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**THE IMPACT OF CUSTOMER RELATIONSHIP
MANAGEMENT USAGE ON BUSINESS
PERFORMANCE**

**Dissertação no âmbito do Mestrado em Marketing orientada pelo
Professor Doutor Arnaldo Fernandes de Matos Coelho e
apresentada à Faculdade de Economia da Universidade de
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The impact of Customer Relationship Management usage on Business Performance

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There is a road, no simple highway
Between the dawn and the dark of night
And if you go, no one may follow
That path is for your steps alone

Grateful Dead (1970). Ripple.

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ABSTRACT

Purpose: The purpose of this research is to identify the antecedents and consequents of CRM usage, as well as to understand how businesses around the world perceive and improve their business performance through CRM usage.

Approach: The conceptual model of investigation presents seven hypotheses related to CRM usage and the test is done in a sample of 209 professionals, who use CRM, from around the globe. The data was collected through an online questionnaire and empirically tested.

Results: This study concludes that the antecedent variables chosen, present a positive impact on CRM usage. Moreover, the consequent variables are positively impacted by the central variable of this study, which is CRM usage. Thus, it can be concluded that CRM usage positively impacts the performance of an organization.

Limitations and future lines of research: Although statistically significant, this study was based on a small sample, with 209 respondents. Moreover, this study combines a variety of industries and markets and to improve the reliability of the findings, further research should make that distinction. Finally, other metrics can be used to measure the variables in question and new constructs must be tested.

Practical contributions: This study presents three innovations: 1) the main elements to the construction of a successful CRM strategy; 2) the behaviours and strategies a company should adopt to build an effective and efficient CRM strategy and 3) the impacts CRM usage has on business performance. Thus, the antecedent variables can be considered paramount to a good CRM usage, which in turn is significant to the Performance of a Business.

Originality: This dissertation was developed with the purpose of bridging the existing gaps on the development of CRM strategies, with the focus being centred in technical factors, customer related factors and the performance of organizations through the usage of CRM. Despite the growing body of work in CRM, this study pioneers by inserting IT components and customer related ones to assess how these combined factors influence CRM usage. Furthermore, this study examines the impacts such factors have on the performance of organizations. An innovative study in the research field of CRM strategies and platforms. The survey was conducted with marketing, sales and customer support professionals operating in the global markets in order to understand the best practices adopted by the market and optimize them based on statistical evidence.

Keywords: CRM usage; CRM implementation; Business Performance; Market performance.

Resumo

Propósito: O propósito desta investigação é investigar quais os antecedentes e consequentes da utilização de CRM, assim como perceber como organizações no mundo percebem e melhoram a performance dos seus negócios através da utilização de CRM.

Abordagem: O modelo conceptual de investigação apresenta sete hipóteses relacionadas com CRM e o teste é feito a partir de uma amostra de 209 profissionais, que usam CRM, de todos os continentes do mundo. Os dados foram colectados a partir de um questionário *online*, que foi empiricamente testado.

Resultados: Este estudo conclui que as variáveis antecedentes escolhidas apresentam um impacto positivo na utilização de CRM. Além disso, as variáveis consequentes são impactadas de forma positiva pela variável central deste estudo, que é utilização de CRM. Sendo assim, é possível concluir que a utilização de CRM impacta de forma positiva a performance de uma organização.

Limitações e futuras linhas de investigação: Este estudo foi baseado numa amostra pequena, ainda que estatisticamente significativa, de 209 inquiridos. Além disso, este estudo combina uma variedade de indústrias e mercados e para melhorar a fiabilidade das descobertas, futuras pesquisas devem fazer essa distinção. Finalmente, outras métricas podem e devem ser usadas para mediar as variáveis em questão e testar novas hipóteses.

Contribuições práticas: Este estudo apresenta três inovações: 1) os principais elementos para a construção de uma estratégia CRM de sucesso; 2) os comportamentos e estratégias que uma empresa deve adoptar para criar uma estratégia CRM eficaz e eficiente e 3) os impactos do uso de CRM no desempenho dos negócios. Assim as variáveis antecedentes podem ser consideradas primordiais para uma boa utilização de CRM, que por sua vez são significativas para o desempenho de um negócio.

Originalidade: Esta dissertação foi desenvolvida com o objectivo de colmatar lacunas existentes no desenvolvimento de CRM, tendo como foco principal os recursos técnicos, os fatores relacionados com o cliente e o desempenho das organizações através da utilização de CRM. Apesar do crescente volume de investigação sobre CRM, este estudo é pioneiro ao inserir componentes de IT e componentes relacionados com o cliente para avaliar como esses fatores combinados influenciam o uso de CRM. Além disso, este estudo examina os impactos que tais fatores têm no desempenho das organizações. Um estudo inovador no campo da investigação de processos, gestão de estratégias e plataformas de CRM. A pesquisa foi realizada junto de profissionais de marketing, vendas e atendimento ao cliente que actuam nos mercados globais, com o objectivo de entender as melhores práticas adoptadas pelo mercado e optimizá-las com base em evidências estatísticas.

Palavras-chave: utilização de CRM; implementação de CRM; *Performance* dos negócios; *Performance* no mercado.

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List of Acronyms

AVE- Average Variance Extracted
CFA- Confirmatory Factor Analysis
CIM- Customer Information Management
CR- Composite Reliability
CRM - Customer Relationship Management
CRMusa – Customer Relationship Management usage
CSS - Customer Service and Support
CustOri – Customer Orientation
EDI - Electronic Data Interchange
EFA- Exploratory Factor Analysis
EFA- Exploratory Factor Analysis
ICT - Information and Communication Technology
IS - Integrated Systems
IT - Information Technology
KMO- Kaiser-Meyer-Olkin
MSC – Market Sensing Capability
OFP - Overall Firm Performance
PlaFlex – Platform Flexibility
PR - Public Relations
RBV- Resource Based View
RM - Relationship Marketing
SaaS - Software as a Service
SEA- Structural Equations Analysis
SEM- Structural Equations Model
SFA - Sales Force Automation
SPE - Sales Process Effectiveness
SRW- Standardized Regression Weights
TCF - The Customer Framework
TechOri – Technological Orientation
VoIP - Voice over Internet Protocol

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Chapter I- Introduction

I.I- Context of the dissertation

In a global market, companies are facing incredible levels of competition in all sectors of business. To maintain their existing market share and to reach out to potential market demand, firms should pay close attention to their customer relationship management (CRM) (Li et al., 2019a).

Given the rapid growth of platform enabled business revolutions, researchers, practitioners and entrepreneurs are increasingly interested in how it is possible to recognize emerging business opportunities (Zhu & Lin, 2019a). However, it still exists a lack of understanding of what factors contribute to CRM success, since there is no consensual framework provided by the research community that guides organizations to its successful implementation and investigates the relationship between CRM success factors and business performance (Al-Dmour et al., 2019; Ranki, 2019).

According to Statista, a German company specialized in market and customer data, CRM software sales are forecasted to reach 43.5 billion dollars by 2024 making it the biggest software market in the world. In principle, CRM is able to offer numerous advantages to companies, but a large number of companies frequently fail and are not able to match the expectations when adopting CRM (Li et al., 2019).

Consequently, this dissertation aims to, firstly, propose an integrated framework of factors affecting CRM success and technological, customer and business-related factors that influence that same success. Secondly, the dissertation will provide empirical evidence about the current industrial landscape and the way organizations are using Customer Relationship Management systems to further the relationships with their customers and to grow their businesses.

I.I.I- Historical Background

As a research and business area, CRM gained attention among scholars and the business community in the early 1990s, which is often considered the first wave or first generation of CRM. Customer Relationship Management developed a separate identity because of firms' need to take advantage of customer data when managing their customer relationships. Gradually, research evolved under multiple banners, resulting in a

fragmented set of perspectives, definitions and research results (Karjaluoto et al., 2013). CRM was originally developed as two independent devices. On one hand, as a sales force automation (SFA), whose responsibilities were to focus on presales functions such as maintaining customer data, telemarketing, generating leads, creating sales opportunities and placing sales orders and on the other hand, as a customer service and support (CSS) tool that addressed after-sales activities such as help and call centres (Kumar & Reinartz, 2018).

The goals set to these technologies were not being achieved and customer expectations exceeded the realized benefits, therefore leading to an increasing disillusion with CRM technology and its implementation. During the second wave, and even with the Internet boom, it became clear that this type of technology was hard to implement, realize and measure (Kumar & Reinartz, 2018).

The third wave of CRM happened by the end of 2002 when the CRM market started to pick up and the gap between customers' perceived value and value realized was shortening. This happened due to the fact that organizations had the time to learn from their failed implementations in previous CRM versions and started to implement a more strategic approach combining front-end-systems with back-end systems, as well as with systems from partners and suppliers (Kumar & Reinartz, 2018). Ultimately, vendors started to use the term "CRM" to refer to the assemblage of customer data and other business related activities concerned with the management of the customer-firm interface. (Karjaluoto et al., 2013). Thus, CRM was merely an empowering technology. Different types of technological solutions emerged as people realized there was a market for products and firms who needed to overcome the dispersion of data.

The fourth wave of CRM came at the end of the first decade of the twenty-first century, where companies realized a more agile and flexible strategy was necessary to help drive their businesses and cope with the growing prevalence of web-based services and the emergence of social media, which would later kickstart the fifth wave of CRM (Kumar & Reinartz, 2018).

The fifth and last wave of CRM so far happens due to the development of new technologies and the reach of social media. Often called Social CRM, the fifth wave is characterized by the engagement of the customer with the company, through social media channels, hence the name, and by the company's usage of real time data insights to optimize the overall customer experience (Kumar & Reinartz, 2018). With the growing

complexity of market demands and the emergence of new technologies, CRM surfaced as a technological answer for the necessities of the marketing strategies. (Araújo et al., 2018).

CRM has gradually shifted from just managing customer data. It has become a holistic approach to the management of customer relationships, in which, researchers emphasize the tactical, operational and strategical differences and benefits that it brings to an organization (Karjaluo et al., 2013). Figure number one provides a summarized perspective on the five waves or generations of CRM, its timeline and the main functions of each wave.

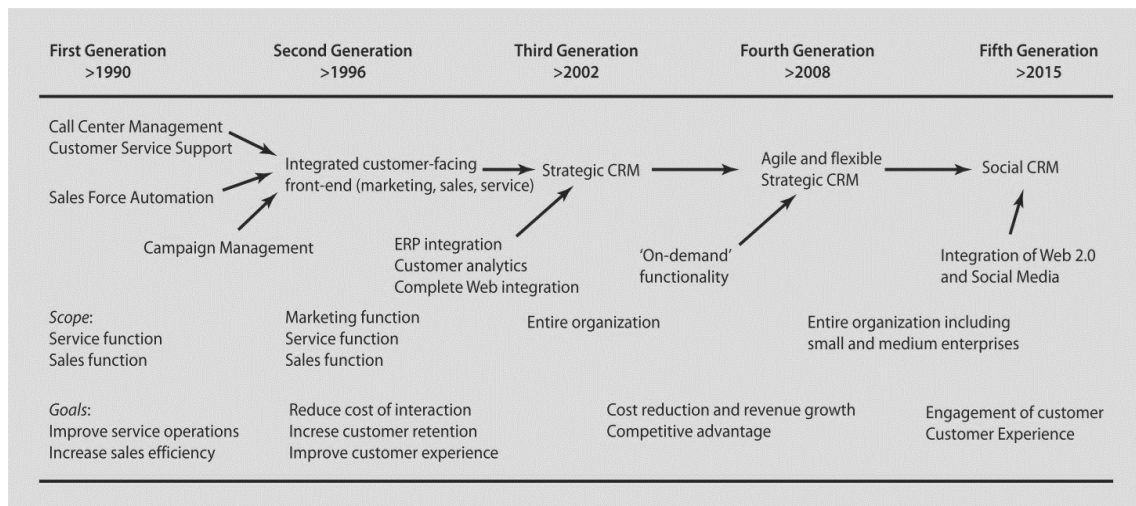


Figure 1- Timeline of CRM Evolution. Source: (Kumar & Reinartz, 2018).

I.II- Novelty of the dissertation and its objectives

Organizations perceive enhancements in the relations with customers as a profitable and sustainable way of doing business, which ultimately will lead to growth in their revenue. CRM exists exactly to support this theory. It focuses on enhancing, maintaining and establishing long-term associations with customers (Josiassen et al., 2014) and is guided by information collected through various channels before any decision by the business, sales or marketing professionals is made. CRM main functions are embedded in the business process of firms that are related to customers, such as marketing, sales, customer service, customer support and customer data analysis (Li et al., 2019a).

This dissertation comes, first and foremost, from the need to update the body of research about CRM since, as Abbad & Jaber, (2019) and Brengman et al., (2007) depicted, most CRM research studies were done during the nineteen nineties and decreased throughout the two thousands, which imposes the need to provide an updated understanding of how CRM is being used nowadays. Furthermore, a study conducted by Meena & Sahu, (2021) has concluded that one hundred and four CRM studies have been conducted between 2000 and 2020. From those, around thirty-four percent have been done between 2017 and 2020. This percentage is especially significant since the year 2020 has more studies published than any other year, as depicted in Figure number two. This observation puts into evidence the claim that CRM research needs to be updated and researchers are increasingly focussing on this topic.

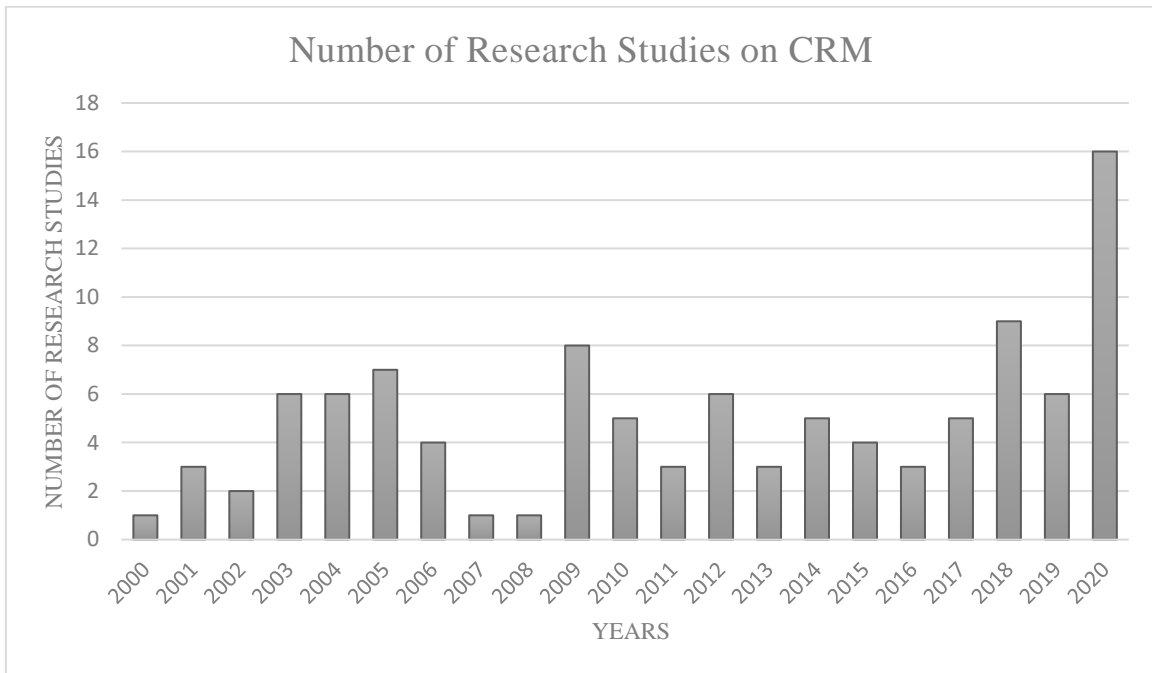


Figure 2- Number of Research Studies Regarding CRM between 2000 and 2020. Source: Meena & Sahu, (2021).

Garrido-Moreno & Padilla-Meléndez (2011) have pointed out that there are still research needs in different areas. First and foremost, search for a definition or a more generally accepted conceptual framework for Customer Relationship Management. Secondly, a search and analysis for the key variables of CRM and lastly, rigorous empirical studies of the impact of CRM on business results.

Also as Li et al., (2019) points out, it is easier to find the linkage between CRM and firm performance through IT related journals than in studies on CRM business value, therefore imposing the need for researchers to bridge this knowledge gap, that has not been yet covered, by investigating the value CRM can create to organizations (Suoniemi et al., 2021)

This dissertation aims to rectify gaps on CRM studies since most researchers either direct their attentions to the IT side of CRM or are almost exclusively customer centric, focussing on concepts such as customer retention, customer satisfaction, customer loyalty, and so on (Dalla Pozza et al., 2018; Harrigan et al., 2020). Through the amalgamation of IT and customer centric concepts, this research intends to provide an updated depiction of CRM capabilities and how CRM brings immediate and long-term benefits to companies

To understand the antecedents and consequents of CRM it is necessary to understand today's business landscape, as well as ascertain the main behaviours for businesses to adopt so they can be successful in their CRM implementation. Therefore, suitable IT related, customer related, and performance related metrics were adopted on the assumption that the combination of all these factors will improve firm performance.

This empirical study uses objective data sources that include moderating factors in the research model to avoid weakening effects of successful CRM implementation and increase the firmness of the results. The sample of this investigation is characterized by 209 professionals, with different levels in the companies in which they work and in different markets around the globe, and it was asked of them to provide their level of agreement to different statements. Thus, this investigation is also characterized for being a quantitative investigation. To test this model, objective data and measurements are selected on the basis of the existing literature.

I.III- Structure of the dissertation

After presenting the chapter I, which aims to outline the context, objectives and relevance of this research, the structure of this study is then shown, which was divided into four parts: literature review, model and research hypotheses, research methodology and results and conclusions.

In the chapter II, a review of the literature is presented about the concepts of CRM and its importance for organizations. Then, the concept of CRM is putted into evidence by presenting the models, types and benefits of CRM.

The chapters III and IV are dedicated to make a literature review of the variables at study and present the antecedents and consequents of CRM.

In the chapter V, denominated research hypothesis and model, it will be presented the conceptual model of investigation, as well as the hypothesis that support this research.

Then, in chapter VI, a brief explanation about the methodology of the investigation will be made and then, it will be presented and characterized the sample that was used to this empirical investigation. Subsequently, the questionnaire and the measurement scales used to build it will be presented. At the end of this chapter, it will be possible to verify the relevant exploratory and confirmatory factor analyses.

Chapter VII will highlight the results regarding the structural model as well as the hypotheses tested. At the end, the discussion of the results will be presented, considering the analysis of the antecedents and consequents of CRM, for the total sample.

Finally, the last chapter has the objective of presenting the theoretical and practical contributions of this study. It also intends to present the main limitations of the study and provide guidance for future research.

Chapter II- Literature Review

II.I- What is CRM?

After reviewing the literature on the concept of CRM, it is possible to say that there is not yet a consensus about a clear concept of CRM. Notwithstanding, there are a few definitions that present a better and more extended framework than others. Garrido-Moreno & Padilla-Meléndez, (2011) summarize the concept of CRM as a business strategy that aims to establish and develop value-creating relationships with customers based on knowledge. Using IT as an enabler, CRM requires a redesign of the organization and its processes to guide them to the customer, so that the firm can optimally satisfy customer needs and thereby generate long-term and mutually beneficial relationships. In this definition an important distinction in the CRM domain is made. CRM as an integrated approach, or as a management approach, is used to identify, acquire and retain customers (Ellatif, 2008) but, on the information technology approach, CRM is referred as the tools or system design to support the relationship strategy activities that identify, acquire and retain customers (I. J. Chen & Popovich, 2003).

Originating mainly from the relationship-based approach to management, the concept relies on the hypothesis that cultivating and maintaining long-term customer relationships is an effective way to achieve loyalty and that loyal customers are more profitable than non-loyal customers (Kincaid, 2003; Zablah et al., 2004; Nyadzayo & Khajehzadeh, 2016). One must not avoid the fact that CRM leans heavily on ideas from Relationship Marketing (RM), Customer Orientation (CO) and database management (Duarte & Pita, 2018) as well as other areas of research, such as Information Technology (IT) and Integrated Systems (IS).

According to Heide et al. (2007) CRM is a strategic and tactical approach that aims to grow, get and retain potential customers of an organization to achieve sustainable profitability. Giannakis-Bompolis & Boutsouki, (2014) agree with this definition, but they extend it by arguing that CRM is also partnering with selective customers to create superior value for the company and the customer. Its primary aim is to make organizations' focus on customers (San-Martín et al., 2016).

There are also those who take a more value creation approach when defining CRM. Brunjes and Roderick (2002) consider CRM as an ongoing process of identifying and creating new value with individual customers, and then sharing the benefits from this

value over a lifetime. It involves the understanding and focused management of ongoing collaboration between an organization and its selected customers for mutual value creation and then sharing this value through interdependence and organizational alignment (Samsudin, 2010).

Some authors view CRM as a strategic use of information, processes, technology and people to manage the customer relationships with the firm. CRM adoption requires the cross-functional integration of processes, people and marketing capabilities enabled by IS (Batista, L. et al., 2020). It is enabled by a delicate combination of social and structural aspects and by following an approach that supports relationship building, between customer and company, as well as technological aspects such as the effectiveness of the IS processes that facilitate customer data use. (Boulding et al., 2005; Payne & Frow, 2005; Trainor et al., 2014; Batista et al., 2020).

From an IT perspective, CRM is often viewed as an IT-enabled business strategy. This essentially means that CRM is not so much of a process but instead a business strategy that uses IT to achieve its purposes, which usually are to optimize profitability, revenue and customer satisfaction by organizing around customer segments, fostering customer-satisfying behaviours and implementing customer-centric processes. (Samsudin, 2010).

Some authors argue this lack of consensus happens due to the fact that CRM concept is combined with distinct academic backgrounds of researchers, and due to the multidisciplinary nature of CRM, which combines management, marketing and IS subjects (Cruz-Jesus et al., 2019). Others assume the problem can be traced to the terminology itself because it is interchangeably used with terms such as “relationship marketing”, “customer relationship marketing” , “technology enabled relationship marketing”, “customer managed relationships”, “customer management” (CM) or to refer to specific IT solutions such as “data warehouse”, “campaign management” or “sales force automation” (Payne, 2005). Nonetheless, most researchers and practitioners would agree that CRM is a business strategy that aims to develop long-term mutual profiting and personalized relationships based on IT infrastructure to enable it to function optimally (Peelen, 2005).

Based on these definitions, another definition is proposed: CRM is a broad, complex strategy and process of identifying, acquiring, and retaining valuable information, or data, about customers that enable organizations to obtain an extended

understanding of their customer base. By using that information wisely companies can work closely with customers to generate and create superior value for both parties. CRM also involves the integration of key departments such as marketing, customer service, sales, and supply-chain to achieve better efficiency and effectiveness in providing customer value, which has a direct impact on costs, efficiency, effectiveness and overall firm performance.

II.II- CRM Models

II.II.I- The IDIC Model

The IDIC model, developed by Don Peppers and Martha Rogers of the Peppers & Rogers Group is present in a number of their books (1996,1998,1999,2011,2017). This model suggests that companies need to take a four-action course to build closer relationships with customers (F. A. Buttle & Maklan, 2019):

- **Identify** who the customers are and build a deep, comprehensive understanding of them.
- **Differentiate** customers to identify which customers have the most value at the moment and which ones will offer more in the future.
- **Interact** with them to deepen the understanding of customer expectations and relationships with other suppliers or brands.
- **Customize** the offer and the communications to guarantee that expectations of customers are met.

II.II.II- The CRM Value Chain

Francis Buttle's (2006) model, depicted in Figure number three, consists of five principal stages and four supporting conditions towards the goal of better customer profitability. The primary stage objectives aim to ensure that a company, with the help of its network of suppliers, partners and collaborators, creates and develops value propositions that win and retain profitable customers. The supporting conditions enable the CRM strategy to function on an efficient and effective manner.

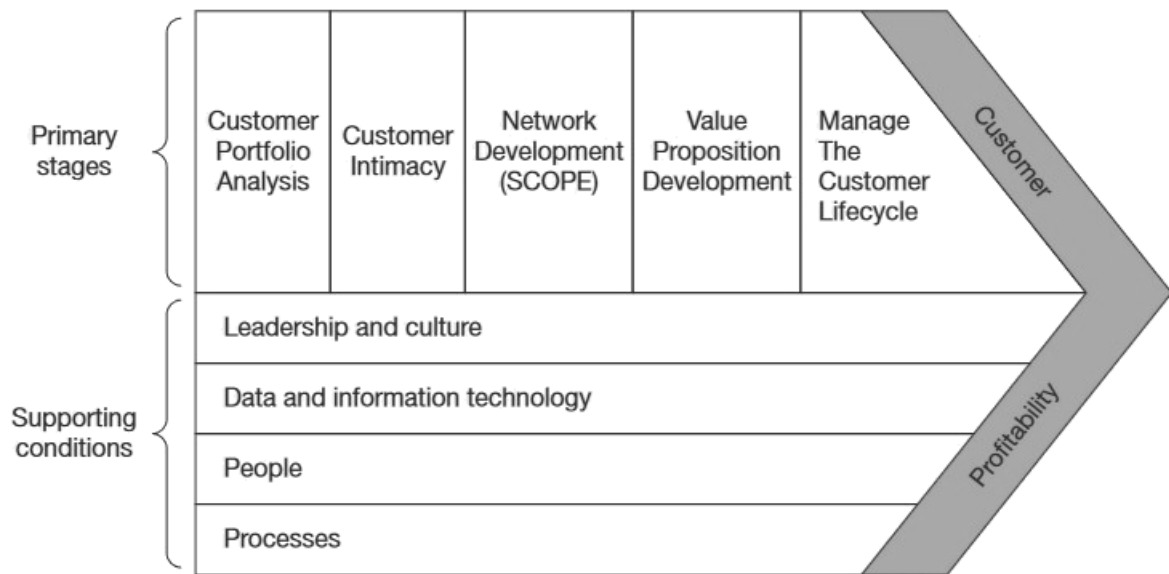


Figure 3- CRM Value Chain Model. Source: Buttle, F. (2006).

II.II.III- Five process Model

The Strategic Framework for CRM illustrated in Figure number four is based in the interaction of five cross-functional business processes, hence the “five process model” name that it is often referred to, and it deals with strategy formulation, value creation, information management, multi-channel integration and performance assessment (F. A. Buttle & Maklan, 2019). This process-based framework provides a closer look into what is necessary to achieve success with CRM. In the strategy development process, divided in two parts, companies must develop its business and customer strategy which in turn will affect the success of the CRM strategy. The business strategy dimension considers the vision of the business and the industrial and competitive analysis as a fundamental part for CRM success. As a part of customer strategy process, companies need to identify its market segments through an analysis of existing and potential customer’s preferences and characteristics. Value creation is determined by the value the customers bring to the company over a lifetime and with this value companies must maximize the desirable customer segments and achieve competitive advantages. Since companies are able to interact with customers through a diverse number of channels, the multichannel integration process is essential for CRM success. It includes determining the right channel, or combination of channels, to interact with customers and ensure a consistent customer experience across all those channels. Therefore, in the information management

process, organizations need to focus on gathering and wisely use customer information from all types of channels and integrate it with other relevant information to generate customer insights, build a consistent customer experience and long term customer relationships (Nasir, 2015). Finally, in the performance assessment process, companies need to test if the strategic aims of CRM are being accomplished or not (Payne & Frow, 2005).

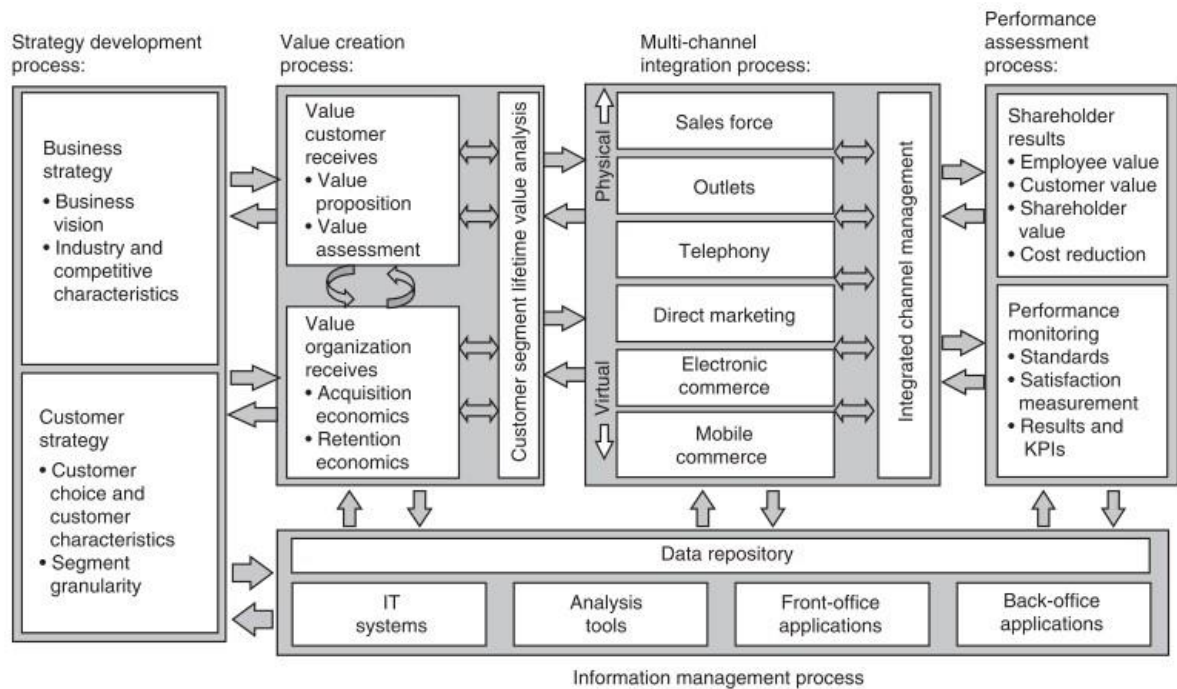


Figure 4- The Strategic Framework for CRM. Source: Payne, A. (2005b).

II.III-Types of CRM

Literature has suggested a different number of interpretations to what constitutes CRM's nature. Primarily, Zablah et al., (2004) identified five perspectives on CRM:

- CRM as a process includes all the activities for pursuing a durable, profitable and mutually beneficial customer-relationship; It is a process limited to the management of customer interactions to establish and maintain relationships with them.
- CRM as a philosophy defends that customer loyalty, and consequently profitability, requires a regular understanding of customers' evolving needs for the best value delivering.

- CRM as a capability argues that CRM can provide competitive advantages but those are tied to the ability of acquiring knowledge on current and prospective customers, and, for example, reshape customer interactions.
- CRM as a technology has the ability to manage knowledge and interactions, connecting front- and back-office responsibilities and play an incomparable role in firms' relationship management efforts.

More recently, various authors have proposed other conceptualizations of CRM, considering the basic premise that companies need to have customer management practices in order to maximize their value during the relationship's entire life cycle with the customers (Santouridis & Veraki, 2017). It explains CRM conceptualizations according to specific implementation dimensions, with each dimension representing a set of business activities (Thakur & Workman, 2016).

Based on the literature review, Dalla Pozza et al. (2018) identify four CRM dimensions: organizational alignment, customer management, CRM technology and CRM strategy implementation. The CRM strategy implementation needs a defined and clear customer-oriented strategy with the support of the top managers, customer-oriented performance metrics and a comprehensive view of the customer across the entire organization (Palmatier et al., 2007).

The organizational alignment dimensions focus on the importance of reshaping and aligning processes that reflect customer centricity. It refers to incentive systems and training programs put in place to maximize customer value (Kumar & Reinartz, 2006). The customer management part of CRM has the fundamental belief that different customers should be treated differently and, the customer relationships can only be effectively managed if an organization develops effective strategies for the different segments of customers according to their value and their needs (Dalla Pozza et al., 2018). Technology encompasses the degree to which analytical, operative and collaborative CRM is implemented to gather information across the diverse touch points and to facilitate information dissemination and analysis (Buttle, 2004).

However, other authors have taken a more IT oriented point-of-view and identified four main functional modules of CRM (Dong, 2010). Historically, operational CRM, has been an important area of enterprise investment as companies developed call centres or adopted sales force automation systems (Payne, 2005). The front-office or operational

CRM includes sales support, marketing and service processes and better communications between an organization and its customers through an efficient and effective flow of information. Its contributions concern the improvements in existing business processes (Li et al., 2019a). This area is also concerned with the automation of customer-facing business processes. CRM software applications that automate marketing, selling and service processes not only result in efficiency and effectiveness gains, but can also improve customer experience and engagement. (F. Buttle & Maklan, 2019). Some of the most important forms of operational CRM appear in Table number one.

Table 1- Applications of Operational CRM. Source: F. Buttle & Maklan (2019).

Marketign automation	Sales force automation	Service automation
Campaign management	Account management	Case management
Event-based marketing	Lead Management	Queuing and routing
Marketing optimization	Opportunity management	Service level management
	Quotation and proposal generation	Customer communications management
	Contact management	
	Product configuration	
	Pipeline management	

On the other hand, the back-office, or analytical CRM functions play a more vital role in capturing, storing, extracting, integrating, processing, organizing, analysing, interpreting and using customer related data created from the operational side of the business to enhance both customer and company value. It can assist companies in exploring new business opportunities and gain strategic advantages (Buttle & Maklan, 2019; Li et al., 2019; Payne, 2005). Customer related data, which analytical CRM heavily depends on, can be found in several enterprise repositories: sales data (e.g., purchase history), financial data (e.g., credit score, payment history), marketing data (e.g., campaign response, loyalty scheme data) and service data (F. Buttle & Maklan, 2019). This is what is called internal data, in other words, the data the company generates on itself from its daily activities. However, to these internal data can be added data from external sources such as business partners with whom companies have data sharing

agreements, third party organizations such as research firms and even the government by providing information with the census.

There is also the concept of collaborative CRM. This concept is broadly conceived as collaboration between one or more value chain participants (for example, suppliers, partners, customers and further external factors such as e-markets) to achieve more customer benefits and to improve customer relationships (Reinhold & Alt, 2009). Collaborative CRM is also used to describe the strategic and tactical approach of separate enterprises in the supply chain to identify, attract, retain and develop customers (Kracklauer et al., 2004). One practical example of this happens when manufacturers of consumer goods and retailers align their staff, processes and technologies to serve shoppers more efficiently and effectively. They are able to do it by employing practices such as co-marketing, category management, collaborative forecasting, joint product development and joint market research. (F. Buttle, 2009)

Collaborative CRM uses CRM technologies to communicate, through the appropriate channels of communication, and transact across organizational boundaries (Laketa et al., 2015). Such technologies include the more traditional ones, mail, telephone and fax but more recently applies to electronic data interchange (EDI), portals, e-business, voice over internet protocol (VoIP), conferencing, chat rooms, web forums and e-mail (F. Buttle, 2009).

Lastly, strategic CRM, which focuses on the development of customer-centric business culture, is dedicated to winning and keeping customers by creating and delivering value more effectively than competitors (F. Buttle, 2009). This culture is present in leadership behaviours and designing formal systems of the company. In a customer-centric culture it is expected that resources are allocated where they would best enhance customer value, implement reward systems to promote specific employee behaviours that enhance customer satisfaction and retention and that customer information is collected, shared and applied across the entire organization (F. Buttle & Maklan, 2019).

However, as Kotler P., (2000) points out, there are three main types of orientation to which customer centricity competes. Customer centricity competes with other business orientations such as product orientation, because this business logic argues that customers choose product with the best quality; production orientation believes that customers choose low-price products and businesses try to keep operating costs as low as possible;

Sales orientation assumes that if firms invest enough in advertising, selling, PR and sales promotions, customers will be convinced to buy. There is a strong correlation between customer-centricity and business performance and many managers would argue that it is a business logic that is right for every company. Nonetheless, at different stages, other orientations may have stronger impact to the business (F. Buttle, 2009).

Table number two provides a more summarized description of strategic, operational, analytical and collaborative CRM and what are the main characteristics of each type. Together, these four main components of CRM support and feed into each other and require the integration of all parts for a successful CRM implementation.

Table 2- Types of CRM and its Characteristics. Source: F. Buttle, (2009); Laketa et al., (2015).

Type of CRM	Main Characteristics
Strategic	Is a core customer-centric business strategy which aims to win and keep profitable customers.
Operational	Provides a unique source of information about customers. It deals with creation of information and support sales, marketing and customer service.
Analytical	Carried out through collection, processing and systematization of data to obtain relevant information.
Collaborative	Applies technology across organizational boundaries with a view of optimizing company, partner and customer value.

II.IV- Benefits of CRM

Customer Relationship Management has its base in the excellent knowledge of habits and needs of customers and it assumes that firms collect information of customer's behaviour in order to better serve them. Therefore, CRM is able to provide many benefits, at different levels of management, to the firms that use it and to the customers of that firm, namely improve data and knowledge management (F. Buttle & Maklan, 2019). CRM is helpful in creating an organizational structure in which the customer is the center of everything. CRM's return is expected to be greater on the short run rather than the long term. However, when a company is able to meet the fundamentals of CRM implementation, it can enjoy real benefits on the long run (Nasir, 2015).

Sometimes, organisations hand over CRM implementation to the IT department, rather than acknowledging the strategic benefits it can provide. (Jaber & Simkin, 2017). CRM can integrate and consolidate relevant customer information, assuring that the treatment of a customer remains consistent across all contact and service channels. It also enables an organization to manage customer cases ensuring that appropriate responses happen at the right time. (Kumar & Reinartz, 2018). CRM also assists in understanding the customers' needs and preferences allowing the personalization of both services and products according to the customer's special expectations (Kumar & Reinartz, 2018; Nasir, 2015). This certainly influences the customer retention, as better served customers become more loyal to the company, which in turn generates a stable source of revenue and profit. It is also noteworthy that satisfied and loyal customers are an important source of positive referral. Positive word of mouth is more believable than the traditional communication tools a company uses, such as advertisement, and presents a lower expense in customer acquisition costs for the company (Nasir, 2015).

The operational benefits of CRM include low marketing costs and increases in the efficiency of the processes related to customer service. The strategic benefits of CRM include a higher customer satisfaction and sales forecasting accuracy (Li et al., 2019). Sales teams are in a better position to schedule and manage their time, are better equipped to respond to and solve customer queries and most importantly, with a CRM system, there is a central customer database that every employee can access at any point, anywhere. (Pearce, 2021)

Gallego-Gomez et al., (2021) summarize the potential benefits derived from CRM by stating that “they increase the retention and loyalty of customers, offer more returns and create value for the customer, allow the mass customization of products and services, decrease the time for processing and increase the quality of products and services”.

Chapter III- Antecedents of CRM: Literature and Hypothesis

III.I- Technical Resources

The Dynamic capabilities theory posit that organizational processes allow a company to achieve a higher performance compared to its competitors (Y. Chen & Lin, 2021). Technical resources and IT-related capabilities can develop higher organizational resources to support digital operations activities and generate competitive advantage (Liu et al., 2013; Zhu et al., 2015; Saleem, K. et al., 2017). Studies point out the importance of technical resources in the relational value between a company and its partners at different levels of the value chain and also with its customers (Saraf et al., 2007; Zhu et al., 2015). This chapter is dedicated to the technical resources linked to the CRM structures under research.

III.I.I- Technological Orientation

Technological orientation relates to the resources available in one given organization, such as the IT infrastructure, which includes installed technologies, systems and applications. (Cruz-Jesus et al., 2019). It can be further perceived as the willingness to acquire new technologies and willingness to use technical knowledge to build new solutions in one given company. It nurtures both the ability and the will to acquire and use new sophisticated technologies to develop and enhance processes (N. Kim et al., 2010). Consequently, CRM technology enables organizations to plan and implement successful actions that aim to make the organisations more profitable (Roberts et al., 2005).

CRM corresponds to a wide range of factors that relate to software and hardware aspects, such as ICT infrastructure; purchase; implementation and integration cost; systems evaluation and selection criteria; complexity; integration; after sale support and software selection criteria (Alshawi et al., 2011). A great deal of technological skills is necessary from the organization's employees so they can take advantage of those applications. Therefore, organisations need not only technological resources but also human resources with a sufficient level of skills and experience. (Cruz-Jesus et al., 2019). CRM technology's success depends on how well the technology has been mastered, to what degree strategic marketing makes use of that technology and to what extent the users have welcomed the technology (Soltani et al., 2018).

CRM technological systems offer numerous benefits to firms, because they provide a broad view of the customers, manage the relationships with them in an integrated way, regardless of the communication channel used and help the firm improve the efficiency and effectiveness of the process involved in customer relationships. (Garrido-Moreno & Padilla-Meléndez, 2011). A high level of technological competence has a positive impact in improving the customer information management. Also, for companies to innovate a process or a product, a great benefit through technology development must be derived. (San-Martín et al., 2016). According to Mohammed (2012), CRM will inevitably fail if the information technology is not used properly. The suitable use of technology requires the right information from the right people at the right time, so that the correct decisions regarding services or products can be made (Madhovi & Dhliwayo, 2017). Another important aspect is to select the right technology, even if it is not the newest one. Some managers are so obsessed by the latest technology that they fail to recognize that the newest technology is not necessarily the most suitable for them. This error in not selecting the right technology for their necessities will inevitably mean the company will fail in their CRM strategy (Rafiki et al., 2019) and most likely incur on further expenses because on one hand the selected technology does not solve the problems the company was facing in the first place and on the other, the company will need to find a new technological solution for their original problem.

As the field of strategic management has expanded, researchers and professionals have shown interest in the role of IT in strategy formulation and implementation, and in its impacts on business performance (Powell & Dent-Micallef, 1997). CRM technological systems should be seen as an important component in implementing this type of strategy (Garrido-Moreno & Padilla-Meléndez, 2011). Sin et al., (2005) emphasizes that CRM software systems enable firms to offer a customized service with a superior level of quality but at an inferior cost and customer-centric activities are impossible without the right type of technology. Therefore, in order to implement a successful CRM strategy, firms should have the right type of technology with which to optimize the business processes involved in customer relationships (Chalmeta, 2006).

The technological aspect of Customer Relationship Management is usually perceived and studied as a capability or competence, and authors tend to define it as the effective deployment of technological resources available that are meant to support customer related activities (Cruz-Jesus et al., 2019; Foltean et al., 2019). As Kotler P.,

(2004) points out, companies frequently depend on continuously updated software and hardware to better respond to their customers' needs and build enduring customer relationships. Thus, it is possible to assume that firm's technological orientation is a key component to perceive benefits in implementing CRM solutions but is only a means to a better customer relationship management. CRM technology makes it easier to perform tasks, but it is not a strategy on itself. However, literature argues that organisations with a higher technological orientation are more likely to be successful when adopting CRM.

III.I.II- 1st Hypothesis

Literature suggests that IT creates advantages by leveraging and exploring existing human and business resources and the firms that combine IT with critical complementary resources gain performance advantages (Powell & Dent-Micallef, 1997). According to a study conduct by Foltean et al., (2019), in order for organizations to improve firm performance, they should adopt new and necessary technologies in order to enhance CRM capabilities. San-Martín et al., (2016) also concluded that more benefits are derived from a CRM strategy, when a company is technological orientated. Previous studies point out that the complex relationships among technological and managerial knowledge resources can lead to distinctive competitive advantages (Azar & Ciabuschi, 2017). Therefore, it is assumed that continuous improvement of technological resources is required to use CRM and the first hypothesis of this research is presented:

H1: Technological Orientation positively affects Customer Relationship Management usage.

III.I.III- Platform Flexibility

Platform flexibility is defined by the ability of a digital platform to support inter-firm process pairing, integrate and transmit data and by the participation in business operations between a focal firm and its partners (Barua et al., 2004; Bush et al., 2010; Saraf et al., 2007). Platform flexibility is also defined in terms of the number and variety of IT platforms that a focal firm can connect with and its compatibility with IT services and applications of its suppliers and business partners. In other words, it broadly refers to the extent that the focal firm's IT resources are malleable (Bush et al., 2010).

Flexibility in IT platforms allows a firm to combine its back-end systems with front-end applications to uphold nuclear business functionalities across firm boundaries and enables the integration of activities between a focal firm and its partners, so they can accomplish business activities together (S. Wang et al., 2012). It also allows the addition or removal of business partners and reconfiguration of existing ones. Such ability concedes firms to rapidly follow new opportunities and to capitalise on emerging market trends by combining new resources and capabilities from a diverse variety of existing and new partners (Bush et al., 2010). In addition, it improves online services through operational optimization, customer analysis, collaborative management, customer service support and sales automation (Zhu et al., 2015).

By promoting an easy flow of information inside the focal firm and to its partners, platform flexibility makes it easy for both entities to identify barriers and work together to find solutions to improve business processes (Zhu et al., 2015). With real time information sharing, between the focal firm and its partners, it is possible to foresee changes in the markets and identify potential problems, which, in turn, allows the companies to adjust or develop new mechanisms as needed (Devaraj et al., 2012). The technological infrastructure needs to have a high level of flexibility in terms of data access and sharing in order to give an adequate response in times of change. Such flexibility allows the organisations to be better equipped to capitalise on staff competencies and explore long-term relationships (Batista et al., 2020). That is to say, it serves as a venue for innovation since professionals will seek or find solutions to problems that can later be scalable (Lusch & Nambisan, 2015).

In information technology (IT) literature, a platform was mainly the environment in which program code was executed. The environment was the hardware, operating system, web browser or other type of software. The term was then extended to applications (e.g., spreadsheets), combinations of applications (e.g., office suites), cloud computing or SaaS that allows users to build software and applications from components not hosted by their own company (Stone et al., 2017). Academic researchers highlight that it is encumbered to IT infrastructures to collect data in the same platform in a way that facilitates and allows real time information sharing, facilitate business routines and promote more effective, productive and profitable operational procedures (Zhu et al., 2015). One organization that lacks effective coordination between business units tends to

generate resolutions that do not meet the general objectives of the company and create significant problems for organizations and its partners (Boh et al., 2006).

III.I.IV- 2nd Hypothesis

Zhu et al. (2019) conclude that platform flexibility allows the integration of activities that a focal firm and its partners can collectively carry out and, therefore, improve performance. Lusch & Nambisan, (2015) affirm that a company's participation in an IT based collaboration or ecosystem can enhance the valuation and performance of the company that partakes in the ecosystem. Subramaniam et al., (2013) defend that the degree to which the platform is flexible affects the overall CRM system utilization. Therefore, it is assumed that a good flexibility of the CRM platforms is required to use CRM and the second hypothesis of this research is presented:

H2: Platform Flexibility positively affects Customer Relationship Management usage.

III.II- Customer Related Factors

The adoption and facilitation of interactions and collaborations between customers and companies has been highly accelerated in the last years. Moreover, technological advancements have given enterprises the ability to capture the feedback of its customers, customize some parts of its products or services to suit each customer's desires and needs (Peppers & Rogers, 2011). Accordingly, this chapter is dedicated to the customer factors related to CRM, since it is proposed that companies need to have a high degree of focus on their customers.

III.II.I- Customer Information Management

A key capability in CRM is the management of customer information. (Jayachandran et al., 2005). It is encumbered of ensuring that the best possible information is used to achieve the organization's goals (Payne & Frow, 2006; Riedl et al., 2017). However, for that to happen, companies need to collect and examine customer information, widely known as "data". (Harrigan et al., 2012). So, one can consider the information management process as the "engine" of CRM activities.

Although collecting as much customer information as possible may sound interesting, one must keep in mind the ultimate goal, which is to develop relationships with customers that are profitable for both sides. The information collected must be able to assist customers on time, in a more personalised manner and with more appropriate solutions, otherwise, data that do not contribute to these goals, is not worthy of registering and storing (Peelen & Beltman, 2013). Outstanding information management practices generate a great level of internal efficiency in customer related activities and information within the firm is used to create opportunities for additional analysis. That internal efficiency concede organizations not only to organize customer information in a competent manner, but also to perform analytical processes that create a more broad and deeper understanding of each individual customer and, therefore, the overall customer base (Harrigan et al., 2010). A data warehouse that provides information about customers; IT systems including the organisation's software, middleware and hardware; analytical tools and front-office and back-office applications need to work together to collect and compare information from all points of customer contact. This will allow the development of customer insights that can enhance the quality of the customer experience (Payne & Frow, 2006). Notwithstanding, collecting customer data is not a guarantee of success on its own. Specialists develop the best CRM systems to collect, process and use customer data, which enables professionals to solve customer issues quickly, but firms that have partial or incorrect customer data will be at risk of having frustrated customers and will often experience less profitability (Simmons, 2015).

Through the effective use of analytical tools, the data warehouse can help identify the most promising customers and assist in developing strategies to retain them and enhance their value (Payne & Frow, 2006). In terms of the existing customer base, information on customers can be analysed to profile and classify them, predict their behaviour, conduct personalised marketing campaigns and cross- and up-selling (Harrigan et al., 2012). Today's businesses are overwhelmed with information and CRM ultimately focuses on effectively turning information into knowledge and manage customer relationships more efficiently (Rafiki et al., 2019). Recognising that firms need to use customer information to better suit their customer's needs and wishes, inevitably leads to the development of platforms for managing the data. As Stone et al., (2017) points out, the main reasons for this are as follow:

- The need for the company to use the most recent, most advanced techniques and capabilities for holding, managing and analysing data.
- The possibility of a certain company working with a larger business partner that has a much better capability to gather, hold, manage and analyse data.
- The company perhaps has changed the business model or has acquired another firm with a distinct business model and adapted it for its own use.
- A promise or even a legal obligation by the company to make its customer data available to customers, combined with the acknowledgement that the company's own data repository and management capability is not suitable.

The customer information management subject has become an increasing challenge for firms. The literature suggests that this process consists in activities such as acquisition, analysis, interpretation and storage of customer information (Rafiki et al., 2019). Once the system has gathered customer information, managers need a tool that will allow them to analyse the data. That tool is analytical CRM, which ultimately provides the data analysis that managers need to extract value from their CRM investment (Simmons, 2015). The literature suggests that a more complete understanding of a customer will lead to also understand its needs and lead to superior performance (Harrigan et al., 2010).

III.II.II- 3rd Hypothesis

Individual information on customers, when used properly, can prove to be a return for many years. A study conducted by (Peppers & Rogers, 2011) concluded that the success on achieving profitable customer relationships heavily relies on having information and using it wisely. Becker et al., (2009); Kim et al., (2010b); Kim (2008); Rafiki et al., (2019) pointed out that activities related to the collection, storage and access to customer information has contributed to an improved CRM usage. Therefore, it is assumed that a good management of customer information is required to use CRM and the third hypothesis of this research is presented:

H3: Customer Information Management positively affects Customer Relationship Management usage.

III.II.III- Customer Orientation

Customer orientation is a culture-based concept that determines the company's connection with its customers and it is present in its norms, behaviours, values and beliefs (Bhat & Darzi, 2018). Kumar & Reinartz (2018) define customer orientation as a set of organizational values, beliefs and strategic actions that enable the employment of customer management principles. It is implemented by the top management, believing and committing to the idea that the customer is the center of all activities. Such activities focus on defining and perceiving the different needs of the customers and initiate the firm's reaction to meet and fulfil those needs above the competitors (Aliyu & Nyadzayo, 2018). Customer orientation can also be defined as a behavioural phenomenon and a cultural concept that refers to the organization's ability to satisfy and understand the needs of the customers in order to build long lasting relationships with them (Soltani et al., 2018). To facilitate those long relationships, it is the belief of Deshpandé et al., (1993) that customer orientation needs to prioritize the interests and needs of customers. Interests of other stakeholders such as employees, managers and owners come after the customer.

Customer oriented firms recognize that customers are different in terms of their needs and value to the company, so organizations need to be ready to treat different customers in a different manner. They also recognize that all relevant organizational functions have to be aligned with this strategy (Kumar & Reinartz, 2018). In terms of achieving solid relationships with customers, customer orientation has confirmed to be highly instrumental due to the fact it assimilates the customer-oriented culture and actions into the employees of an organization, therefore impacting their performance in a positive way (Soltani et al., 2018).

Customer orientation will help organization's attitude towards the successful implementation of CRM, achieve higher CRM performance and better organizational performance (Bhat & Darzi, 2018; Rafiki et al., 2019). Literature also supports the claim that customer orientation leads to reduced process conflicts between partners, because it encourages better relationship quality between them to, together, fulfil the customer's needs. (D. Kim et al., 2018). The main purpose behind customer-oriented behaviours is to increase customer's long-lasting satisfaction and create customer-loyalty (Madhovi & Dhliwayo, 2017).

Various theories suggest that firms that are customer oriented can have their employees emulating the intended customer oriented attitudes, behaviours and beliefs (Aliyu & Nyadzayo, 2018; Pelham, 2009). According to Siddiqi & Mahmud (2018), the concept of customer orientation is also related to a firm's employee's and is constructed on two dimensions: firstly, an employee's certainty towards meeting customer demands and secondly the extent to which the employee is inclined towards interacting with customers. From a sales point of view, customer orientation can be referred as the degree to which the salesperson engages with customers, communicates the benefits of the firm's offering to help the customer make the correct purchase decision and communicates the customer's needs back to the firm (Pelham, 2009; Siddiqi & Mahmud, 2018).

III.II.IV- 4th Hypothesis

In Marketing and IT studies regarding CRM there is a consensus that customer orientation is an important basis for CRM performance. Rafiki et al., (2019) concluded that customer orientation encourages firms to create positive aspects that drive CRM usage. Y. Wang & Feng, (2012b) point out that customer orientation will guide the organization's attitude towards the implementation of better CRM practices, therefore leading to an establishment of longer customer relationships and in turn strengthening CRM capabilities and usage of a firm. Furthermore, researchers have found customer orientation to have a positive impact on the performance of a firm and is considered one of the dominating factors of CRM efficiency and effectiveness (Bhat & Darzi 2016; Day & Van den Bulte, 2002; Minami & Dawson, 2008). Therefore, it is assumed that customer orientation is required to use CRM and the fourth hypothesis of this research is presented:

H4: Customer Orientation positively affects Customer Relationship Management usage.

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Chapter IV- Consequents of CRM: Literature and Hypothesis

IV.I- Business Factors

CRM has the ability to reduce costs while promoting profit efficiency (Li et al., 2019). Literature points out that CRM utilization can bring effective positive results to an organization and that it is important to incorporate non-financial performance metrics to measure its impact on organizations (Chang, 2007). Therefore, the Sales Process Effectiveness, Market Sensing Capability and Overall Firm Performance variables were selected to determine the success of CRM capabilities.

IV.I.I- Overall Firm Performance

Performance is at the core of every company because it is the basis from which it acquires growth and profitability. CRM capabilities can provide means and methods to meet the customer's needs and preferences that consequently contribute to create and maintain relationships with them, which will translate into better performance (Alqershi et al., 2018). By creating direct benefits on customer relationship performance, CRM systems generate indirect benefits for the overall firm, which is critical for enhancing performance and provide competitive advantages (Chuang & Lin, 2013).

By trying to deepen the knowledge about the contribution of CRM capabilities to firm performance it is necessary to exploit the RBV theory. The Resource Based View theory postulates that heterogeneity in resources is fundamental to competitive advantage and firm performance (Foltean et al., 2019). Its basic logic starts with the assumption that the outcomes of managerial efforts within a firm is a sustainable competitive advantage and achieving it will allow the firm to earn above average returns. The RBV emphasises the strategic choice of charging the firm's management with the important tasks of identify, develop and deploy resources as essential to achieve firm performance (Fahy, 2000). Literature found that specialized marketing capabilities (e.g., product development, pricing, channel and information management, communication and selling) and architectural capabilities (e.g., planning and implementation) have a positive and direct influence on firm performance (Vorhies & Morgan, 2005). Furthermore, firms that convert resources into new value-generating processes are likely to benefit from improved performance. Within this context, CRM capabilities presumably will positively impact performance because they place an emphasis on revenue generation through

increased customer satisfaction while, at the same time, reducing costs through increased efficiency (Trainor et al., 2011). Abdullateef et al., (2010) documented a significant correlation between technology-based CRM and performance. CRM systems result in an increase in product, process, marketing and administrative activities and service organization's capabilities. CRM implementation means that organizations are able to adapt their interactions according to the life-cycle stages of their customers and there is also the possibility to influence those interactions. The goal is naturally to profit from those customers (Reinartz et al., 2004).

Technology-based CRM systems will result in an increase in process, product, marketing, administrative activities and service organization's capabilities. The organization, its people, processes, technology and CRM working harmoniously together can provide superior customer satisfaction, develop profitable relationships, which in turn will benefit the overall performance of the company (Alqershi et al., 2020). In fact, business process optimizations can have a significant impact in terms of reducing operating costs and therefore increasing profitability. Literature demonstrates that there is a strong linkage between efficient business processes and firm performance (Y. Chen & Lin, 2021)

The performance results that come from CRM are mediated by the business strategies made. This means, that it is hard to see the direct impact of CRM in business performance. The linkage consists with a framework that starts with *sources*, followed by *positions* and finishes with *performance*. CRM is considered the source that enables organizations to achieve a different position in the market, which in turn drives firm performance (Schilke & Thomas, 2010).

It is noteworthy that the examination of the linkage between CRM and firm performance is more easily discovered in IT studies than in CRM studies. This implies the need to redesign the empirical research model for the mechanisms of CRM value creation (Li et al., 2019) and firm performance has been viewed from two financial performance perspectives. One objective and other subjective. An objective perspective is based on absolute measures of performance, that is to say, specific numbers. The subjective perspective, is more concerned with the performance of firms when compared to their competitors (Rafiki et al., 2019). Concerning this research, a subjective view is chosen because company information is usually considered highly confidential, and respondents could be reluctant to provide financial information about their companies.

IV.I.II- 5th Hypothesis

CRM activities seek to acquire maximum benefits of businesses, enhance the satisfaction of customers, provide different services or products to those of the competition, satisfy customer's needs and maintain the loyalty, which CRM can provide allowing the increasement of firm performance (Soltani et al., 2018). In a research project conducted by Rahimi et al., (2017), the authors identify a positive relation between CRM usage and firm performance. Further research projects also support the positive linkage between CRM usage and improved firm performance (Choudhury & Harrigan, 2014; Nam et al., 2019; Noone et al., 2019) Therefore, it is assumed that usage of CRM drives firm performance, and the fifth hypothesis of this research is presented:

H5: Customer Relationship Management usage positively affects the Overall Firm Performance.

IV.I.III- Sales Process Effectiveness

Sales Process Effectiveness refers to the ability to complete outcomes in the sales process in an effective way, by analysing opportunities and improve closing rates (Rodriguez & Jr., 2011). As customers become better informed, the sales process has shifted from "selling a product" type of interaction, to a more "creating a relationship" type one (Storbacka et al., 2009). The sales process is a systematic and well defined approach that encompasses a series of steps that enable sales professionals to manage their work efficiently and effectively and ultimately close deals and make high volumes of sales (Ismo, 2017). In order for that to happen sales professionals fundamentally need to understand the customer, which consists of gathering knowledge, prospecting, generate leads, determine the communication means and identify risks (Enyinda et al., 2020)

Sales relies on a structured approach usually based on three components: 1) a structured sales process that defines the stages and milestones of a sale, as depicted in Figure number five; 2) it uses performance measurements that intend to measure what occurs throughout the sales process and finally, 3) it relies on sales tools, such as CRM that support and automate the sales process (Bernard et al., 2016).

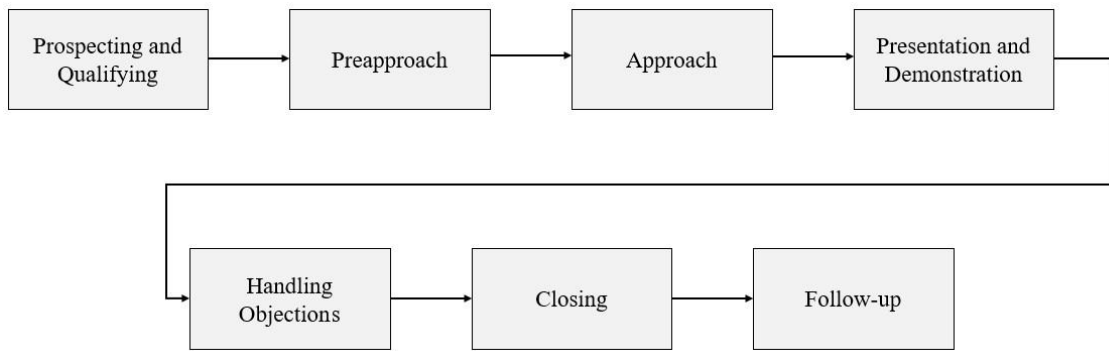


Figure 5- The Sales Process. Source: Kotler & Armstrong (2017).

According to Kotler & Armstrong (2017), the sales process is divided in seven steps consisting in prospecting and qualifying, preapproach, approach, presentation and demonstration, handling objections, closing, and follow-up. The first step in the selling process is to identify qualified potential customers, since approaching the right customers is crucial to succeed in sales. It is in the salespeople best interests to contact those who are most likely to respond to the company's value proposition, otherwise it is a waste of time, energy and capital. Before contacting a prospect, the sales professional should learn as much as possible about the potential buyer. A successful sale begins before the salesperson makes the initial contact with a potential customer. Preapproach begins with good research and preparation. During the approach phase, the sales professional meets or contacts the customer for the first time. The approach might take place offline or online, in-person or via digital conferencing or via social media. During this step, a dialogue is established, and the salesperson should acknowledge that listening to the customer is crucial for the success of the sale.

In the presentation step, it is the salesperson task to tell the value the product or service brings to the buyer. The goal is to demonstrate how the company's products or services fits the customer's needs and solves their problems. Buyers want salespeople to listen to their concerns, understand what their needs are and respond with the right solution. Usually, customers have objections during the presentation or when placing an order. In this step, the salesperson should use a positive approach and take every objection as an opportunity to provide more information and turn the objections into reasons for buying.

After handling objections, the next step is to try and close the sale. However, a lot of salespeople do not handle it very well. They may lack confidence, feel guilty about

asking for the customer to place an order or fail to recognize the right moment to do so. Sales professionals must be able to recognize signals from the buyer that they are ready to buy. This may include physical actions, comments and questions. After all this work, one must not forget to follow-up on the sale if one wants to ensure customer satisfaction and repeat business with that same client. The salesperson should reach to the client to make sure everything went as planned. This is an opportunity to reveal any problems and assure the buyer of the salesperson's interest.

In order for salespeople to capture customer interactions, improve data quality and succeed, the sales process requires knowledge held by marketing activities, by operations and finance, therefore resulting in the need for communication within the company (Storbacka et al., 2009). Technology, in the form of CRM, can enable sales professionals to access client information and deliver a solution that meets the customer's needs, thus resulting in increased sales performance. Understanding customer's needs and matching those to the right product or service is essential for sales success (Rodriguez & Boyer, 2020). Effective sales processes enables companies to focus on customer productivity and organizational performance; foresee the outcomes of sales by finding the best practices for every sales person to follow, according to the customer and finally, create tangible and measurable results (Ismo, 2017; Rodriguez et al., 2016).

Modern CRM systems are able to provide incredible features to manage customer interaction. With those tools, the processes and data can be standardized and harmonized, and therefore, it is accessible to all of those that use the system. CRM systems are made to manage customer interaction data and provide innovative ways to manage the entire sales funnel and detect future sales opportunities. By providing a comprehensive depiction, based on customer data stored, CRM systems increase customer relations, which, in turn, will translate into increased sales (Ismo, 2017). Although a very well-structured sales process provides clear guidelines of approach, it can have the risk of being too rigid and prevent sales representatives from adapting to customers. Hence, companies should design sales processes that define nuclear sales activities, but that maintain sufficient flexibility to adapt to various situations, including different customers and different buying processes (Bernard et al., 2016; Viio & Grönroos, 2014).

CRM tools are designed to help sales professionals manage customer relationships by improving communication, understanding the client's needs and creating right solutions for the customer (Rodriguez et al., 2015).

IV.I.IV- 6th Hypothesis

Literature suggests that by using CRM and exploiting its capabilities, salespeople are able to expand their knowledge, target the right customers, and improve their presentation skills, which will culminate in a more effective sales process (Rodriguez & Jr., 2011). Rapp et al., (2008), point out that the customer centric inherent traits of CRM can facilitate the access and use of customer information, allowing the sales professional to create and conduct more effective sales calls and sales pitches. Rodriguez & Kevin Trainor, (2016) concluded that CRM technology, assist companies achieve high organizational performance and increase sales process effectiveness. Therefore, it is assumed that usage of CRM enhances sales process effectiveness, and the sixth hypothesis of this research is presented:

H6: Customer Relationship Management usage positively affects Sales Process Effectiveness.

IV.I.V- Market Sensing Capability

Market Sensing Capability is the ability of a company to learn and understand its customers, competitors and distribution channels, in order to be more efficient and effective in seeing and take advantage of market opportunities (Sulaeman & Kusnandar, 2020). Day (2002) divides market sensing capability into three parts:

- 1- Sensing activities that are relevant to gather and distribute information related to customer's needs, wants and expectations, market segmentation, relationship sustainability and rivals' competences and purposes.
- 2- Interpreting and understanding the information gathered.
- 3- Evaluating activities related to feedback monitoring, utilization of the gathered information in decision-making.

Market sensing activities are only possible if an organization is capable to understand, process and use information (Heusinkveld et al., 2009). Therefore, market sensing capability is related with analytical processes that allow an analysis of opportunities and threats. Companies who fail to create this kind of processes are less likely to assess market opportunities correctly. The effectiveness of analytical processes greatly depends on the existence of organizational articulation that connects external

inputs and internal operationalization. On a good organizational articulation, decisions contribute to integrate and leverage capabilities, establish an environment of collaboration between the firms employees and focus the entire organization on a common objective (Dias, 2013).

From a revenue growth perspective, market sensing capabilities that are superior enhance firm's ability to identify underserved market segments and situations where its competitors' offerings are not fulfilling customer and channel requirements (Morgan et al., 2009a; Saleh, 2015). Morgan et al., (2009) also defend that from a margin growth rate perspective, market sensing capabilities provide insights about the market and allows a better matching of the firm's resources and deployments with customer and prospect opportunities, therefore lowering their usual costs. Market sensing differs from market research in the sense that market sensing describes an organization process designed to enhance the understanding about the market in which one firm operates. On the other hand, market research focuses exclusively on data collection. Market sensing involves more than collecting information, because, in this case, information is shared across functions and interpreted to determine the right course of actions (Ardyan, 2016).

As presented by Dias, (2013), Market Sensing Capabilities research has been focused on the mechanisms that enhance business opportunities. Mechanisms such as detection of changes in customer preferences, formal and informal contacts with stakeholders and market research are used to foresee changes and opportunities in the market one given company operates in. Studies done on market sensing capabilities have also exploited its mediating role between employee oriented practices and innovation (Lin et al., 2020). The argument being that employee-oriented practices are a sign management cares for their employees and, to reciprocate, employees engage in collecting and analysing information to benefit the organization.

IV.I.VI- 7th Hypothesis

CRM usage enhances a firm's market sensing capability, in which the focus of their efforts and resources is aimed to the most profitable customers and those with a potential for future profits, resulting in a greater success for the organization (Saleh, 2015). Day & Schoemaker, (2019) concluded that information technology, such as CRM, plays a vital role in market sensing activities since different business functions have access to useful information. Morgan et al., (2009) study also concluded that CRM plays

a useful role in the marketing sensing capabilities of an organization. Therefore, it is assumed that the usage of CRM enhances market sensing capabilities, and the seventh and final hypothesis of this research is presented:

H7: Customer Relationship Management usage positively affects Market Sensing Capability.

IV.I.VII-Conclusion and Table of Concepts

The literature review presented in the second, third and fourth chapters, compile the research about technological and customer factors that impact CRM usage, as well as the consequence of that variable for business performance. Table number three presents the concepts introduced in these chapters.

Table 3- Summary of the Variables at Study. Source: Self-elaboration.

Category	Variable	Definition	Authors
Technical Factors	Technological Orientation	Corresponds to the technology resources available in the organisations and the willingness to acquire new technologies to build new solutions.	Cruz-Jesus et al., 2019
	Platform Flexibility	The ability of a focal company and its partners to share information and processes in real time, with improvement and synchronization of production with business routines and operational procedures.	Zhu et al., 2020
Customer Related Factors	Customer Information Management	Acquisition/generation, analysis, interpretation and storage of customer information to solve customer issues quickly and deliver an excellent customer experience.	Rafiki et al., 2019
	Customer Orientation	Aspect of organizational culture that places importance on long-term, mutually beneficial relationships with customers.	Harrigan et al., 2020
Business Factors	CRM usage	Strategic use of information, processes, technology and people to manage the customer relationships with a firm.	Batista et al., 2020
	Overall Firm Performance	The operational and strategic benefits provided by CRM that aim to increase processes related to customer service and customer satisfaction and will translate in a higher volume of sales and therefore more profits.	Li et al., 2019
	Sales Process Effectiveness	A pre-defined and systematic approach involving a series of steps that enables sales functions to manage its work and to close deals and make more sales.	Ismo, 2017
	Market Sensing Capability	The ability of a company to learn about its customers, competitors and distribution channels, so they have more ability than their competitors in seeing market opportunities.	Sulaeman & Kusnandar, 2020

Chapter V- Research Hypotheses and Model

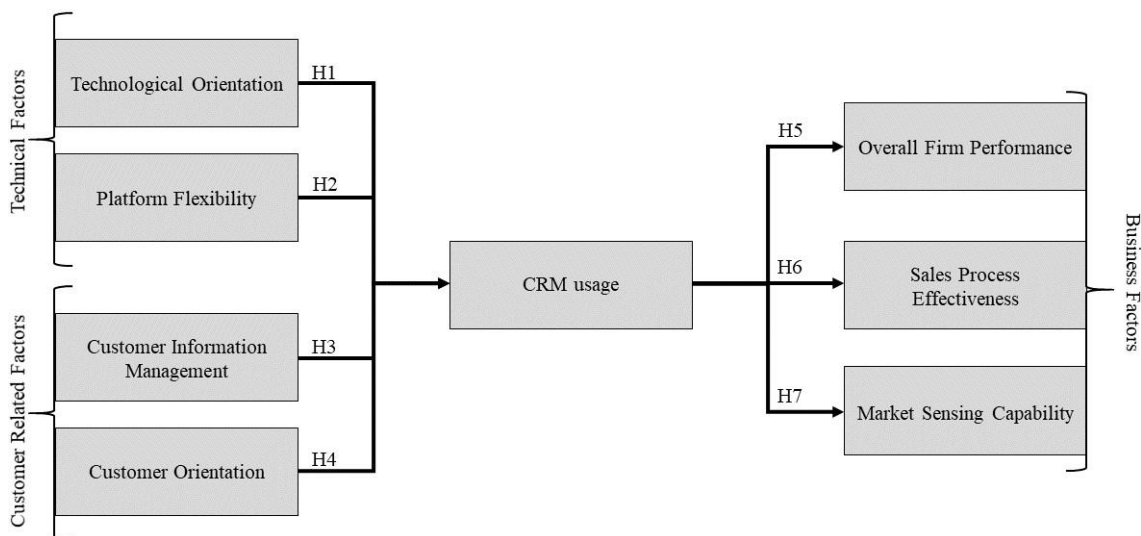
V.I. Introduction

The presented context and literature review provides academic background that supports the conceptual research model for this study. In this chapter it will be presented the compilation of all hypotheses that contemplate the antecedents and consequents of Customer Relationship Management usage in this investigation.

V.II- Conceptual Model of Investigation

The conceptual model of this investigation is presented in figure number six and puts into evidence the possible relations between the factors approached by the academic literature through eight constructs. The conceptual model was developed based and adapted from the work of Powell & Dent-Micallef (1997), Zhu & Lin, (2019), Harrigan et al., (2010), Jayachandran et al., (2005), Deshpandé, Farley, & Jr., (1993); Rodriguez & Jr, (2011) and Morgan et al., (2009) supporting the idea of incorporating a multidimensional approach, including technical and customer factors that aim to understand its impact on business factors

Figure 6- Conceptual Model of Investigation. Source: Self-elaboration.



V.III- Presenting the Hypotheses of this Investigation

The hypotheses of this study were already mentioned throughout chapters III and IV. In table number four and five one can categorize the different hypotheses through the analysis of the literature review.

Table 4- Summary of the Hypotheses to the Antecedents of CRM usage. Source: Self-elaboration.

Hypotheses inherent to the antecedents of CRM
H1: Technological Orientation positively affects CRM usage.
H2: Platform Flexibility positively affects CRM usage.
H3: Customer Information management positively affects CRM usage
H4: Customer Orientation positively affects CRM usage

Table 5- Summary of the Hypotheses to the Consequents of CRM usage. Source: Self-elaboration.

Hypotheses inherent to the consequents of CRM
H5: CRM usage positively affects the Overall Firm Performance.
H6: CRM usage positively affects Sales Process Effectiveness.
H7: CRM usage positively affects Market Sensing capability.

V.IV- Conclusion

The proposed model encompasses the test of seven hypotheses of investigation segmented in antecedents and consequents according to the suggestions of the literature review. In technical factors, the variable of technological orientation aims to understand the degree to which companies are open to technological changes in their processes and activities and the variable platform flexibility aims to understand the degree to which the platforms used by corporations are malleable and able to integrate with other stakeholders. It refers to the capabilities of integrating systems that guides the functionalities of CRM. In customer factors, a combination of IT and Business

management literature combines customer information management and customer orientation respectively to provide a broader spectrum to this research.

Overall Firm Performance, Sales Process Effectiveness and Market Sensing Capabilities are variables chosen under the business factors scope that will determine the success of CRM usage on business performance. Aspects such as dimension of the company, in terms of number of employees, years, billing amount and markets in which it operates are considered controlling variables in this study.

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Chapter VI- Investigation Methodology

VI.I- Introduction

The main objectives of this research are to 1) assess the main elements to the construction of a successful CRM strategy; 2) expose the behaviours and strategies a company should adopt to build an effective and efficient CRM strategy and 3) understand the impacts CRM usage has on business performance. By doing so, it was necessary to adopt a digital research approach that aimed to collect answers from professionals working with CRM across all types of markets to explore the dimensions already presented and examine its contributions. To examine and understand the data, the questionnaire of multiple choice was developed based on the steps established by A.Aaker et al., (2013), according to Table number six. In order to do an appropriate analysis and observe the obtained results, the data that does not belong to the sample of interest for this study was excluded.

Table 6- Questionnaire Construction. Source: Adapted from A. Aaker et al., (2013).

Stage	Steps
Planning what to measure	Decide the research issue of the questionnaire. Get additional information on the research issue from secondary sources and exploratory research. Decide on what is to be asked according to the research issue.
Formatting the questionnaire	Determine the content of each question. Decide on the format and scale of each type of question.
Questionnaire wording	Determine how the question is going to be worded. Confirm the easiness to understand the questions by the respondents.
Layout	Establish the order of the questions. Group the questions to be studied.
Pretesting and Correction of problems	Read the entire questionnaire to check if it makes sense and it measures what it is supposed to measure. Check for errors in the questionnaire. Pretest the questionnaire. Correct the problems.

VI.II- Methodology to Collect Data

For this research, a literature review was carried out in order to quantitatively identify the fundamental metrics pointed out by the literature in the evaluation of CRM impacting business performance. The literature review covers a spectrum of twenty-five years (from 1996 to 2021), with special emphasis on the last six years of study (2016 to 2021) and intends to compose a consolidated approach of the interconnected relations between CRM utilization and business performance in today's businesses. The main objective of this study is to develop and extend the RBV theory for the development of CRM capabilities. In doing so, new constructs were developed and adapted, through a bibliographic review in order to gather preliminary CRM constructs. In the second part, a model was created based on previous studies with the intent to create and explore the underlying dimensions and examine the influence of CRM resources and capabilities on today's companies.

For the investigation itself, the quantitative method survey with a positive approach was used. The choice is made with the purpose of measuring general laws in order to be empirically tested and reproduced in future studies (Hunt, 1991). The positivist approach is expressed in several studies in the marketing field, and some of the benefits are that allows to develop methods of statistical analysis (Sauerbronn et al., 2012). Marconi and Lakatos (2012) also express the benefits this approach brings such as time saving, large data, large demographic, anonymous respondents, less risk of distortion of data interpretation, and so on. In terms of epistemology, the focus of this research is testing facts or regularities that are observable and measurable in order to be observed and measured with credibility with significant amounts of data (Alharahsheh et al., 2020).

The attached questionnaire (attachment I) was open for responses from January 30th to June 18th on the Google Forms platform and was available at the following link: https://docs.google.com/forms/d/e/1FAIpQLSd7USwNd3sGSDz2PVVKa0wxIeR4Nx1zNYREW7DABvSkG_Lc1g/closedform.

The choice to collect data in an online matter was to obtain a relevant number of respondents compatible with the sample at study and to design a cohesive statistical data analysis formulated from quantitative data. The impossibility of physical encounters derived from the Covid-19 pandemic, contributed even further for the collection of data through digital means. Thus, the link with the invitation to fill out the questionnaire was

sent to various companies across the globe, and it was also distributed through various social networks and groups related to technology, sales and marketing.

VI.III- Population Selection and Sample Collection

The data for this study was extracted from responses from professionals working with CRM platforms in companies serving in any market. Strategically, two types of companies were contacted to answer the questionnaire. On one hand, technological companies were approached since they would be more likely to be in a position to answer this questionnaire, since they would be more likely to use CRM. On the other, scale-up companies were also approached as their employees would be better equipped to understand the differences before and after his or her companies adopted CRM. In order to obtain a representative sample, the questionnaire was distributed in CRM, Sales, Customer Service, Customer Support and Marketing groups in social media platforms such as Reddit, Facebook and LinkedIn. The contact with professionals that would be able to answer this questionnaire was also made via e-mail, to departments of companies that would kindly pass the questionnaire to the professionals or would provide the contact information of those professionals.

The measurement items of theoretical constructs were answered by the company's marketing, sales, business development and customer departments, as well as their managers. With that, it is reasonable to expect that the informants are able to offer a strong collaboration to this investigation.

For this research, it is estimated that the questionnaire was exposed to more than three million members of CRM, customer support, customer service, sales and marketing groups from the different aforementioned social media channels. The global answering rate is 7.23%, only considering the 3000 companies contacted, but considering only the valid questionnaires it is 6.97%. It is possible to deduct some difficulties of respondents to answer this questionnaire since a very specific sample of professionals using CRM on a daily basis is required. Table number seven summarizes the adherence and total description of the sample. The detailed characterization of the sample can be found in the next topic.

Table 7- Sample Description. Source: Self-elaboration.

Sample	Absolute Frequency	Relative Frequency
Questionnaires sent online	3000	100%
Total questionnaires answered	217	7.23%
Questionnaires withdrawn	8	0.26%
Questionnaires included in the sample	209	6.97%

VI.IV- Sample Characterization

As one can observe by table number eight, of the 209 respondents included in the sample for this study, 51.2% were Male, 44.01% Female and 4.79% did not share the gender. Although not a significant difference between the genders who have answered this questionnaire, there is a bigger proportion of respondents who are male. This may occur, due to the fact that Facebook, LinkedIn and Reddit are predominantly male social media channels. As aforementioned, these social media channels were chosen as one of the vehicles to reach potential respondents. Therefore, the male population is slightly more represented in this questionnaire.

Other important observation may be the fact that almost half the respondents have ages comprehended between twenty-five and thirty-four years old. This can be classified as a young age in terms of professional careers. Once again, one can speculate that this happened due to the fact that the aforementioned social media channels were used to reach professionals who work with CRM, and these social media channels attract a younger population.

Surprisingly, the majority of professionals who answered this questionnaire work for large corporations. One would expect that smaller companies would be more open to part-take in this study, however, data shows that 38.75% of respondents work for an organization with more than two thousand employees and 34.92% are well established in the market, being over twenty years old.

Finally, it is fair to state that there is an even representation of the different continents of the globe, with Africa and Oceania slightly behind the rest. Since many

companies operate in more than one market the sum of every market exceeds the number of respondents, that is why the sum of the relative frequency is greater than 100%.

Table 8- Sociodemographic Characterization of Respondents and Company Profile.
Source: Self-elaboration.

	Absolute Frequency	Relative Frequency
Gender		
Feminine	92	44.01%
Masculine	107	51.2%
Prefer Not to Disclose	10	4.79%
Education Level		
Highschool Degree	7	3.34%
Bachelor's Degree	118	56.45%
Master's Degree	83	39.71%
PhD	1	0.47%
Age		
Between 18 and 24 years old	15	7.17%
Between 25 and 34 years old	104	49.76%
Between 35 and 44 years old	69	33.01%
Between 45 and 54 years old	15	7.17%
More than 54 years old	6	2.87%
Size of the Company (N° Employees)		
Between 1 and 5 Employees	7	3.34%
Between 6 and 20 Employees	22	10.52%
Between 21 and 50 Employees	38	18.18%
Between 51 and 100 Employees	14	6.69%
Between 101 and 500 Employees	35	16.74%
Between 501 and 2000 Employees	12	5.74%
More than 2000 Employees	81	38.75%
Age of the Company		
Between 0 and 2 years	12	5.74%
Between 2 and 5 years	35	16.74%
Between 5 and 10 years	44	21.05%
Between 10 and 20 years	45	21.53%
More than 20 years	73	34.92%
Markets where the Company Operates		
Africa	91	43.54%
Asia	121	57.89%
Europe	155	74.16%
North America	153	74.2%
Oceania	75	35.88%
South America	137	65.55%
N° of Markets the Company Operates in		
1	57	27.27%
2	28	13.39%
3	20	9.56%
4	25	11.96%
5	11	5.26%
6	68	32.53%

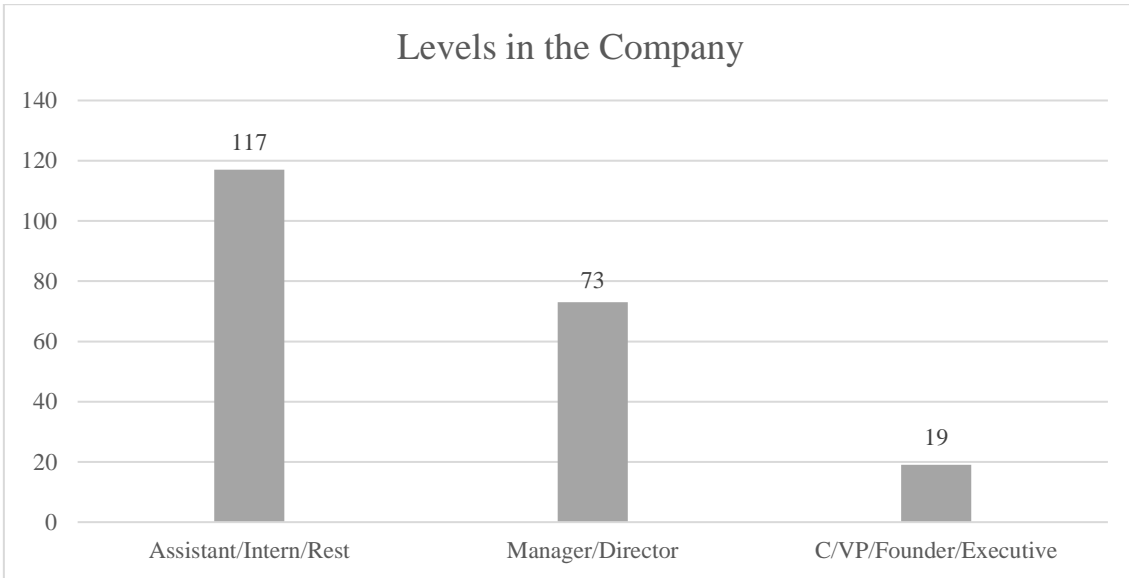


Figure 7- Position Levels Respondents have in the Companies. Source: Self-elaboration.

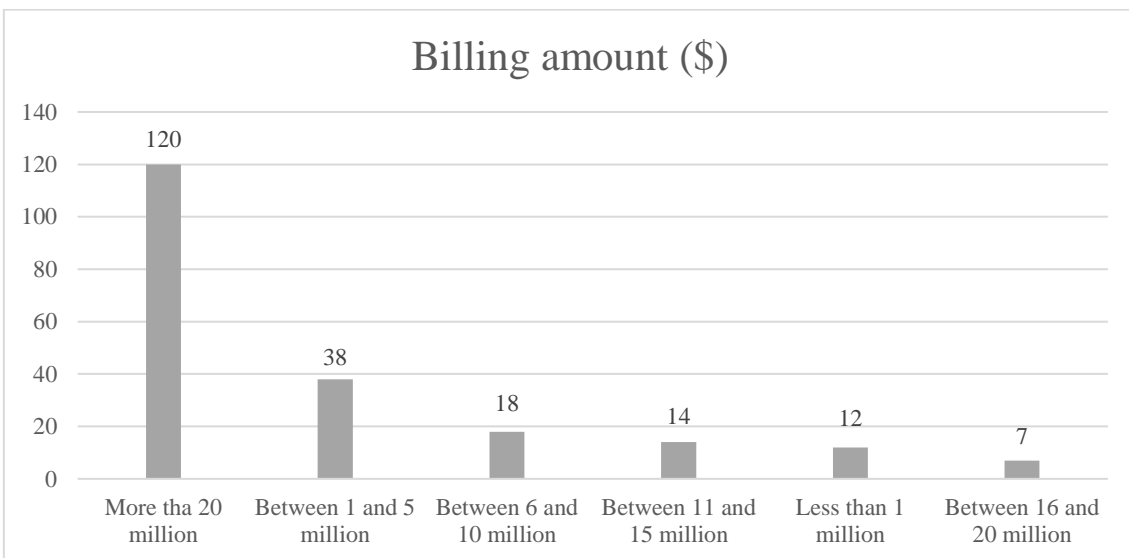


Figure 8- Billing Amount (\$) of the Companies. Source: Self-elaboration.

Figures number seven and eight summarize the positions respondents have in the company and what is the billing amount per year in U.S Dollars.

Concerning figure eight, respondents' positions were combined in three different groups. Group one with the name "Assistant/Intern/Rest" is made by individuals who, supposedly, are not responsible for other people in the organization. Positions such as Customer Support Associate; Customer Support Representative; Analyst; Business Development Representative, Sales Representative; Front Desk; etc. were chosen to be

inserted in this group, which makes 55.98% of the total sample. Group two called “Manager/Director” constitutes the individuals who have positions such as Project Manager; Marketing Manager; Commercial Director; Sales Manager; etc. These individuals were grouped together as they hold positions with different degrees of responsibility in their companies and they make 25.17% of the sample. Finally, group three called “C/VP/Founder/Executive” corresponds to the individuals who hold positions at the C-Level, namely Chief Executive Officer, Chief Marketing Officer, Chief Technology Officer, etc; Vice-Presidents; Founders and Co-Founders and Executives. These individuals were grouped together since they are at the highest levels of responsibilities in their companies. They have the smallest representation of all the groups in this sample with 6.55%.

In regard to figure number nine, one can observe the billing amount these companies have per year in U.S Dollars. More than half of the respondents, 57.41%, work for organizations that invoice more than 20 million U.S Dollars per year. The second highest response rate comes from individuals that work for organizations that invoice between 1 and 5 million U.S Dollars per year. These represent 13.1 % of the total sample. There is no significant difference in the number of respondents who work for companies that invoice between 6 and 10 million, 11 and 15 million and less than 1 million. These three groups represent 15.17 % of the total sample. At last, with 2.41% of representation in this study comes individuals who work for organizations that invoice between 16 and 20 million U.S Dollars per year.

VI.V- Descriptive Analyses

This subchapter aims to analyse the respondents answers and present data that is unique to this investigation. Therefore, the perceived CRM usage benefits will be compared in regard to the respondent’s gender, age, education level and level in the company. Moreover, this subchapter intends to identify the differences of the perceived CRM usage benefits in regard to the company’s size, billing amount, the type of industry and the number of markets in which the company operates. One should consider that statistically speaking, sample sizes when $N \geq 25$ are considered good sample sizes (Jenkins & Quintana-Ascencio, 2020). Therefore, for this analysis only samples sizes equal or

bigger than 25 should be considered representative enough. Nonetheless, the following subchapter will put into evidence some aspects when placing the individuals within different groups.

VI.V.I- Age

Table 9- Mean Values for Each Variable by Age Group. Self-elaboration.

	18-24	25-34	35-44	45-54	more than 54
TechOri	5.506	5.855	6.26	6.453	6
PlaFlex	5.311	5.121	5.294	5.622	5.555
CIM	6.05	5.774	5.894	6.466	5.375
CustOri	5.916	5.81	6.036	6.483	5.583
CRMusa	6.011	5.923	6.053	5.766	6.388
OFP	5.786	5.453	5.515	5.693	5.166
SPE	5.911	5.685	6.014	6.155	5.5
MSC	5.916	5.411	5.51	5.95	4.125

Table number nine presents the mean responses for each variable according to each age gap. In the group of individuals with ages between 18 and 24 years old, the CRMusa and CIM variables present the highest values. One can argue that this age group is not as well represented as other groups since, with 15 respondents, it accounts for 7.17% of the total sample. However, the age group between 45 and 54 years old has the same number of respondents and the CRMusa variable has, in fact, the second lowest mean value for this group age. For them, the highest values are attributed to the TechOri, CIM, CustOri and SPE variables therefore, clearly showing a difference in perceptions between these age groups. The age group with the highest number of respondents belongs to the individuals with ages between 25 and 34 years old. For them, no variable has a mean value above 6, but CRMusa, CustOri and TechOri are quite close, revealing this age group understands their companies to be better in these variables. The age group between 35 and 44 years old, with 33.01% of respondents of the total sample, attributed the highest values for the TechOri, CustOri, CRMusa and SPE variables. Finally, the age group with more than 54 years old, indicates a higher level to the TechOri and CRMusa variables. These two variables combined perhaps support the argument that a significant number of professionals see CRM as a mere technological tool and fail to recognize the value it can bring if other processes are put in place in the organizations.

VI.V.II- Gender

According to table number ten, one can state that there are no significant differences between the answers provided by Female and Male respondents. Female respondents generally attributed higher values to the CRMusa variable than the Male respondents and Male respondents attributed higher values to the TechOri variable than Female respondents. Moreover, Female respondents assign higher values to exactly half of the variables at study, PlaFlex, CRMusa, SPE and MSC and Male respondents to the rest of the variables, TechOri, CIM, CustOri and OFP. As aforementioned, only sample sizes greater than 25 are considered good sample sizes. For the group of respondents who chose to not disclose the gender, the sample is of 10 respondents, therefore not making a good sample size to analyse. Moreover, those who chose not to disclose the gender would fall under one of the other categories and perhaps slightly changing some values.

Table 10- Mean Values for Each Variable by Gender. Source: Self-elaboration.

	Female	Male	Prefer not to disclose
TechOri	5.963	6.044	6.1
PlaFlex	5.326	5.186	5.033
CIM	5.831	5.892	6.025
CustOri	5.885	5.943	6.275
CRMusa	6.045	5.911	6
OFP	5.476	5.555	5.28
SPE	5.88	5.85	5.333
MSC	5.6	5.441	4.825

VI.V.III- Education Level

According to table number eleven, professionals with the Highschool Degree are the group who express a higher level of agreement with the statements of all the other groups in this category. Five variables, namely TechOri, CIM, CustOri, CRMusa and SPE, have higher mean values than 6. It is noteworthy however that this population is only represented by 7 respondents, therefore accounting for less than 4% of the population sample. For the respondents with a Bachelor's Degree, the only variable who surpasses the mean value of 6 is CustOri. However, it is evident that other variables, such as TechOri, CRMusa, OFP and SPE are very close. In spite of accounting for 56.45% of the respondents in this category, Bachelor Degree holders' responses are similar to

Highschool Degree ones, with the exception of the OFP variable which indicates a higher level of importance for Bachelor Degree respondents than for Highschool Degree ones. The population with Master's Degree attributed a mean value above 6 to the TechOri and CRMusa variables, indicating that in their opinion, only these two variables, of the eight variables at study, are being well managed.

Lastly, since there was only one respondent with a PhD, one should not withdraw any conclusions since this represents the opinion of one individual and not necessarily the opinion of the group.

Table 11- Mean Values for Each Variable by Education Level. Source: Self-elaboration.

	Highschool Degree	Bachelor's Degree	Master's Degree	PhD
TechOri	6.457	5.935	6.078	6
PlaFlex	5.952	5.31	5.075	6
CIM	6.678	5.777	5.922	7
CustOri	6.607	6.004	5.779	6
CRMusa	6.261	5.9	6.053	6
OFP	5.572	5.942	5.373	6
SPE	6.285	5.923	5.682	6
MSC	5.607	5.446	5.502	7

VI.V.IV- Size of the Company

According to table number twelve, the respondents who work for small companies, in terms of their number of employees, generally agree with the statements presented to them. With the exception of the MSC variable, this group of respondents, on average attributed values over 6 to all the other variables. The other group of respondents who agree as much with the statements is at the other end of the spectrum, being the respondents who work for large corporations. For the latter, with the exception of the OFP variable, which nonetheless has a significantly high mean value, all the variables present an average value of 6. This seems to indicate that both types of organizations, small and big, are managing well the variables at study. But, one must consider table number eight, and realize that only 7 respondents work for companies that have between

1 and 5 employees, while 81 respondents work for organizations with more than 2000 employees, making the data for the companies with more than 2000 employees a lot more reliable.

The responses of the individuals who work for companies that have between 101 and 500 employees, are very similar to the ones just analysed, especially with the answers of respondents who work for large corporations. For this group, which with 35 respondents accounts for 16.74% of the total sample, the PlaFlex and OFP variables do not have a mean value superior to 6.

The lowest mean values, across most variables, with the TechOri variable being the exception, belongs to the respondents who work for companies that have between 51 and 100 employees. For these respondents, the PlaFlex, CIM, OFP, SPE and MSC variables have a mean value below 4 points, therefore indicating that respondents mostly expressed disagreement, rather agreement with the statements.

Table 12- Mean Values for Each Variable by Size of the Company (number of employees). Source: Self-elaboration.

	1-5	6-20	21-50	51-100	101-500	501-2000	2000+
TechOri	6.742	4.618	6.005	4.785	6.331	4.954	6.639
PlaFlex	6.476	4.893	4.166	3.571	5.59	4.651	6
CIM	6.714	5.068	5.618	3.642	6.564	4.727	6.456
CustOri	6.392	5.318	5.822	4.125	6.3	5.17	6.484
CRMusa	6.833	5.734	5.916	4.678	6.419	5.507	6.072
OFP	6.028	4.818	5.731	3.914	5.771	4.863	5.866
SPE	6.666	5.030	5.921	3.928	6.323	5.151	6.234
MSC	5.535	4.625	5.421	3.339	6.085	4.897	6.04

VI.V.V- Age of the Company

Glancing table number thirteen, it seems that the older the organization is, the better the variables at study are being managed. This assessment would not be completely wrong, since data demonstrates that companies between 10 and 20 years old and companies with more than 20 years old are the ones who have a higher number of

variables with an average mean value above 6. For these groups, it actually accounts for five of the eight variables at study, with other two variables being very close. For the group of respondents who work for organizations that have between 10 and 20 years old the variables averaging a mean value superior to 6 are the TechOri, CIM, CustOri, CRMusa and SPE variables, with MSC very close. For the respondents who work for organizations with more than 20 years old, the variables that present a mean value above 6 are TechOri, CIM, Cust Ori, SPE and MSC, with CRMusa being very close.

The reason why one is not able to state that the older the organization is the better the variables at study are being managed is because, once again, the group in the middle of the analysed spectrum seems to be the outlier. The respondents who work in organizations with ages between 5 and 10 years present the lowest mean values for all variables. In this case the number of responses might not be an issue since with 44 respondents, the sample is statistically significant enough.

Analysing the rest of the groups, one could theorise again that the age of the company is an important factor to well manage the variables at study. For the group between 2 and 5 years, four variables present mean values higher than 6. Those variables are TechOri, CRMusa, OFP and SPE. In the case of companies with ages comprehended between 0 and 2 years old, only the CIM and CustOri variables have mean values above 6 and the SPE variable is very close to that. These two groups, when compared to the group between 5 and 10 years old, present very interesting data because it seems that these two younger groups are well managing these variables. On one hand, the data from the 0 and 2 years old group indicates a better management of the Customer Related Factors. This makes sense if one considers that younger organizations might not possess as much capital as older companies, therefore compensating in this area where capital investment is not so extensively required. The data from the 2 and 5 years old presents the hypothesis that these scale-up companies invest in Technology and CRM to drive profits and growth. On the other hand, this might indicate that individuals are not quite aware, and have a false sense of good management of these variables and are in for a rude awakening in a few years. This theory might explain the results obtained for the group between 5 and 10 years old.

Table 13- Mean Values for Each Variable by Age of the Company. Source: Self-elaboration.

	0-2	2-5	5-10	10-20	20+
TechOri	5.133	6.034	4.768	6.604	6.528
PlaFlex	4.861	4.657	4.462	5.762	5.73
CIM	6.229	5.435	4.863	6.422	6.291
CustOri	6.208	5.785	4.965	6.266	6.339
CRMusa	5.805	6.114	5.556	6.292	5.99
OFP	5.5	6.017	4.359	5.653	5.865
SPE	5.944	6.323	4.636	6.140	6.127
MSC	5.312	5.278	4.329	5.900	6.044

VI.V.VI- Levels in the Company

When analysing the respondents answers by levels they have in their companies, one can observe that the higher the level is, the better the perceived management of these variables is. According to table number fourteen, the lowest level group, Assistant/Intern/Rest, do not have any variables that has a mean value of 6. The only variable that comes close is CustOri. This is a significant analysis since this group has 117 respondents, therefore accounting for 55.98% of the total sample. The Manager/Director group, with 73 respondents and accounting for 34.92% of the total sample, present overall higher values for the variables, with emphasis for the TechOri and CRMusa variables, which both have a mean value superior to 6. The SPE variable comes extremely close to that figure. C/VP/Founder/Executive group present very interesting responses. On one hand, they present three variables above 6, more than the other two groups, and the values for those variables are the highest than all the other groups. Those variables are TechOri, Cim and CRMusa. The other variables present some of the lowest mean values across all three groups.

Table 14- Mean Values for Each Variable by Levels in the Company. Source: Self-elaboration.

	Assistant/Intern/Rest	Manager/Director	C/VP/Founder/Executive
TechOri	5.851	6.18	6.347
Plaflex	5.162	5.392	5.140
CIM	5.826	5.876	6.131
CustOri	5.905	5.993	5.881
CRMusa	5.898	6.022	6.254
OFP	5.471	5.583	5.431
SPE	5.757	5.986	5.771
MSC	5.41	5.695	5.105

VI.V.VII- Billing amount (\$)

Table 15- Mean Values for Each Variable by Billing amount (\$). Source: Self-elaboration.

	-1 million	1-5 million	6-10 million	11-15 million	16-20 million	20+ million
TechOri	6.15	5.663	6.322	4.428	5.657	6.266
Plaflex	5.361	4.131	5.074	4.309	5.809	5.68
CIM	6.354	5.625	6.402	4.107	6.285	6.004
CustOri	6.125	5.815	6.430	4.946	5.571	6.014
CRMusa	6.305	5.662	6.074	5.535	4.738	6.148
OFP	5.633	5.421	5.977	4.642	5.085	5.576
SPE	6.111	5.57	6.37	4.738	5.285	5.977
MSC	5.312	5.467	5.472	3.839	4.928	5.729

As depicted in table number fifteen, the respondents who work for companies that invoice less than 1 million U.S Dollars per year share is highest means values for the variables TechOri, CIM, CustOri, CRMusa and SPE. The same variables present high mean values for the respondents who work for companies that invoice more than 20 million U.S Dollars per year and those who work for companies that invoice between 6 and 10 million Dollars per year. This analysis must contemplate the fact that, in this study,

the companies who invoice more than 20 million U.S Dollars per year is ten times more represented than the companies who invoice less than 1 million U.S Dollars per year and 6.6 more times represented than those who invoice between 6 and 10 million U.S Dollars per year.(as depicted in figure number eight). Therefore, one should consider the answers of those in the 20+ million dollar group as more reliable than the rest. The second most represented group in this category belongs to those who work in companies who invoice between 1 and 5 million U.S Dollars per year, with a total of 38 respondents. In this group no variable is above the 6 mean value, therefore, hypothetically showing that the higher the billing amount of the company is, the better these variables are being managed.

VI.V.VIII- Number of Markets

Table 16- Mean Values for Each Variable by Number of Markets. Source: Self-elaboration.

	1	2	3	4	5	6
TechOri	5.624	5.571	6.27	6.544	4.454	6.497
Plaflex	5.192	4.892	5.116	5.453	3.454	5.671
CIM	5.662	4.848	6.35	6.29	4.068	6.466
CustOri	5.903	5.223	5.5	6.72	4.5	6.323
CRMusa	5.891	6.005	5.875	5.886	5.590	6.154
OFP	5.185	5.578	5.680	6.192	4.163	5.661
SPE	5.602	5.392	6.033	6.293	4.424	6.225
MSC	5.228	4.553	5.775	5.87	3.75	6.128

Considering table number sixteen, one can state that the bigger the number of markets where one company operates, the better are the variables at study managed. With the exception of those companies who operate in 5 markets, which in fact accounts for 11 responses, therefore not being very statistically significant, there is an increment of mean values for all variables as the number of markets increments as well. For the companies who operate in only 1 market, no variables reach the mean value of 6. However, CustOri and CRMusa are quite close. In the case of companies that operate in 2 markets, CRMusa variable is above the mean value of 6. For the companies operating in 3 markets the number of variables above the mean value of 6 jumps to three variables. Those variables

are TechOri, CIM and SPE. However, one should consider the fact that this group is represented by 20 respondents. Statistically speaking, only samples of 25 or more respondents are considered good sample sizes. For the companies who operate in 4 markets, the mean values above 6 are assigned to the TechOri, CIM, CustOri, OFP and SPE variables. Lastly, the companies who operate in all the markets reveal a better management of biggest number of variables. For the respondents in this group, who account for 68 total answers, TechOri, CIM, CustOri, CRMusa, SPE and MSC variable have a mean value higher than 6.

VI.V.IX- Industry

Table 17- Mean Values for Each Variable by Industry. Source: Self-elaboration.

	E-Commerce	FinTech	Software	I.T.
TechOri	6.89	6.67	5.89	6.348
PlaFlex	5.969	5.607	5.861	5.692
CIM	6.34	6.25	6.091	6.32
CustOri	6.5	6.102	6.462	6.192
CRMusa	6.257	6.705	6.425	5.952
OFP	5.472	5.458	5.51	5.753
SPE	6.09	6.45	6.366	5.854
MSC	5.727	5.808	5.87	5.858

Table number seventeen presents the mean values for each variable according to the 4 industries with the most representation in this sample. One should, however, consider that the E-Commerce and FinTech industries have only 11 and 17 answers, respectively. Therefore, one should not consider this data as reliable as the data extracted from the Software and Information Technology industries, which have 31 and 39 respondents, respectively.

Something that is immediately observable is that this table has a significant number of variables that have mean values above 6. E-Commerce and FinTech each share 5 variables with mean values above 6, namely TechOri, CIM, CustOri, CRMusa and SPE. The E-commerce industry also puts PlaFlex as a variable that is being well managed, since it has a mean value close to 6.

Regarding the Software industry, one can assess that it shares the same variables with a mean value above 6 with the E-Commerce and FinTech industries. The only exception being that TechOri is not above 6, however it is very close.

Regarding the Information Technology industry, which is the industry with the best representation in this study, there are only three variables above the mean value of 6. TechOri, CIM and CustOri present mean values above 6 and CRMusa is quite close.

VI.VI- Elaboration of the Questionnaire

The questionnaire was created from seven different academic articles in order to collect metrics that would allow the evaluation of the technological factors, customer related factors and business factors. (Deshpandé, Farley, & Webster, 1993; Harrigan et al., 2010; Jayachandran et al., 2005; Morgan et al., 2009b; Powell & Dent-Micallef, 1997; Rodriguez & Jr., 2011; Zhu & Lin, 2019b). Through the Google platform Google Forms, the first part makes a brief presentation on the objectives of the study, as well as the time that the respondent should make available to complete the survey, which was calculated around five minutes. The informative part also emphasises that the data collected through the questionnaire is anonymous and confidential and all answers are obligatory. The second part of the questionnaire has thirty-four questions referring to the variables at study with options from 1 (Strongly Disagree) to 7(Strongly Agree), according to the seven-point Likert scale. The third part of the questionnaire asks the respondent to provide demographic information, namely the age, gender and education level he or she holds. The fourth and final part, asked the respondent to provide information about the company, namely its size in terms of the number of employees, age of the company in years, position in the company, the sector of the company, the billing amount per year and currency used and the markets where the company operates. All questions were grouped according to the conceptual research model proposed in chapter number five. In attachment I it is possible to see the questionnaire.

VI.VI.I- Questionnaire Structure

The seven-point Likert scale was used to measure the topics concerning Technological Orientation, Platform Flexibility, Customer Information Management, Customer Orientation, CRM usage, Overall Firm Performance, Sales Process

Effectiveness and Market Sensing Capability. The respondents were initially asked to classify thirty-four statements according to their level of concordance. They could classify the statements as 1 (Strongly disagree), 2 (Disagree), 3 (Somewhat disagree), 4 (Nor disagree, nor agree), 5 (Somewhat agree), 6 (Agree) and 7 (Strongly agree). After the first part, respondents were asked to provide demographic information namely, their age, gender and education level. The final part, respondents were asked to provide company information, specifically the size of the company, in terms of the number of employees, the age of the company, the position each respondent holds on the company, the sector in which the company operates, the billing amount of the company per year and the currency used and lastly, the markets where the company operates.

VI.VI.II- Format and Terminology of the Statements

The initial questionnaire was developed having IT, Customer centric and Performance metrics as a basis. The applied questionnaire has forty-four obligatory questions, covering all variables at study and characterizing the sample. The questions were verified and adapted to this research with the help of Doctor Arnaldo Coelho, in order for the respondents to understand the proposed statements. The questionnaire was tested by fourteen respondents that were asked to provide feedback and suggestions to improve the quality of the questionnaire. The final questionnaire was modified according to the feedback and suggestions provided, which will be further detailed in the pre-test sub-chapter.

VI.VI.III- Measurements

The statistical analysis was conducted with the Python version 3.8.5, and the Pandas 1.2.4 and Factor-analyzer 0.3.2 packages. The answers vary from 1 (Strongly disagree) to 7 (Strongly agree) and they were grouped in 8 categories, as follows:

1. Technical Resources (eight statements):
 - a. Technological Orientation (five statements),
 - b. Platform Flexibility (three statements).
2. Relational Factors (eight statements):
 - a. Customer Information Management (four statements),
 - b. Customer orientation (four statements).
3. CRM usage (six statements).

4. Performance Factors (twelve statements):
 - a. Overall Firm Performance (five statements),
 - b. Sales Process Effectiveness (three statements),
 - c. Market Sensing Capabilities (four statements).

The rest of the questions refer to the categorization of the respondents, in terms of demographic data and company categorization.

VI.VI.IV- Variable Operationalization

In order for the variables to be operationalized, measurements were extracted from scientific articles that have researched about this topic. The decision to elaborate this dissertation in English is due to the fact that the researched articles are written in English, therefore avoiding the need to translate every article and the fact that this dissertation can be later consulted by a broader number of people within this community. As previously mentioned, the seven-point Likert scale was used to measure the variables at study. To measure the variables, metrics indicated in previous academic publications were used, with their due tests performed. Tables number eighteen, nineteen, twenty and twenty-one present all statements made to measure the variables at study.

Table 18- Measurements to evaluate the Antecedents of CRM usage (Technical Factors). Source: Self-elaboration.

Variable	Author(s)	Items
Technological Orientation (TechOri)	Powell & Dent-Micallef, 1997	TechOri1: Our company has sufficient technology to operate a CRM system. TechOri2: Our company has sufficient hardware resources to support a CRM system. TechOri3: Our company has sufficient software resources to support a CRM system. TechOri4: Our company has a database technology that is compatible with CRM systems. TechOri5: Our company has an Integrated System application that is compatible with CRM systems.

Platform Flexibility (PlaFlex)	Zhu & Lin, 2019	PlaFlex1: Our CRM platform supports connections between our systems and our clients/partners. PlaFlex2: Our CRM platform can easily transmit, integrate and process data from our partners. PlaFlex3: Our CRM platform supports employee participation in e-business activities such as a request for market and customer information.
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Table 19- Metrics used to Evaluate the Antecedents of CRM usage (Customer Related Factors). Source: Self-elaboration.

Variable	Author(s)	Items
Customer Information Management (CIM)	Adapted from Harrigan et al., 2010	CIM1: Our database is a key business tool. CIM2: Electronic information on customers complements our other knowledge. CIM3: Electronic information is more easily managed. CIM4: Electronic information on customers is central to our decision making
Customer Orientation (CustOri)	Adapted from Jayachandran et al., 2005	CustOri1: In our organization, retaining customers is considered to be a top priority. CustOri2: Our employees are encouraged to focus on customer relationships. CustOri3: In our organization, customer relationships are considered to be a valuable asset. CustOri4: Our senior management emphasizes the importance of customer relationships.

Table 20- Metrics used to Evaluate CRM usage. Source: Self-elaboration

Variable	Author(s)	Items
CRM usage	Adapted from Morgan et al., 2009	CRMusa1: We extensively use CRM to perform our job. CRMusa2: We are frequent users of CRM. CRMusa3: We fully use the capabilities of CRM. CRMusa4: We fully integrate the CRM application in our sales processes. CRMusa5: We consistently use CRM to track and record sales activities. CRMusa6: We extensively use CRM technology to perform our job.

Table 21- Metrics used to Evaluate the Consequents of CRM usage (Business Factors).
Source: Self-elaboration.

Variable	Author(s)	Items
Overall Firm Performance	Adapted from Deshpandé, Farley, & Jr., 1993	OFP1: Our company has become more successful after adopting a CRM system. OFP2: Our company has experienced a greater market share after adopting the CRM system. OFP3: Our company has experienced fast growth after adopting the CRM system. OFP4: Our company has become more profitable after adopting the CRM system. OFP5: Our company has become more innovative after adopting the CRM system.
Sales Process Effectiveness	Adapted from Rodriguez & Jr., 2011	SPE1: Utilization of the CRM system improves our closing rates. SPE2: Utilization of the CRM system improves our customer retention. SPE3: Utilization of the CRM system enables us to analyse reasons for won and lost opportunities.
Market Sensing Capability	Adapted from Morgan et al., 2009	MSC1: We can learn about customer needs and desires, and how to fulfil them. MSC2: We can get information about channel members both in distribution and communication. MSC3: We can identify and understand market trends. MSC4: We can learn and understand the changing market.

VI.VII- Pre-test Application

The application of a pre-test, as Faux, (2010) suggests, has the ability to strengthening the questionnaire and provide a greater level of reliability. This is an extremely important part of the application of the questionnaire since it gives the opportunity to adjust possible problems, realize if respondents understand the statements and correct spelling errors. Literature points out the importance of sending the questionnaire to a small number of respondents in order to perform a pre-test (Antonio, 2011). Lakatos & Marconi (2003) pinpoint that the objective of the pre-test is to ascertain whether the questionnaire developed is free of errors, misinterpretations and if it can guarantee reliable results. With this aim, the first questionnaire was sent to fourteen

individuals, and it was asked of them to provide feedback about the questionnaire. Based on their feedback, spelling corrections were made and the average response time to complete the questionnaire was estimated in 5 minutes.

VI.VIII- Conclusion of the Methodology

Table number twenty-two, inspired in the study conducted by Negrão (2018) provides a summary of the methodology used in this dissertation.

Table 22- Description of the Investigation Methodology. Source: Adapted from Negrão (2018).

Important Methodology Aspects	Description
Research Paradigm	Positivist
Approach of the investigation	Deductive
Population at study	Marketing, Sales, Customer Support and Managers who use CRM.
Sample choice method	Stratified random sampling of professionals who use CRM.
Phenomena at study	Impact of CRM on performance
Type of study	Transversal
Type of data	Primary
Data collection method	Survey by questionnaire
Location	Africa, Asia, Europe, North America, Oceania and South America
Data collection period	January 2021/ June 2021
Sample dimension	209 professionals

Chapter VII- Statistical Analysis of the Data

VII.I- Exploratory Factor Analysis

This is a cross-sectional study since it is an analysis of data collected over a determined period of time, without the study variables changing throughout the research. Thus, for the seven hypotheses to be tested, it is necessary to measure each variable proposed by the study (Field, 2009).

Damásio (2012) suggests that Exploratory Factor Analysis (EFA) is a set of techniques that aim to find the underlying structure in a data matrix and determine the number and nature of latent variables (factors) that best represent a set of observed variables. The author points out that, as an assumption of this analysis, it must be observed whether the database is subject to factorization and, for this, there are two evaluation methods that are most used: the Kaiser-Meyer-Olkin (KMO) criterion and Bartlett's Test of Sphericity. According to the author, the KMO is a statistical test that suggests the proportion of variance of items that may be explained by a latent variable, and its value may vary from zero to one. The author mentions that values equal to or close to zero indicate that the sum of the partial correlations of the items evaluated is quite high in relation to the sum of the total correlations and, possibly, such analysis will be inappropriate. Table number twenty-three summarizes the criteria for the KMO evaluation.

Table 23- KMO Evaluation Method. Source: Damásio (2012).

KMO	Factorial Analysis
1 to 0.9	Excellent
0.8 to 0.9	Good
0.7 to 0.8	Acceptable
0.6 to 0.7	Questionable
0.5 to 0.6	Bad
<0.5	Unacceptable

For Damásio (2012), Bartlett's Sphericity Test assesses to what extent the (co)variance matrix is identical to an identity matrix (the elements of the main diagonal

have a value equal to one, and the other elements of the matrix are approximately zero, that is, they do not show correlations with each other). According to the author, through this test it is also possible to assess the overall significance of all correlations in a data matrix, and in addition, values from the Bartlett Sphericity Test with significance levels $p < 0.05$ indicate that the matrix is factorable, rejecting the null hypothesis that the data matrix is identical to an identity matrix. According to Field (2009), Bartlett's Sphericity Test, in addition to verifying whether the matrix is proportional to an identity matrix, tests whether the diagonal elements of the variance-covariance matrix are equal and if the off-diagonal elements are approximately zero. Also, according to the author, if the population correlation matrix resembles the identity matrix, it means that each variable is poorly correlated with all other variables (that is, all correlation coefficients are close to zero), which would mean that all variables are perfectly independent (all correlation coefficients would be zero).

According to the literature, in the next step of EFA, the extraction of factors must be carried out. Thus, the main component analysis extraction technique was chosen, which, according to Field (2009), is used to determine which linear components exist within the data and how a particular variable can contribute to that component. According to Lisboa et al. (2012), main component analysis aims to explain the structure of variances and covariances through linear combinations of the original variables. According to the authors, factor analysis can be seen as an extension of principal component analysis since both can be seen as approximations to the covariance matrix. The authors state that in the analysis of principal components, it is assumed that all the variability of a variable must be used, while in the factor analysis, only the variability that a variable has in common with the other variables of the model is used. Finally, the Kaiser-Guttman criterion, better known as eigenvalue > 1 , was used. According to Damásio (2012), this criterion proposes a quick and objective assessment of the number of factors to be retained, that is, each retained factor has an eigenvalue which refers to the total variance explained by this factor. For the author, the total sum of eigenvalues is always equal to the number of items used in the analysis and, thus, a component with eigenvalue < 1 has a total explained variance smaller than a single item, therefore, only factors with eigenvalue > 1 are retained.

In addition to the tests mentioned above, the reliability analysis of the data was also performed. For Marôco & Garcia-Marques (2013), the reliability of a measure refers

to its ability to be consistent, and if a measurement instrument always gives the same results when applied to structurally equal targets, one can trust the meaning of measure and say that the measure is reliable. Damásio (2012) mentions that the calculation of the internal consistency index, using Cronbach's alpha, is the most used method in cross-sectional studies, when measurements are performed in a single moment. According to the author, this index assesses the degree to which the items in a data matrix are correlated with each other and is influenced both by the value of item correlations and by the number of items evaluated. The statistical teste was performed with the Python version 3.8.5 and the Pingouin 0.3.12 package. The guidelines for interpreting the index values suggest a range between 0 and 1, as shown in the table number twenty-four.

Table 24- Cronbach's Alpha Interpretation. Source: Damásio (2012).

Cronbach's alpha value	Scale consistency
>0.90	Excellent
>0.8	Good
>0.7	Acceptable
>0.6	Questionable
>0.5	Bad
<0.5	Unacceptable

From the exploratory factor analysis performed, the reliability of the data was verified according to the Cronbach's alpha. The results were favorable, since most variables are above 0.9, which indicates a good consistency of the items that make up the scales.

Furthermore, Field (2009) mentions that, on a reliable scale, all items must correlate with the total, and thus if any of these values are less than 0.25 it means that a specific item does not correlate very well with the entire scale. Therefore, on a reliable scale the correlation between items should be greater than 0.25. As depicted in table number fifteen, all correlation values are significantly higher than 0.25, therefore indicating a good correlation between items.

For the database to be factored, the adequacy test was performed. In this case the KMO index should be above 0.7. As it is possible to observe in table number fifteen the

variables PlaFlex and SPE present the lowest values of KMO, despite being above 0.7, making them acceptable. Variables CIM, CustOri, OFP and MSC are greater than 0.8 making them good, while CRMusa and TechOri are above 0.9, therefore having the classification of Excellent.

According to Bartlett's Test of Sphericity, all variables present significance equal to zero, therefore rejecting the null hypothesis. According to Marôco & Garcia-Marques (2014), EFA considers only the items that presented an explained variance or factorial weights above 0.6. Therefore, as all variables presented explained variance above 60%, no factor was extracted.

It is then concluded that the database is factorable, internally consistent, and reliable. Table number twenty-five with the final constitution of the variables can be seen below.

Table 25- Final Variables Constitution. Source: Self-elaboration.

Variable	Items	>0.25 Item Correlation	>0.8 Cronbach's Alpha	>0.7 KMO	Must= 0 Bartlett's Test	Must=1 Unidim.	>0.6 % Of Explained Variance
TechOri	TechOri1	0.887	0.982	0.91	0	1	91.6769
	TechOri2	0.949					
	TechOri3	0.942					
	TechOri4	0.907					
	TechOri5	0.899					
PlaFlex	PlaFlex1	0.936	0.959	0.762	0	1	88.7515
	PlaFlex2	0.915					
	PlaFlex3	0.812					
CIM	CIM1	0.856	0.966	0.849	0	1	87.7346
	CIM2	0.892					
	CIM3	0.912					
	CIM4	0.849					
CustOri	CustOri1	0.914	0.982	0.886	0	1	93.4833
	CustOri2	0.936					
	CustOri3	0.959					
	CustOri4	0.930					
CRMusa	CRMusa1	0.735	0.946	0.905	0	1	74.8728
	CRMusa2	0.665					
	CRMusa3	0.683					
	CRMusa4	0.821					
	CRMusa5	0.727					
	CRMusa6	0.862					
OFP	OFP1	0.815	0.968	0.899	0	1	85.8731
	OFP2	0.880					
	OFP3	0.888					
	OFP4	0.881					
	OFP5	0.830					
SPE	SPE1	0.862	0.962	0.77	0	1	89.4715
	SPE2	0.943					
	SPE3	0.880					
MSC	MSC1	0.830	0.968	0.867	0	1	88.4657
	MSC2	0.860					
	MSC3	0.903					
	MSC4	0.945					

VII.II- Confirmatory Factor Analyses

After all tests performed at the EFA were considered positive, therefore it was possible to continue the analysis of structural equations using the Python 3.8.5 version and the Semopy 2.2.2 package.

The test of hypotheses about latent variable structure and their relationships with one another requires considerable complexity that can be measured by the Confirmatory Factor Analysis (CFA) (Field, 2009). This analysis technique is required when the model is built *a priori* and then there is an assessment of how well it fits the data, based on the resulting fit statistics, in order to test the theory (McGrill & Dombrowski, 2017).

Marôco & Garcia-Marques (2014) state that Structural Equation Analysis (SEA) is a technique used to test the validity of theoretical models that define hypothetical relationships between variables. According to the authors, these relationships are represented by parameters that indicate the magnitude of the effect that the independent variables have on other dependent variables, in a set of hypotheses concerning the associations between the variables in the model and the measurement errors. The authors further state that SEA is a combination of techniques: on one hand factor analysis, which defines a measurement model that operationalizes latent variables or constructs; on the other linear regression, which establishes, in the structural model the relationship between the different variables at study. The authors mention that the CFA is used to assess the quality of the theoretical measurement model and the correlational structure observed between the items, with the CFA model being equal to the measurement model of structural equations model.

Similarly, Lisboa et al., (2012) defend that the Structural Equations Model (SEM) consists of the measurement model and the structural model. According to the authors, the measurement model focuses on the quantification of latent variables, which cannot be observed or measured directly and are inferred through indicators (observable variables); in the structural model, the causal relationships between latent variables are specified.

Hair, J.F. et al., (2014) state the measurement theories are represented by visual diagrams called trajectory diagrams, which show the links between specific variables and their associated items, along with the relationships between the constructs. The authors point out that the difference between EFA and CFA is that EFA produces a load for each

variable in each factor, but in CFA there are no cross loads. Figure number nine displays the model in a graphic manner.

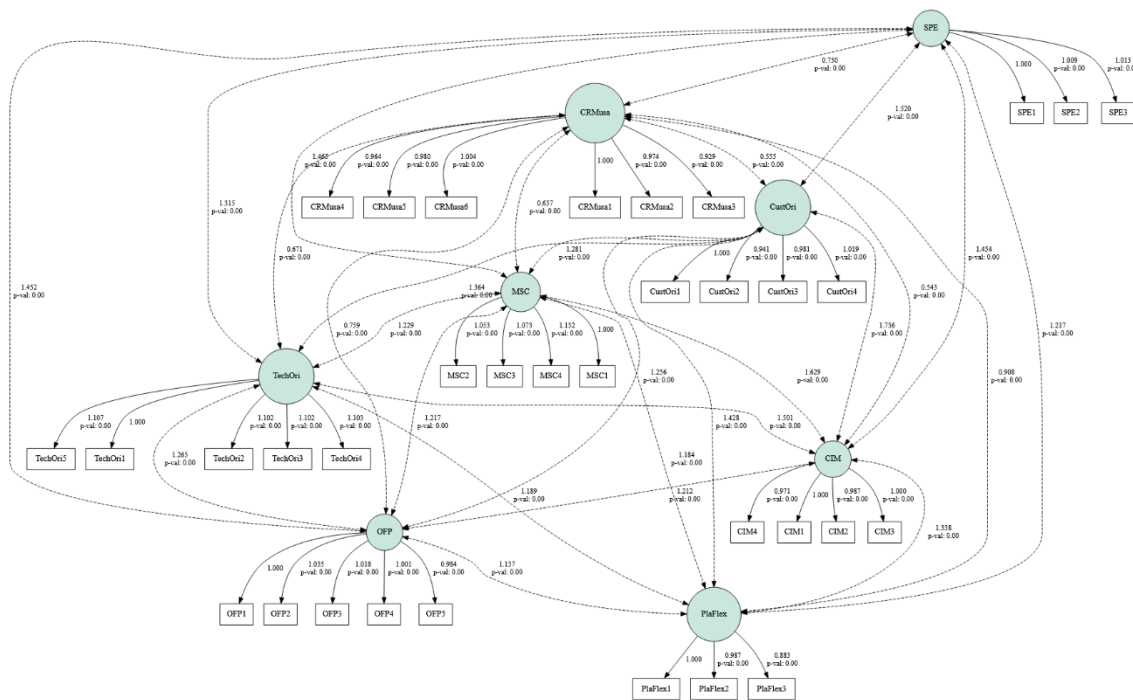


Figure 9- Measurement Model. Source: Self-elaboration.

Lisboa et al., (2012) mention that the evaluation of the quality of the fit of the model to the data should be carried out at two levels: 1) at the level of the model as a whole and 2) at the level of the measurement and structural models, after having ensured that all estimates made are acceptable, that is to say that there are no infringing or improper estimates. Such evaluation will be carried out below.

VII.II.I- Assessment of the Quality of Fit of the Global Model

According to Hair J.F. et al., (2014), once a specific model is estimated, the model fit compares the theory to the reality by evaluating the similarity of the estimated covariance matrix with the reality (observed covariance matrix). For Marôco (2014), the model quality assessment phase aims to assess how well the theoretical model is able to reproduce the correlational structure of the variables manifested in the study sample.

Lisboa et al., (2012) point out that, in the case of SEM, there is not a statistical test that is unanimously accepted in the literature as the one that best assesses the robustness of the model's reactions. According to the authors, a large number of measures

exist, and those measures should be seen as complementary assessments of the overall adjustment model. Such assessments are as follows:

1. Absolute adjustment measurements: Evaluate the global estimation of the model, without comparison with another model. E.g.: χ^2 (Chi-Square); NCP (Non centrality parameter); RMSEA (Root Mean Square Error of Approximation); GFI (Goodness-of-fit Index); AGFI (Adjusted Goodness-of-fit Index); SRMR (Standardised Root Mean Square Residual); CN (Hoelter's critical N); ECVI (Expected Cross-validation Index).
2. Incremental adjustment measurements: It compares the proposed model with a base model, usually called a null model, which lays the foundation for other different models. E.g.: NFI (Normed Fit Index); TLI (Tucker-Lewis Index); CFI (Comparative Fit Index); IFI (Incremental Fit Index).
3. Parsimonious fit measures: adjust global and incremental fit measures to offer a comparison between models with different numbers of parameters to be estimated, with the purpose of determining the proportion of fit achieved by each estimated parameter. χ^2/df (Relative Chi-Square); PNFI (Parsimonious Normed Fit Index); PGFI (Parsimonious Goodness-of-Fit Index); AIC (Akaike Information Criterion); GFI (Goodness of Fit Index).

Literature defends that the investigator should use measurements of the three types of classes to evaluate the model at study. For this investigation, the following measurements were used:

1. χ^2 (Chi-Squared)- Test to the significance of the minimized discrepancy function during the model adjustment. Unreliable measure, as it is strongly influenced by the size of the sample and by the departure from the hypothesis of joint normality of the observed variables; models estimated with large samples may be rejected if evaluated based on this measure; the same happens to models in which the observed variables deviate significantly from normality, even if the models are correctly specified (Lisboa et al., 2012).
2. RMSEA (Root Mean Square Error of Approximation)- Measurement with a tendency to favour more complex models, since models with a greater number of parameters will always present the same or better fit than models with fewer parameters (Marôco, 2014).

3. AIC (Akaike Information Criterion)- It is designed to identify the model with the best predictive power. AIC is inclined to overfitting the data, but it works in a consistent manner. It can compare any set of models as long as the dependent measure and sample remain consistent (Hair et al., 2019).
4. GFI (Goodness of Fit Index)- It is an attempt to produce a fit statistic that is less sensitive to sample size. In spite of N not being included in the formula, this statistic is still sensitive to sample size due to the effect of N on sample distributions (Hair et al., 2019).
5. CFI (Comparative Fit Index)- It has many desirable properties, including its relative, but not complete, insensitivity to model complexity, it is among the most used indices (Hair et al., 2014).
6. TLI (Tucker-Lewis Fit Index)- Very similar to the CFI, however, the TLI penalizes the quality of the adjustment less due to the complexity of the model, being generally lower than the CFI (Marôco, 2014).
7. NFI (Normed Fit Index)- It ranges between 0 and 1 and a value of NFI close to 1 is synonymous with a good fit. An advantage of this index is that it can be defined even if T is only a descriptive statistic that has no known distribution. (Hayashi et al., 2011).

Table 26- Measurements and Values of Reference. Source: Self-elaboration.

Type of Measurement	Measurement	Value of Reference	Source
Parsimonious	AIC (Akaike Information Criterion)	The smaller the better	Hair et al., (2019)
	GFI (Goodness of Fit Index)	<0.9 - Unacceptable Adjustment [0,9;0,95[- Good Adjustment [0,95;1[- Very Good Adjustment	
Absolute	χ^2 (Chi-Squared)	The smaller the better	Marôco (2014)
	RMSEA (Root Mean Square Error of Approximation)	>0.10 - Unacceptable Adjustment]0.05-0.10] - Good Adjustment ≤0.05 - Very Good Adjustment	
Incremental	CFI (Comparative Fit Index)	<0.8 - Bad Adjustment [0,8;0,90[- Poor Adjustment	
	TLI (Tucker-Lewis Fit Index)	[0,9;0,95[- Good Adjustment ≥0,95 – Very Good Adjustment	
	NFI (Normed Fit Index)	≥0.90 Very Good Adjustment	Alalwan et al., (2019)

According to the literature, once the adjustment indices of the global model are evaluated, it becomes necessary to re-specify the model to significantly improve the adjustment of the data. A current practice of re-specification consists in modifying the model by eliminating non-significant paths, releasing previously fixed parameters, fixing previously free parameters and/or correlating measurement errors (Marôco, 2014). Hair et al., (2014) argue that a modification index is calculated for each possible relationship that is not estimated in a model. According to the authors, this is not estimated in a model. According to the authors, this is an important tool to identify variables with problematic indicators, if they exhibit the potential for cross-loading. However, as most indexes, of model adjustment are within the values of reference, there was no need to re-specify the model. The exceptions are the GFI and NFI indexes who present a value of 0.891, but they are very close to the minimum value of good adjustment which is 0.9. Table number twenty-seven shows the indicators of the measurement model.

Table 27- Indicators of the Measurement Model. Source: Self-elaboration.

Indices	Measurement Model
χ^2	1288.8
RMSEA	0.087
GFI	0.891
AIC	179.6
CFI	0.93
TLI	0.921
NFI	0.891

VII.II.II- Quality Analysis of the Measured Model

As indicated by the literature, after verifying whether the model's global adjustment indices are acceptable, it is necessary to verify whether the variables and the indices linked to them are adequate to continue the study (Lisboa et al., 2012). The authors suggest, for this analysis phase, to verify the measurement reliability of each latent variable, as well as the measurement reliability of each indicator, as it is presented in the next sub-chapters.

VII.II.III- Individual-Item Reliability

Table 28- Individual-Item Reliability. Source: Self-elaboration.

Items	SRW	Z-Value
TechOri1	0.949	-
TechOri2	0.972	35.003
TechOri3	0.968	34.143
TechOri4	0.949	30.524
TechOri5	0.947	30.231
PlaFlex1	0.970	-
PlaFlex2	0.951	32.612
PlaFlex3	0.902	25.732
CIM1	0.922	-
CIM2	0.937	25.240
CIM3	0.956	27.142
CIM4	0.928	24.427
CustOri1	0.957	-
CustOri2	0.968	36.136
CustOri3	0.977	38.572
CustOri4	0.964	35.055
CRMusa1	0.853	-
CRMusa2	0.813	14.928
CRMusa3	0.835	15.629
CRMusa4	0.904	18.098
CRMusa5	0.859	16.419
CRMusa6	0.923	18.840
OFP1	0.906	-
OFP2	0.932	23.347
OFP3	0.944	24.237
OFP4	0.937	23.727
OFP5	0.913	21.973
SPE1	0.931	-
SPE2	0.961	28.725
SPE3	0.946	26.968
MSC1	0.913	-
MSC2	0.924	23.472
MSC3	0.952	25.875
MSC4	0.972	27.936

Standardized Regression Weights (SRW) and Standard Errors were used in order to measure the causal paths attributed to the structural model to measure each indicator. A SRW classification contemplates the description of the magnitude of an association, in which there should not be SRW values <0.25 in order for the analysis items to explain at least a quarter of the association in the model (Marôco, 2010). According to the author

the standardized beta assesses that there is a large influence, when $\beta > 0.8$; moderate influence when β is between 0.5 and 0.8 and small influence when $\beta < 0.25$.

All measurements referred to the variables TechOri, PlaFlex, CIM, CustOri, CRMusa, OFF, SPE and MSC were considered to have a high level of influence. It is noteworthy that indicators numbers one, two, three, and five in the CRMusa variable have less influence than the rest since they have a SRW value inferior to the rest, but still above 0.8. Table twenty-eight presents the score for each indicator, according to the standards previously specified by Marôco (2010). The evaluated results confirm that there is a good measurement reliability on all the research indicators.

VII.II.IV- Composite Reliability (CR)

The measurement of reliability of each latent variable assesses how a particular latent variable is being measured by selected indicators. The measure must be calculated for each of the latent variables with multiple indicators and, in order to accept the hypothesis of its reliability, it must have values above 0.7 (Lisboa et al., 2012). Hair et al., (2014) state that reliability is also an indicator of convergent validity, in which items that are indicators of a specific construct must converge or share a high proportion of common variance. The authors mention that there are some debates around the best indicator to measure reliability, however, Cronbach's alpha coefficient remains a commonly applied estimate. According to the authors, the value for any estimate of reliability greater than 0.7 suggests good reliability, values between 0.6 and 0.7 can be acceptable, as long as other indicators of a model's validity are good. As depicted in table number twenty, the CR and Cronbach's alpha indicators were calculated. All items showed results above 0.7 for both criteria, increasing the guarantee of internal consistency of the items. Cronbach's alpha values remained the same as EFA, since there was no need to remove items from the initial measurement model.

VII.II.V- Average Variance Extracted (AVE)

The Average Variance Extracted evaluates the proportion of variance of indicators related to the measurement of a given latent variable explained by that latent variable. The measure must be calculated for each of the latent variables with multiple indicators and, in order to accept the hypothesis of its reliability, it is usual to consider values above

0.5 (Lisboa et al., 2012). Hair et al., (2014) mention that the AVE is calculated as the total of all squared standardized factor loadings divided by the number of items. According to the authors, an AVE of 0.5 or higher suggests adequate convergence and, when it is lower than 0.5 it indicates that, on average, more errors remain in the items than the variance explained by the structure of latent factors imposed on the measure. AVE and CR are related to the quality of a measurement (Valentini & Damásio, 2016). The indices should be considered as presented in table number twenty-nine.

Table 29- Analysis of the Reliability of Variables. Source: Self-Elaboration.

Index	Reference Values	Source
AVE	>0,50 Proper Convergence <0,50 Improper Convergence	Hair et al. (2006)
CR	>0,7 Good 0,7 >CR> 0,6 Acceptable < 0,6 Unacceptable	
Cronbach's Alpha	>0,8 Good >0,9 Excelent	Pestana & Gageiro, (2014)

Given the table number thirty, it is possible to state that the proposed model meets the criteria of feasibility and convergent validity.

Table 30- Reliability of Variables. Source: Self-elaboration.

Variable	Alpha	AVE	CR
TechOri	0.98	0.92	0.98
PlaFlex	0.95	0.89	0.96
CIM	0.96	0.88	0.97
CustOri	0.98	0.94	0.98
CRMusa	0.94	0.75	0.95
OFP	0.96	0.86	0.97
SPE	0.96	0.90	0.96
MSC	0.96	0.89	0.97

VII.III- Discriminant Validity Analysis

Table 31- Discriminant Validity Analysis. Source: Self-elaboration.

	Estimate	Estimate ²	AVE1	AVE2
TechOri-Plaflex	0.519	0.269	0.92	0.89
TechOri-CIM	0.720	0.518	0.92	0.88
TechOri-CustOri	0.641	0.411	0.92	0.94
TechOri-CRMusa	0.495	.245	0.92	0.75
TechOri-OFP	0.698	.487	0.92	0.86
TechOri-SPE	0.713	.508	0.92	0.90
TechOri-MSC	0.655	.429	0.92	0.89
Plaflex-CIM	0.516	.266	0.89	0.88
Plaflex-CustOri	0.539	.290	0.89	0.94
Plaflex-CRMusa	0.538	.289	0.89	0.75
Plaflex-OFP	0.504	.254	0.89	0.86
Plaflex- SPE	0.530	.281	0.89	0.90
Plaflex-MSC	0.507	.257	0.89	0.89
CIM-CustOri	0.720	.518	0.88	0.94
CIM-CRMusa	0.353	.125	0.88	0.75
CIM-OFP	0.590	.348	0.88	0.86
CIM-SPE	0.697	.486	0.88	0.90
CIM-MSC	0.766	.587	0.88	0.89
CustOri-CRMusa	0.354	.125	0.94	0.75
CustOri-OFP	0.599	.389	0.94	0.86
CustOri-SPE	0.713	.508	0.94	0.90
CustOri-MSC	0.591	.349	0.94	0.89
CRMusa-OFP	0.568	.323	0.75	0.86
CRMusa-SPE	0.537	.288	0.75	0.90
CRMusa-MSC	0.460	.212	0.75	0.89
OFP-SPE	0.799	.638	0.86	0.90
OFP-MSC	0.658	.433	0.86	0.89
SPE-MSC	0.779	.607	0.90	0.89

The discriminant validity of each construct was measured by comparing the square root of the AVEs and their corresponding correlations, as suggested by Fornell & Larcker (1981). Discriminant validity legitimizes that the analysed constructs are different from each other and are able to analyse phenomena that the other variables are not capable of (Hair et al., 2010).

Table number thirty-one is organized in the following manner: Estimate, Estimate², AVE1 and AVE2. Hair et al., (2010) points out as the first step towards validation the comparison of the average variance extracted between two variables with the square of the correlation estimate between both variables. It is noteworthy that the individual estimate value should be greater than the squared estimate.

As mentioned, the AVE is the factor that correlates the variables of the study. For this calculation, the measure must be extracted from each latent variable which includes multiple indicators and thus validate the reliability of the hypothesis in order to accept the hypothesis of its reliability. Table thirty-two compiles the values verified by AVE and presents the values of each variable.

Table 32- Correlation Between Variables. Source: Self-elaboration.

	TechOri	Plaflex	CIM	CustOri	CRMusa	OPF	SPE	MSC
TechOri	1.000							
Plaflex	0.519	1.000						
CIM	0.720	0.516	1.000					
CustOri	0.641	0.539	0.720	1.000				
CRMusa	0.495	0.538	0.353	0.354	1.000			
OPF	0.698	0.504	0.590	0.599	0.568	1.000		
SPE	0.713	0.530	0.697	0.713	0.537	0.799	1.000	
MSC	0.655	0.507	0.766	0.591	0.460	0.658	0.779	1.000

VII.IV- Factor Analysis Conclusion

This research aims to examine the Customer Relationship Management elements that impact Business Performance. The results obtained in this chapter, resulting from the EFA and CFA, legitimize the model used for the study, as well as the constructs and variables used to investigate the proposed novelty. All analyzes were carried out in the light of academic research that corroborates the techniques applied in this dissertation. The proposed model is valid according to the parameters presented in the text and allows for conclusions about the researched constructs, developed in the following chapter.

VII.V- Results

The results of this research add to the body of literature and are presented in this sub-chapter with the disclosure of the descriptive analysis, the hypotheses test and the practical and theoretical contributions of this study.

VII.V.I- Test

The Test phase is used to summarize and explore the behaviour of the data and so, for this study, the average was calculated with the sum of the observed values, divided by the number of factors and also the standard deviation calculation, with the summary measure of the differences of each observation in relation to the average of all observations (Campbell & Swinscow , 2009).

As aforementioned, for this study, the seven-point Likert scale was used, where value one intended for the respondent to “Strongly Disagree” and value seven to “Strongly Agree” with the statements presented. According to the assigned values, in addition to the mean and standard deviation, the highest mean value and the lowest mean value of all variables were also analyzed. Table number twenty-four presents the results analysed. All variables present an average result above 3.5 (average value of the scale used) which indicates the respondents’ agreement. Although not significantly different, the PlaFlex variable presents the lowest mean result. This can be due to the fact this variable presents technical IT statements that respondents may not have the knowledge to evaluate. The variable measures the real-time synchrony of information, which may also indicate that there is opportunity for improvements in most companies surveyed in

this matter. The other variables indicate a general agreement, namely CIM, CustOri, CRMusa, OFP, SPE and MSC. The TechOri variable moves away from the rest of the variables, representing the highest mean value for the entire model. All results are presented in the table in the next page.

Table 33- Analysis of the Variables at Study. Source: Self-elaboration.

Variable	Mean	Std. Devi.	Min.	Max
TechOri	6.011	1.536	1.178	6.491
PlaFlex	5.24	1.743	1.004	6.132
CIM	5.872	1.628	1.074	6.459
CustOri	5.934	1.601	1.066	6.504
CRMusa	5.974	1.131	2.388	6.229
OFP	5.507	1.456	2.095	6.119
SPE	5.838	1.45	2.018	6.312
MSC	5.482	1.568	2	6.107

VII.V.II- Hypothesis Test and Discussion of Results Obtained

The proposed hypotheses were conducted through a series of analyses using SRW and p value to confirm whether they are statistically significant. Only $p < 0.05$ values were considered acceptable, which means that there is a 5% probability of error.

Table number thirty-four presents the parameters used for this analysis.

Table 34- P-Value Interpretation. Source: Adapted from Arsham, H. (1988).

P-value	Interpretation
$P < 0,01$	Very strong evidence against H0
$0,01 < = P < 0,05$	Moderate evidence against H0
$0,05 < = P < 0,10$	Suggestive evidence against H0
$P > 0,10$	No real evidence against H0

Table 35- Hypotheses Test Results. Source: Self-Elaboration.

Hypothesis	Relation	SRW	P-Value	Hypothesis Corroboration
H1	TechOri → CRMusa	0.495	0.00	Corroborated
H2	PlaFlex → CRMusa	0.538	0.00	Corroborated
H3	CIM → CRMusa	0.353	0.00	Corroborated
H4	CustOri → CRMusa	0.354	0.00	Corroborated
H5	CRMusa → OFP	0.568	0.00	Corroborated
H6	CRMusa → SPE	0.537	0.00	Corroborated
H7	CRMusa → MSC	0.460	0.00	Corroborated

As one can observe, analysing table number thirty-five, all hypotheses of this study have been confirmed. Since all hypothesis present a p -value <0.01 it is possible to state that there is strong statistical evidence to support the relations between the variables at study. Therefore, the results seem to offer a significant contribution since all variables were validated through different statistical tests. Moreover, analysing the SRW values between the hypotheses at study, one can immediately observe that the hypothesis, which would perhaps be the main hypothesis of this study, is the one who has more weight. H5: CRMusa → OFP (SRW: 0.568; p -value: 0.00) is the hypothesis that presents the biggest SRW value, therefore showing that CRMusa is impactful in the overall performance of a business.

H2: PlaFlex → CRMusa is the hypothesis with the second highest SRW value (SRW: 0.538; p -value: 0.00). As Subramaniam et al., (2013) postulates, the degree to which the CRM platform is flexible affects the CRM utilization.

The third highest SRW value is H6: CRMusa → SPE (SRW: 0.537; p -value: 0.00). In this hypothesis, it shows that CRMusa has a big weight in the SPE of a company. This is not an unexpected result, since CRM systems were originally meant to support sales functions (Kumar & Reinartz, 2018). Nowadays, although companies use CRM systems to other activities besides sales, CRM systems are still very important to the SPE of a company.

However, there are other hypotheses that are surprising. H1: TechOri → CRMusa (SRW: 0.495; p -value: 0.00) was initially expected to have a bigger impact. As CRM is also a technological tool, respondents could give a great deal of importance to the TechOri

variable, therefore having more weight in CRMusa. However, this may have not occurred because, nowadays, companies do not need to go through extreme measures to have a CRM software. Most basic software packages only need a computer and a connection to the Internet. For this case, respondents could perceive this variable as not very important, perhaps because the minimum requirements for a 21st Century company are already being met. Nonetheless, the SRW value is still above the threshold of 0.25, which is an indication that TechOri has a significant impact on CRMusa.

Although above the 0.25 threshold, the Customer Related Factors, namely CIM and CustOri are the two variables with the lowest SRW. H3 and H4 with (SRW: 0.353; p -value: 0.00) and (SRW: 0.354; p -value: 0.00) respectively, were the two variables with the lowest weight on CRMusa. This may happen because it is very challenging for firms to manage all customer information (Rafiki et al., 2019) and professionals may see CRM strictly as a software system. Nonetheless, as Bhat & Darzi (2016) argue and this study supports, CustOri is an important factor for CRM efficiency and effectiveness.

Finally, H7:CRMusa \rightarrow MSC (SRW: 0.460; p -value: 0.00), supports the studies conducted by Morgan et al., (2009) and Day & Schoemaker, (2019) which conclude that CRMusa has a big influence in the ability of a company to understand and foresee changes in their markets.

VII.V.III-Conclusion

Performing the hypotheses test, all hypotheses presented in figure number seven were corroborated by the statistical tests. The antecedents of CRM usage and its impact on Business Performance were supported by the literature review and by the hypothesis test, revealing a significance value of $p < 0.05$.

After validating the variables, a descriptive analysis of the data was performed to summarize and interpret them. The subsequent chapter will discuss the conclusion of this study, as well as its practical and theoretical limitations and contributions.

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Chapter VIII- Results Discussion

The proposed research model was measured using the Exploratory Factor Analysis (EFA), followed by the Confirmatory Factor Analysis (CFA) that resulted in the construction of the measurement model and the structural model. The measurement model assessed the adequacy of the measures used in the theoretical constructs, while the structural model indicated the relationship between the variables. The Confirmatory Factor Analysis was used to assess the construct's validity and reliability, which showed a good fit of the proposed model to the data. Thus, this study provides insights into the usage and implementation of CRM, and its impacts to the organizations that adopts it.

The results are added to the existing and expanding body of literature and suggest that the implementation of a CRM strategy requires companies to allocate their capital on the CRM platform itself, without forgetting to focus on the strategic side of CRM, namely the processes and behaviours related to the customer. Moreover, this study is able to present the impacts a well-managed and executed CRM strategy has to an organization. The studies presented in the literature review chapters demonstrate that the investment in CRM has become a normal practice in today's companies, regardless of the market or industry it operates, but does not provide an empirical tested framework of what are the main contributing factors to a successful implementation. This research is able to contribute to the existing literature since, first and foremost, the discoveries made indicate that Technical Factors are paramount to a successful CRM utilization. In fact, these variables together present the highest mean SRW value for the antecedent variables, as depicted in table number thirty-five, therefore corroborating the results presented by other studies conducted by Azar & Ciabusch, (2017); Batista et al., (2020); Cruz-Jesus et al., (2019); Foltean et al., (2019); Nam et al., (2019) and Soltani et al., (2018).

Secondly, although not as statistically significant as the Technical Factors, the Customer Related Factors are also corroborated and are an important part to the CRM usage. As shown in table number thirty-five, both variables, CIM and CustOri, have a mean SRW of 0.3535, which in spite of being above the minimum 0.25 threshold, represents the lowest mean SRW of the three groups of variables in this study. This group is, however, in line with other investigations such as Bhat & Darzi, (2018); D. Kim et al., (2018); Rafiki et al., (2019) and Soltani et al., (2018).

Lastly, this study confirms the literature review regarding the consequent variables of CRM usage. CRM usage is able to improve the Overall Firm Performance of an organisation, as depicted in studies conducted by Alqershi et al., (2020); Foltean et al., (2019) and Rafiki et al., (2019) and reiterated by a high relation in the impact of CRM usage in OFP (SRW= 0.568). The SRW for this hypothesis presents the high SRW value for all hypotheses in this study, which is perhaps the key variable of this research. Furthermore, and with all hypotheses corroborated, the Business Related Factors group present the highest mean SRW value, 0.521, of the three groups at study, reaffirming the studies conducted by Baden-Fuller & Teece, (2020); Bernard et al., (2016); Morgan et al., (2015) and Rodriguez & Kevin Trainor, (2016).

VIII.I- Theoretical Contributions

Authors have pointed out that, due to the intrinsic nature of CRM, which covers a wide range of subjects within the academia, there are still needs to provide a more consensual definition of CRM. This study proposes a definition that identifies CRM as both a strategy and a process that integrates IT and marketing related concepts, to expose the potential benefits it can create for an organization.

From the concepts of CRM adopted by the Marketing and IT fields, this study presents how the combination of these aspects could be related and how it was possible to understand the impact of CRM usage on the Performance of companies. Through the conceptual model of investigation, a set of antecedent and consequent variables of CRM were simultaneously examined, showing how the chain of effects between technical factors, customer factors and their impact on company performance is built through the usage of CRM. The gauged results add to the existing body of literature, therefore presenting an updated empirical research, and suggest that the implementation of Technical Factors with Customer Related Factors is essential to achieve a high level of performance through the usage of CRM. Accordingly, this research combines IT and customer centric concepts to guide companies and/or professionals on how to implement a successful CRM strategy, without obliterating the intrinsic dangerous each of the presented variables imposes.

Tests performed revealed that Technological Orientation, Platform Flexibility, Customer Information Management and Customer Orientation can be considered antecedents of CRM. According to the analysis made in this study, these variables present

significant results for the total sample and should, therefore, be considered of extreme importance to the CRM strategy of a company.

This study is also able to confirm all consequent variables adopted for CRM usage, namely Overall Firm Performance, Sales Process Effectiveness and Marketing Sensing Capabilities. Thus, bridging the gap of identifying key variables that explore the linkage between CRM and the business value it can generate.

It is possible to conclude that when companies correlate IT and Customer Related concepts there is an improvement in the CRM utilization. Consequently, it is also possible to conclude that CRM utilization significantly impacts the Business Performance of companies, regardless of the market or the industry.

VIII.II- Practical Contributions

Although not very complex, the conceptual model of investigation is able to present an empirical study of 1) the main elements to the construction of a successful CRM strategy; 2) the behaviours a company should adopt to build an effective and efficient CRM strategy and 3) the impacts a good and well implemented CRM strategy has on business performance. Thus, Technological Orientation, Platform Flexibility, Customer Information Management and Customer Orientation can be considered as dominant variables for the success of CRM utilization and the direct effects of CRM usage are the Overall Firm Performance, Sales Process Effectiveness and Marketing Sensing Capabilities.

Thus, it is expected that the conceptual model, empirically tested, in this investigation, can enrich and help advance scientific research on the subject by this community.

It is also expected that this study will be useful for professionals who work or want to work in the field of CRM as well as companies that have a CRM strategy and/or platform and intend to improve its benefits. Moreover, this study intends to present a clear study of the benefits CRM can bring to organizations and serve as a guideline on how to implement this type of resource in a successful manner.

VIII.III- Research Limitations and Future Guidelines

Although the research model was developed based on solid theoretical articles extracted from reputable scientific journal and conducted following good practices in the field of statistical analysis, this study is not exempt from certain limitations that can be examined in future researches.

Firstly, although statistically significant, with 209 respondents, the sample size is somewhat small, so future researches should consider a bigger sample size. Future research may also examine the synergistic effects of other marketing mix and IT variables on company performance, since, although extremely important to a good usage of CRM, the used variables for this study, may not be the only ones that determine success. Naturally, the same can be applied to the consequent variables. Other variables may also be of great importance when tested through an empirical analysis. In addition, future researches could identify new constructs, metrics and models regarding the thematic of CRM utilization.

In the same line, it should be considered that this research did not distinguish the segments of the companies surveyed, being considered suitable for data analysis any company that had a CRM system. Therefore, another suggestion is that future research should be carried out in specific segments that may present particularities between them.

Finally, the data set collected was conceived from the perspective of CRM professionals and does not consider the opinion of its clients. For future research, it is suggested to collect data both from the companies and their customers, as this cross-examination would improve the reliability of the findings. Thus, it would be possible to examine how processes described in this dissertation, mostly Customer Related Factors, are perceived by customers.

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Attachments

Attachment I- Applied Questionnaire

Questionnaire about Customer Relationship Management								
Section 1 of 8								
<p>Inserted in the FEUC (Faculty of Economics University of Coimbra) Master's in Marketing, this questionnaire seeks to collect data for an academic investigation on Customer Relationship Management in today's companies.</p> <p>The questionnaire is divided in seven parts, and it is anonymous and confidential. There are no right or wrong answers, so your sincere opinion is needed. All questions are mandatory, with an average time of 3-5 minutes to complete them.</p> <p>Your contribution is essential to the success of this academic research. Thank you so much for your time and availability!</p>								
Section 2 of 8								
Please select from 1 (strongly disagree) to 7 (strongly agree) the level you agree with each statement.								
		(1) Strongly disagree	(2)	(3)	(4) Nor disagree, nor agree	(5)	(6)	(7) Strongly agree
Technical Resources	Our company has sufficient technology to operate a CRM system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our company has sufficient hardware resources to support a CRM system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our company has sufficient software resources to support a CRM system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our company has a database technology that is compatible with CRM systems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our company has an Integrated System application that is compatible with CRM systems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our CRM platform supports connections between our systems and our clients/partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our CRM platform can easily transmit, integrate and process data from our partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Our CRM platform supports employee participation in e-business activities such as a request for market and customer information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3 of 8								
Please select from 1 (strongly disagree) to 7(strongly agree) the level you agree with each statement.								
Customer Factors		(1) Strongly disagree	(2)	(3)	(4) Nor disagree, nor agree	(5)	(6)	(7) Strongly agree
	Our database is a key business tool.	0	0	0	0	0	0	0
	Electronic information on customers complements our other knowledge.	0	0	0	0	0	0	0
	Electronic information is more easily managed.	0	0	0	0	0	0	0
	Electronic information on customers is central to our decision making.	0	0	0	0	0	0	0
	In our organization, retaining customers is considered to be a top priority.	0	0	0	0	0	0	0
	Our employees are encouraged to focus on customer relationships.	0	0	0	0	0	0	0
	In our organization, customer relationships are considered to be a valuable asset.	0	0	0	0	0	0	0
	Our senior management emphasizes the importance of customer relationships.	0	0	0	0	0	0	0

Section 4 of 8								
Please select from 1 (strongly disagree) to 7(strongly agree) the level you agree with each statement.								
CRM usage		(1) Strongly disagree	(2)	(3)	(4) Nor disagree, nor agree	(5)	(6)	(7) Strongly agree
	We extensively use CRM to perform our job.	0	0	0	0	0	0	0
	We are frequent users of CRM.	0	0	0	0	0	0	0
	We fully utilize the capabilities of CRM.	0	0	0	0	0	0	0
	We fully integrate the CRM application in our sales processes.	0	0	0	0	0	0	0
	We consistently use CRM to track and record sales activities.	0	0	0	0	0	0	0
	We extensively use CRM technology to perform our job.	0	0	0	0	0	0	0

Section 5 of 8								
Please select from 1 (strongly disagree) to 7 (strongly agree) the level you agree with each statement.								
		(1) Strongly disagree	(2)	(3)	(4) Nor disagree, nor agree	(5)	(6)	(7) Strongly agree
Business Factors	Our company has become more successful after adopting a CRM system.	0	0	0	0	0	0	0
	Our company has experienced a greater market share after adopting the CRM system.	0	0	0	0	0	0	0
	Our company has experienced fast growth after adopting the CRM system.	0	0	0	0	0	0	0
	Our company has become more profitable after adopting the CRM system.	0	0	0	0	0	0	0
	Our company has become more innovative after adopting the CRM system.	0	0	0	0	0	0	0
	Utilization of the CRM system improves our closing rates.	0	0	0	0	0	0	0
	Utilization of the CRM system improves our customer retention.	0	0	0	0	0	0	0
	Utilization of the CRM system enables us to analyse reasons for won and lost opportunities.	0	0	0	0	0	0	0
	We can learn about customer needs and desires, and how to fulfil them.	0	0	0	0	0	0	0
	We can get information about channel members both in distribution and communication.	0	0	0	0	0	0	0
	We can identify and understand market trends.	0	0	0	0	0	0	0
	We can learn to understand the changing market.	0	0	0	0	0	0	0

Section 6 of 8							
Please provide information about yourself							
Demographics	Age	less than 18	18 to 24	25 to 34	35 to 44	45 to 54	more than 54
	Gender	Female	Male	Prefer not to disclose			
	Education Level	Highschool degree	Bachelor's degree	Master's degree	PhD		

Section 7 of 8								
Please provide information about your company								
Company	Size of the company (number of employees)	1-5	6-20	24-50	51-100	101-500	501-2000	2000+
	Age of the company (years)	0-2	2-5	5-10	10-20	20+		
	Position you have on the company?							
	Company sector?							
	Billing amount of the company (per year)	Less than 1 million	1-5 million	6-10 million	11-15 million	16-20 million	More than 20 million	
	Currency	Euros	American Dollar	British pounds	Japanese yen	Other		
	Markets where the company operates	Europe	Asia	North America	South America	Africa	Oceania	

Section 8 of 8
<p>The End. Thank you!</p> <p>Thank you for taking the time to complete this survey. I truly value the information you have provided. Please do not forget to Submit.</p>