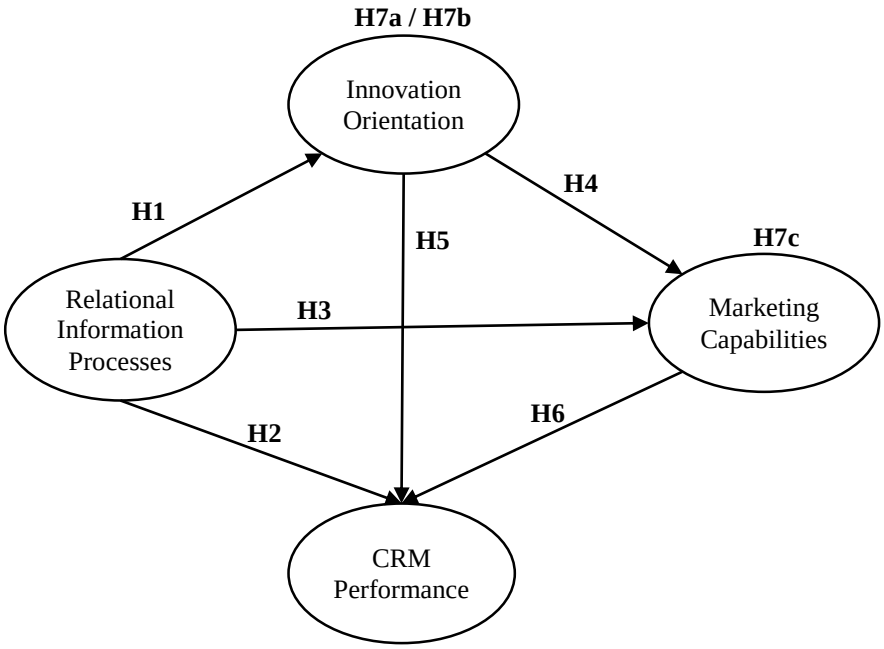

Figure 1 - *Conceptual model*

Afterwards, we selected the measures for each construct.

In the second phase, initially we had a native-speaker English translator, also fluent in Portuguese to do the translation and back-translation of the instrument (Beaton et al., 2000). Then, we did an online survey with the cloud-based tool Survey Monkey, using a 7-point Likert-scale format ranging from 7 (strongly agree) to 1 (strongly disagree). To assess the reliability of the instrument, we conducted a pilot study, in which we received feedback from 78 respondents belonging to the target groups – professionals from the sales, marketing and IT areas.

After refining the instrument, we finally collected responses. It is worth mentioning that the items were measured by asking respondents: "Considering the company you work for, or the company you have worked for in the last 3 years, give your level of agreement with the statements below. You can mark from 7 (strongly disagree) to 1 (strongly disagree)."

We sent the online survey to professionals from the target group, via the social networks WhatsApp, Facebook and LinkedIn. Responses reporting absence or unawareness of the implementation of CRM systems, along with those that were incomplete, were discarded. Altogether, we collected 268 valid responses.

At the last stage, we performed the statistical analysis of the model by assessing the dimensionality and reliability of the measurement (Hair et al., 2014). We then performed an exploratory factor analysis (EFA), using the IBM software package SPSS, in which we identified the factors derived from the loadings of the variables. Next, we performed a confirmatory factor analysis (CFA) using the software SmartPLS 4 to verify how well the factors and variables defined in the EFA related together, and also assessed the convergent and discriminant validity of the measures (Hair et al., 2014; Ringle et al., 2010).

4. RESULTS

4.1 Demographic Analysis of Respondents

The majority of respondents are male (76%) and are above 30 years old (80%). Regarding education levels, 30% are graduates and 52% are at post-graduate level. The most mentioned CRM software were SAP (29%), Microsoft Dynamics 365 (15%) and Salesforce (10%). Only 14% responded that their organizations implemented their own self-developed CRM solutions. The majority of participants hold leadership/specialist positions – presidents (2%), consultants (38%), managers (23%), directors (10%), team leaders/supervisors (14%). As for work fields, 54% work in IT, 13% in sales and 14% in marketing. The remainder (19%) involves other areas such as project management, finances, supply chain.

4.2 Dimensionality assessment – EFA

In the EFA, we checked the communality loadings below 0.5, the Barlett's Test of Sphericity, the Kaiser-Meyer-Olkin Test of Sampling Adequacy (KMO) and assessed the relationship between the factors (components) by using the orthogonal VARIMAX rotation method, disregarding factorial loadings below 0.4.

After all, the cumulative percentage of variance in the statistical analysis was 66.164%. The results of the Barlett's Test of Sphericity ($p<0.001$) and of the KMO index (= 0,960). We also checked the correlation of the items within the factors using Cronbach's Alpha and noted that all were above 0.7 which indicated a reliable internal consistency (Hair et al., 2009). Table 1 presents factor loadings and measures scores of the model's constructs.

Table 1
Factor loadings and measure scores

	Components					
	1	**2**	**3**	**4**	**5**	**6**
	Cronbach's Alpha = 0.968	**Cronbach's Alpha = 0.907**	**Cronbach's Alpha = 0.891**	**Cronbach's Alpha = 0.845**	**Cronbach's Alpha = 0.871**	**Cronbach's Alpha = 0.895**
DC15	0.811					
DC16	0.743					
IC10	0.725					
IC3	0.714					
DC14	0.701					
IC4	0.700					
DC17	0.686					
DC4	0.684					
DC13	0.675					
IC1	0.637					
DC18	0.633					
DC11	0.631					
DC10	0.614					
DC1	0.594					
IC13	0.578					
DC7	0.557					
IC8	0.532					
IC7	0.530					
DC2	0.526					
DC5	0.516					
IC12	0.505					
IC6		0.760				
IC11		0.678				
IC2		0.675				
IC9		0.661				
DC6		0.618				
IC5		0.550				
DC12		0.538				
CRM11			0.773			
CRM12			0.762			
CRM13			0.725			
CRM10			0.676			
CRM9			0.636			
CRM17			0.631			

CRM7			0.550			

	Components					
	1	**2**	**3**	**4**	**5**	**6**
	Cronbach's Alpha = 0.968	**Cronbach's Alpha = 0.907**	**Cronbach's Alpha = 0.891**	**Cronbach's Alpha = 0.845**	**Cronbach's Alpha = 0.871**	**Cronbach's Alpha = 0.895**
OP10				0.745		
OP7				0.664		
OP9				0.657		
OP2				0.651		
OP8				0.589		
OP3				0.551		
CRM15					0.753	
CRM16					0.736	
CRM14					0.679	
CRM1						0.742
CRM2						0.732
CRM4						0.512

It is important to note that, as we assessed the dimensionality of the instrument's and the loadings of its measures, we noticed that items regarding customer information processes were grouped into three components. Therefore, we converted it into a second-order construct with three other constructs: information **use**, **relationship-oriented initiatives** and **information integration access**.

After all these adjustments to assess the dimensionality and reliability of the instrument, from 61 measures we excluded 14. Table 2 presents the measure items as used in the survey as well as the remarks regarding the excluded ones.

Table 2

Measurement items, their references and reason for exclusions (when applicable)

Construct	Code	Item	Reason for exclusion	Reference
Relational Information Processes	CRM01	Our organization gives high priority to customer relationships.		Jayachandran et al. (2005)
	CRM02	Our organization encourages employees to focus on customer relationships.		
	CRM03	Our organization gives employees bonus and awards based on customer satisfaction rates.	Loading in factor below 0.5	
	CRM04	In our organization, business processes are designed in order to improve our relationship with customers.		

Construct	Code	Item	Reason for exclusion	Reference
	CRM05	Our organization is structured based on customer profiles, segments and demands, rather than on products or organizational functions.	Communality below 0.5	
	CRM06	Our customers have many channels to contact our organization (social media, customer service, e-mails, telephone, call center, etc.).	Loading in factor below 0.5	
	CRM07	Our organization regularly collects information on customers.		
	CRM08	Our organization collects customer information from external sources such as market research agencies, syndicated data sources and consultants.	Communality below 0.5	
	CRM09	In our organization, customer information is 100% accurate.		
	CRM10	In our organization, customer information is updated periodically.		
	CRM11	Our organization integrates the customer information collected by its different departments (e.g. marketing, sales, credit).		
	CRM12	In our organization, customer information collected internally is completely integrated with customer information collected from external sources.		
	CRM13	Our organization, customer information collected internally is integrated with information collected from our different communication channels (social media, e-mails, fax, customer service, call center)		
	CRM14	Our organization uses customer information to develop customer profiles.		
	CRM15	Our organization uses customer information to segment markets.		
	CRM16	Our organization uses customer information to customize our offers.		
	CRM17	Whenever we need customer information to execute our tasks, we can visualize it in simple and fast manner.		
	CRM18	Our organization periodically measures customer satisfaction.	Loading in factor below 0.5	Herrmann et al. (2007)
Marketing Capabilities	DC01	Our organization systematically searches for new business ideas.		Makkonen et al. (2014)
	DC02	Our organization systematically brings together creative and knowledgeable people in order to search for new opportunities in the market.		
	DC03	Our organization systematically consults with external people that can assist on searching for new business opportunities.	Communality below 0.5	
Marketing Capabilities	DC04	Our organization systematically recombines resources (people, processes, machinery, equipment) to create of new business opportunities.		Flatten et al. (2011)
	DC05	Our organization constantly encourages employees to improve their competences through trainings, knowledge transfer, conferences, etc.		

Construct	Code	Item	Reason for exclusion	Reference
	DC06	In our organization, employees are strongly encouraged to learn from their positive and negative experiences.		
	DC07	Our organization has implemented routines that enable employees to create of ideas for new products/services.		
	DC08	Our organization encourages exchange of personnel within departments (job rotation) to attend to new market demands.	Single item in factor	
	DC09	Our organizations' competitiveness depends greatly on the constant change of processes and resources.	Single item in factor	Verreynne et al. (2016)
	DC10	Our organization systematically recombines processes and resources to respond to market changes.		Wu et al. (2010)
	DC11	Our organization has developed routines that enable employees to participate in generating ideas for new production processes or organizational procedures.		Makkonen et al. (2014)
	DC12	Our organization has developed routines that enable employees to participate in generating ideas for changing production processes or organizational procedures.		Danneels (2016)
	DC13	Our organization works along with R&D institutions such as universities and technological institutes in order to create new business opportunities.		Villar et al. (2014)
	DC14	Our organization systematically improves existing products/services.		Verreynne et al. (2016)
	DC17	Our organization systematically evaluated customer needs to anticipate market trends.		Janssen et al. (2015)
	DC18	Our organization constantly implements new initiatives such as new distribution channels, new sales forces, new marketing campaigns and new pricing strategies.		Danneels (2016)
Innovation Orientation	IC01	Our organization provides customers with unique and superior products/services.		Hogan et al. (2011)
	IC02	In our organization, we are encouraged to innovate in the way we solve customer problems.		
	IC03	Our organization always offers innovative solutions to customers.		
	IC04	To sustain competitiveness, our organization systematically implements innovative initiatives.		
	IC05	In our organization, executives are always willing to take risks to seize and explore business opportunities.		Zhang et al. (2015)
	IC06	Our organization encourages employees to implement new and better ways to work.		Schweitzer (2014)
	IC07	In our organization, customers are co-creators of new solutions.		Schlosser & McNaughton (2009)

Construct	Code	Item	Reason for exclusion	Reference
	IC08	In our organization, executives work actively on the implementation of innovative initiatives.		Santos-Vijande et al. (2013)
Innovation Orientation	IC09	Our organization does not penalize those employees that implement new ideas that ultimately do not succeed in the market.		Hakimi et al. (2014)
	IC10	Innovation is a fundamental part of our organization's culture.		
	IC11	Our organization always encourages employees to use the knowledge gained from previous experiences with customers.		
	IC12	Our organizations constantly draw upon customers' feedbacks to launch new products/services.		
	IC13	To seek for innovative ideas, every now and then, our organization meets with customers to talk about their interests, problems and needs (e.g. focal groups, opinion research).		Belkahla & Triki (2011)
	IC14	In our organization, information is quickly and accurately communicated throughout all business units and departments	Loading in factor below 0.5	Flatten et al. (2011)
	IC15	Our organization keeps an active after-sales service to collect feedbacks from customers.	Loading in factor below 0.5	Herrmann et al. (2007)
CRM Performance	OP01	Our organization has reduced the cost of transacting with customers over.	Communality below 0.5	Coltman et al. (2011)
	OP02	Our organization has high level of repeated business with profitable customers.		
	OP03	Our organization increased the rate of new customer.		Ling-yee (2011)
	OP04	Our organization has high levels of customer satisfaction.	Loading in factor below 0.5	
	OP05	Our organization has very efficient marketing promotions.	Loading in factor below 0.5	
	OP06	Our organization has low-cost customer services.	Single item in factor	
	OP07	Our organization can keep old customers.		
	OP08	Our organization's cross-selling strategy is very effective.		
	OP09	Our organization has a high-level customer loyalty.		
	OP10	Our organization has a high share of profitable customers.		

4.3 Reliability and construct validity assessment - CFA

Afterwards, in the CFA, we assessed the convergent validity of the model by analyzing the Average Variance Extracted (AVE). The AVE of all constructs was greater than 0.50: CRM

Performance (0.567), Relational Information Process (0.542), Information Integration-Access (0.609), Information Use (0.795), Innovation Orientation (0.696), Marketing Capabilities (0.626) and Relationship-oriented Initiatives (0.827).

To assess the internal consistency reliability, the Cronbach's Alpha and Composite Reliability were calculated and verified. The composite reliability of all constructs was greater than 0.70: CRM Performance (0.864), Relational Information Processes (0.931), Information Integration-Access (0.899), Information Use (0.872), Innovation Orientation (0.904), Marketing Capabilities (0.966) and Relationship-oriented Initiatives (0.895). Similarly, the values of Cronbach's Alpha were above 0.70: CRM Performance (0.845), Relational Information Processes (0.929), Information Integration-Access (0.891), Information Use (0.871), Innovation Orientation (0.888), Marketing Capabilities (0.964) and Relationship-oriented Initiatives (0.895).

We then evaluated the coefficient of determination (R^2) of the model's endogenous variables. The R^2 value of CRM Performance was 0.499, the R^2 of Innovation Orientation was 0.367 and the R^2 of Marketing Capabilities was 0.692. In social sciences, an R^2 value of at least 26% indicates that the model has a high effect on the variable (Ringle et al., 2014).

The discriminant validity was validated by analyzing cross loadings. Table 3 presents the cross loadings of the items.

Table 3

Cross loadings of the indicators of the model

Item	CRM Performance	Relational Information Processes	Information Integration-Access	Information Use	Innovation Orientation	Marketing Capabilities	Relationship-oriented Initiatives
CRM1	0,494	0,752	0,589	0,496	0,528	0,595	0,929
CRM1	0,494	0,752	0,589	0,496	0,528	0,595	0,929
CRM10	0,415	0,746	0,789	0,576	0,433	0,535	0,485
CRM10	0,415	0,746	0,789	0,576	0,433	0,535	0,485
CRM11	0,385	0,780	0,840	0,548	0,423	0,449	0,538
CRM11	0,385	0,780	0,840	0,548	0,423	0,449	0,538
CRM12	0,388	0,796	0,857	0,599	0,428	0,526	0,514
CRM12	0,388	0,796	0,857	0,599	0,428	0,526	0,514
CRM13	0,456	0,831	0,867	0,650	0,499	0,539	0,560
CRM13	0,456	0,831	0,867	0,650	0,499	0,539	0,560

Item	CRM Performance	Relational Information Processes	Information Integration-Access	Information Use	Innovation Orientation	Marketing Capabilities	Relationship-oriented Initiatives
CRM14	0,418	0,779	0,681	0,894	0,428	0,449	0,501
CRM14	0,418	0,779	0,681	0,894	0,428	0,449	0,501
CRM15	0,457	0,732	0,602	0,910	0,336	0,440	0,476
CRM15	0,457	0,732	0,602	0,910	0,336	0,440	0,476
CRM16	0,406	0,716	0,595	0,870	0,353	0,429	0,470
CRM16	0,406	0,716	0,595	0,870	0,353	0,429	0,470
CRM17	0,418	0,625	0,684	0,422	0,421	0,408	0,419
CRM17	0,418	0,625	0,684	0,422	0,421	0,408	0,419
CRM2	0,504	0,720	0,545	0,474	0,579	0,641	0,924
CRM2	0,504	0,720	0,545	0,474	0,579	0,641	0,924
CRM4	0,512	0,731	0,576	0,507	0,588	0,660	0,873
CRM4	0,512	0,731	0,576	0,507	0,588	0,660	0,873
CRM7	0,320	0,651	0,683	0,559	0,292	0,307	0,396
CRM7	0,320	0,651	0,683	0,559	0,292	0,307	0,396
CRM9	0,378	0,681	0,718	0,469	0,421	0,476	0,498
CRM9	0,378	0,681	0,718	0,469	0,421	0,476	0,498
DC1	0,538	0,530	0,477	0,402	0,530	0,714	0,499
DC10	0,556	0,586	0,538	0,423	0,640	0,788	0,551
DC11	0,537	0,566	0,489	0,435	0,695	0,823	0,561
DC13	0,336	0,412	0,361	0,288	0,430	0,625	0,424
DC14	0,626	0,531	0,454	0,412	0,621	0,821	0,533
DC15	0,516	0,491	0,434	0,347	0,576	0,820	0,497
DC16	0,537	0,542	0,455	0,386	0,640	0,851	0,588
DC17	0,571	0,589	0,496	0,423	0,656	0,839	0,633
DC18	0,567	0,550	0,486	0,428	0,526	0,744	0,523
DC4	0,540	0,528	0,472	0,397	0,564	0,773	0,502
DC6	0,485	0,517	0,439	0,356	0,840	0,703	0,562
DC7	0,532	0,586	0,524	0,405	0,704	0,786	0,591
IC1	0,599	0,502	0,420	0,358	0,556	0,757	0,547
IC10	0,520	0,520	0,439	0,364	0,717	0,848	0,565
IC11	0,487	0,522	0,453	0,353	0,871	0,691	0,556
IC12	0,571	0,607	0,519	0,487	0,679	0,777	0,595
IC13	0,555	0,520	0,478	0,363	0,595	0,758	0,498
IC2	0,531	0,578	0,523	0,389	0,893	0,741	0,581
IC3	0,598	0,549	0,461	0,368	0,681	0,864	0,616
IC4	0,574	0,568	0,502	0,383	0,726	0,863	0,592
IC6	0,520	0,523	0,472	0,365	0,879	0,649	0,519

Item	CRM Performance	Relational Information Processes	Information Integration-Access	Information Use	Innovation Orientation	Marketing Capabilities	Relationship-oriented Initiatives
IC7	0,473	0,525	0,481	0,326	0,658	0,751	0,542
IC9	0,361	0,359	0,323	0,273	0,666	0,486	0,335
OP10	0,798	0,463	0,436	0,387	0,386	0,493	0,369
OP2	0,615	0,330	0,311	0,263	0,311	0,358	0,273
OP3	0,738	0,430	0,349	0,345	0,461	0,561	0,453
OP7	0,830	0,480	0,389	0,382	0,513	0,611	0,509
OP8	0,671	0,408	0,341	0,351	0,373	0,397	0,394
OP9	0,839	0,506	0,446	0,419	0,513	0,621	0,462

The next step was to carry out bootstrapping to assess the path coefficients, calculate the direct and indirect effects of the variables and analyze the three mediation effects proposed in the model by using the Sobel test (Sobel, 1982).

Figure 2 illustrates the path model that resulted from the Partial Least Square – Structural Equation Modeling (PLS-SEM) conducted for the CFA.

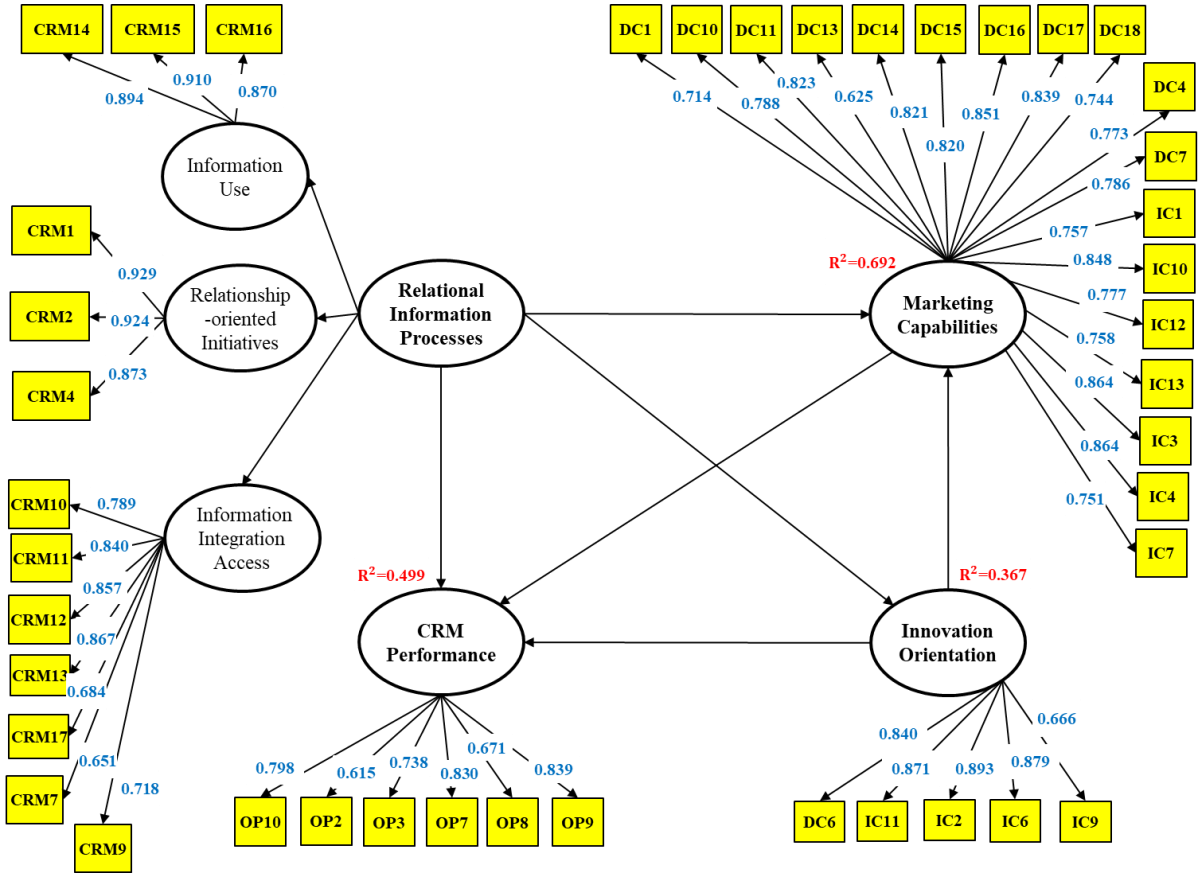

Figure 2 - *Path model*

As shown above, relational information processes are positively related to innovation orientation, CRM performance and marketing capabilities which support H1, H2 and H3. Besides this, we also find that innovation orientation is positively related to marketing capabilities and CRM performance, supporting H4 and H5. As for marketing capabilities, findings show that they are positively related to CRM performance which supports H6.

Regarding the results of mediation tests, the mediation effect of Innovation Orientation on the relationship between Relational Information Processes and Marketing Capabilities is significant, 9.412 ($p<=0.05$) and the indirect effect between the independent and the dependent variable is 0.361, supporting hypothesis H7a. Likewise, the mediation effect of Marketing Capabilities on Relational Information Processes and CRM Performance is significant (3.581) and the indirect effect between is 0.164, which supports H7c. On the other hand, the mediation

effect of Innovation Orientation on the relationship between Relational Information Processes and CRM Performance is 0.457 - and the indirect effect of Relational Information Processes is 0.029 - what demonstrates that this effect is not significant, invalidating hypothesis H7b.

5. DISCUSSION

As mentioned, this research aimed to answer the following research question: what is the effect of marketing capabilities and innovation orientation on the relationship between relational information processes and CRM performance?

Our findings show that relational information processes positively impact innovation orientation. In fact, results show that relational information explains 36.7% (R^2 = 0.367) of innovation orientation. This confirms previous studies which argue that CRM practices can be a great source of valuable knowledge which can be used to create new products/services and offer innovative solutions to customers (Day, 1994; Pedron et al., 2018).

In the same fashion, results demonstrate that relational information capability positively impacts marketing capabilities and CRM performance. Furthermore, results show that relational information processes explain 69.2% (R^2 = 0.692) of marketing capabilities and 49.9% (R^2 = 0.499) of CRM performance, which corroborates research that denotes the relation between CRM practices and the development of dynamic capabilities (Desai et al., 2007; Pedron et al., 2018), as well as the relation between customer knowledge and the betterment of CRM strategy (Jayachandran et al., 2005). These findings show that an organization`s ability to capture and integrate customer information improves its ability to build positive customer relationships and create innovative solutions to customer demands.

It is worth noting that our findings demonstrate the relation between innovation orientation, marketing capabilities and CRM, which emphasizes that deploying a CRM system to collect customer information is not sufficient to ensure that this collected knowledge is enough to enhance CRM performance (Jayachandran et al., 2005; Weerawardena et al., 2006). In fact, one of the respondents shared a very direct insight on that matter:

SAP CRM, for example, has all the functionalities at the system level discussed here in this questionnaire, and much more, but they are not generally used by 50% of customers. Usually, the [CRM] system offers much more than the companies actually explore.

Incidentally, our findings deliver advances on those of Jayachandran et al. (2005) as they highlight the value of marketing capabilities on achieving CRM performance by implementing relational information processes, as proposed in other studies that analyze the role of dynamic capabilities in marketing relations (Akgün & Polat, 2022; Pedron et al., 2018).

Finally, as the results indicate that innovation orientation strengthens the impact of relational information processes on marketing capabilities, they highlight the relevance of creating an organizational culture that encourages employees to innovate. Moreover, creating an innovative environment implies applying collective knowledge to respond to market demands and improve organizational performance (Camisón & Villar-López, 2011). Besides that, as organizations engage in continuing learning (from customers, providers, etc.), organizations can transform this knowledge into new products, better processes and customer value (Lawson & Samson, 2001). The findings of our research are in accordance with the idea of sustainable management of customer relationships (SCRM), as evidenced by Ferrer-Estévez and Chalmeta (2023). This study provides support for the concept that CRM encompasses not just interactions with customers, but also the long-lasting economic sustainability of the business.

6. CONCLUSIONS

This paper presented a quantitative study on the relationship between relational information studies, marketing capabilities, innovation orientation and CRM performance. Our goal was to advance the studies on the effect of CRM systems and practices to capture and apply customer information on the perceived performance of customer relationship management and innovation-oriented culture. In addition, our paper aimed to contribute to the theory of DCs, as it focused on the effect of DCs in marketing relationships.

In this pursuit, we collected 268 responses from professionals in marketing and information technology and carried out a statistical analysis of our proposed model. Our findings show that in order to achieve CRM performance, organizations need to develop

marketing capabilities and innovation-oriented culture that will boost the integration of customer/relational knowledge through activities focused on building long-term, profitable relationships with customers.

CRM systems can certainly provide several benefits to organizations, from product/service customization to business intelligence (Chen & Popovich, 2003; Pedron & Saccol, 2009). However, deploying CRM systems without rearranging resources or building an environment where employees are encouraged to create new solutions and pursue customer satisfaction is unproductive. Insisting on quick and utopic solutions is the recipe for disillusionment (Hensmans, 2021; Kotler, 2003).

Managerial implications

We can point out the importance of integrating CRM practices and information relational processes with organizational strategy and daily routines. Executives need to understand that CRM is not only about installing IT software (Suoniemi et al., 2022). CRM strategy demands changing organizational structure and creating a culture that encourages employees to use customer knowledge to develop innovative solutions. For this reason, the involvement of top executives is fundamental. Undoubtedly, developing DCs demands constant investments of time, training, finances, and structure (Eisenhardt & Martin, 2000; Helfat & Winter, 2011; Teece, 2007). On the other hand, no one wants to be caught unprepared to deal with the constant changes and turbulence of the market. Therefore, investments in developing and sustaining these DCs must pay off.

Theoretical implications

One of the main contributions of this study is to show that by themselves CRM systems and relational information cannot leverage CRM performance. Organizations need to combine CRM with DCs and integrate relational information to decision-making by facilitating the access and usage of relevant information for all employees, especially those who are on the "frontline" with customers: in sales, telemarketing, retention, complaint management and loyalty programs.

Our empirical analysis shows the mediating effect of marketing capabilities and innovation orientation on the impact of relational information on CRM performance, as well as the mediating effect of marketing capabilities on the impact of relational information processes

on CRM performance. This emphasizes the role of intentional and systematic capabilities focused on using CRM technology and business knowledge to improve product/services development and align marketing strategy with customer demands (Richards & Jones, 2008; Teece, 2007). We also highlight that the validated instrument provided in this paper could be useful for other researchers.

Limitations and Future Research

Limitations of this research are the fact that we could not do a specific analysis of how organizations use CRM systems according to the business sector in which they are inserted. The business sector determines the role of a CRM system since each sector/industry has different variables to be considered in marketing strategy, such as customer behavior, applied technology, suppliers, competitors.

Another limitation is the fact that we could not address the survey exclusively to marketing professionals. We believe that capturing their insights could have provided relevant information on our object of study.

For future studies, we suggest a longitudinal analysis on the conduction of CRM practices and relational information processes and their impact on observable and collectable indicators such as ROI, customer satisfaction/fidelity, brand value and sales number. As our results could not validate the mediating effect of innovation orientation, another proposal for future study is to focus on the analysis of innovation-related programs and their effect on CRM performance.

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