



The Impact of Balanced Scorecard on Customer relationship management performance: Evidence from Egypt

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The Impact of Balanced Scorecard on Customer relationship management performance: Evidence from Egypt

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Abstract

Purpose – This paper aims at analyzing the impact of balanced scorecard (BSC) on customer relationship management performance (CRMP).

Design/methodology/approach – This paper uses secondary data of twenty-three companies listed on the Egyptian Stock Exchange market during the period 2014-2021.

Findings - The results from our study are compatible with the previous studies explored at the literature review as a statistical significant impact of the BSC has on CRMP. But our originality in this study are not all perspectives of BSC have similar impact; where the innovation and learning perspective in some sectors as the industrial goods, services, and automobiles has an impact on CRMP. In general, the BSC affected (34.64%) of the CRMP, without considering any effect of the other sectors. Additionally, the customers' perspective in the sample companies has a significant impact on CRMP; where the BSC affected (12.73%) of CRMP in companies listed on the EGX 50 Index.

Research limitations/implications – The analysis uses an indicator to determine the market performance during the period from 2014-2021, and the data for the sample is chosen randomly depending on one of the Egyptian Stock Exchange (EGX 50) indices, moreover it is used only for persistence stocks throughout the period described above.

Practical implications – The findings of this paper would add to the literature and provide further empirical evidence related to one of the emerging economies, such that as Egypt. Furthermore, it can raise awareness among the companies' managers and owners on the importance of using BSC as one of management accounting techniques that would help in performance evaluation.

Originality/value – The use of the BSC can be highly significant on CRMP, with curiosity about the company's main characteristics, making the decision more informative.

Keywords: Balanced scorecard, customer relationship management performance, internal business perspective, customer perspective, learning, development perspective and financial perspective.

1. Introduction

Market dynamics revolute all enterprises to search to accelerate our thoughts to acknowledge more about the uncertainty; furthermore, the data-driven approach aiding our decision analysis rules has become more informative than yesterday. Management accounting (MA) plays an essential role in the decision-making process in many enterprises today. It provides financial and non-financial information using traditional and sophisticated techniques in performance evaluation. Furthermore, MA practices have allowed the companies to reduce risks and uncertainty of future and current business activities (Nair, Hunt&Jayabalan, 2021).

Nowadays, the customers are considering in the center of firms focus, and represent the most important asset of enterprises. Meeting customer requirements with high quality means good understanding and fast effective response to these needs. Therefore, many enterprises have identified a customer-centric, where CRMP has become a basic strategy in enterprises.

CRMP performance evolution has become a subject of importance for both academics and managers of enterprises across all industries in the last few years. Much literature has dealt with CRMP strategy, yet little literature has dealt with the problem of a suitable CRMP performance evolution. Some literatures emphasized that enterprises need to understand the determinants of CRMP strategy and which interdependencies among those determinants (Tornjanski, Knezevic&Delibasic, 2017). In this competitive industry, some may try to increase their internal and external market share by various marketing techniques. As a result, companies recognized based on their ability to respond to the situation and provide new products and services to meet the needs and wishes of markets and customers services.

The today's world competitions, which are being threatened by the financial crisis, have proven the need for both manufacturers and service marketing companies to measure how their customers think about their services and goods, especially given the enormous evidence supporting of relationship marketing as a viable alternative to be faced by global economic uncertainty (Abdulateef ,Mohdmokhtar&Yusoff, 2010).

In many firms today, MA plays a crucial role in influencing decision-making. Organizations have used it to their advantage. The goal of MA performance is to determine out the organization's structure and then assign responsibilities to the relevant people. Use a method to measure the performance of a division or department. The goal of performance evaluation is to improve the efficiency of a firm business possibilities and long-term sustainability MA's performance (Nair,Hunt&Jayabalan,2021).

According to Nixon & Burns (2012), MA, tools linked to the increased flexibility required to respond to ever-changing market conditions. Gonçalves & Gaio (2021) point that the accounting systems have progressed from simple management and forecasting tools to more complex development systems. Four stages of evolution identified by IFAC (1998). In terms of information supply and resource management, these stages differ. Initially, MA tools used to determine the cost of a product. They classified as parts of management control systems in the second stage. Due to the growing competitiveness and rapid technical growth, the instruments in the third stage focused on reducing wasted resources. Finally, the fourth stage focused on the generation of value. The use of various strategic cost management technologies became necessary to integrate cost management with company strategy.

A common strategic planning tool for performance evolution is the balanced scorecard, which integrates company visions with both financial and non-financial measures. In order to achieve an effective and efficient strategic improvement of a firm, a number of studies have used BSC to a variety of sectors, including finance, human resources, supply chain management, sales, and marketing, among others. Although Kaplan and Norton's BSC model, which they first proposed in 1992, is more applicable to the operations of profit-oriented firms, it is also applicable to socially and environmentally conscious processes when certain characteristics of those processes that place emphasis on how well the firms accomplishes its mission are taken into account (Duman *et al.*,2018).

Performance indicators has always been displayed using traditional financial indicators has developed a CRMP measurement. Value method that evaluates cash-flow return to explain causal relationship between CRMP and effect on financial performance by linking financial indicators has developed a CRMP metric value method that calculates cash-flow operational measures and indicators financial measures, on the other hand, have long been acknowledged as insufficient for measuring performance. As a result, many authors agree that BSC is the best. The most appropriate method for assessing performance taken into consideration, it provides a comprehensive view of both indicators that are both financial and non-financial (Tornjanski, Knežević& Delibašić, 2017)

This paper has many implications; first, the paper applies the BSC technique with a quantitative-based approach. With the data characteristics from the financial statements as inputs for the different perspectives for the BSC technique.

Second, the empirical analysis applies in two levels of analysis, the first categorized based on sectors of the study sample, the second on the aggregate level for the EGX50 prominent Egyptian Exchange Market Index. This paper's basic research question *what connections exist between the essential BSC Perspectives and the basic CRMP?*

The rest of this paper includes three sections, where Section 2 is reviewing of the literature, Section 3 discusses the research method, and section 4 is the conclusions.

2. Literature Review

2.1 Customer relationship management performance

Several studies have found that when service workers are considerably more customer-focused, long-term relationships between customers and companies can continue to develop (Hafeez & Basheer, 2018). Customer-focused service personnel have a better comprehension of the responsibilities, can virtually recognize customer demands and wishes, and can thus correctly fulfil them. Both companies and consumers continue to strengthen their relationships with one another, focusing on customer loyalty offerings that increase customer satisfaction and retention (Wang, & Koerber, 2020; Thaichon& Quach, 2015). According to Baashar et al., (2020), CRMP

is an innovative tool that aims at enhancing customer satisfaction, loyalty, and profitability through the acquisition, development, and implementation of effective customer connections and interactions.

Trust hence aids in the creation and operation of long-term CRMP(Hossain, Zhou & Rahman,2021). The state in which a client contemplates maintaining their relationship with the same enterprise known as customer relationship commitment, and it is another crucial component. On The information contained of customers in social commerce, on the other hand, identified as important perspectives for companies today. According to Shafia *et al.* (2011), the CRMP described as an effective means of attaining goals such as increasing market share and satisfied and loyal consumers. A customer-focused company system referred to as CRMP. This term first appeared in the field of information technology. In the 1990s, there was a community and a practitioner community. The phrases "connection" and "relationship" commonly used in academic circles. The terms "marketing" and "customer relationship management" frequently used interchangeably. CRMP is becoming into an effective tool and a reducing method of integrating goods and services. CRMP has now become a strategic requirement for multiple industries. (Anees *et al.*, 2020) refers to The company connects with customers, focuses more time and effort to discover new ways to add value to customers, and shifts customer interactions away from sales and delivery more toward pursuing solutions and partnership.

Multiple definitions of CRMP have been proposed in the literature (Venturini & Benito, 2015), ranging from the installation of specific technology solutions to a holistic strategy to managing customer relationships that adds value to both the customer and the company. According to Chetioui, Abbar & Benabbou (2017) CRMP identified and defined in a multitude of ways. Therefore better defined as the skill of gaining customers and establishing a long-term relationship with them. CRMP also defined as the integration of humans, processes, and technology utilized by a firm to understand and acquire customers. It focuses on client retention and relationships. Companies must have effective CRMP strategies in place to fully benefit from CRMP implementation and ensure that the company's targets are accomplished.

Reichold, Kolbe, & Brenner (2004) classified Categories of CRMP processes implementing involves: CRMP delivery processes are those that include direct contact with customers (i.e., campaign management, sales management, service management, and complaint management). CRMP analysis and support activities combine and analyses customer data from other CRMP processes. The analysis' conclusions fed back into the CRMP delivery procedures to increase their efficiency (i.e. customer scoring, lead management, customer profiling, customer segmentation, feedback management, and knowledge management).

CRMP thought to have a significant impact on the development of marketing skills that improve organizational performance. In other words, CRMP precedes the development of marketing capabilities within the organization because marketing capability is an integrated process that established to utilize the skills and resources, such as corporate knowledge, and it enables businesses to better satisfy customers' needs by adding value services to their products (Mohammed ,Rashid&Tahir, 2014)

According to Tornjanski, Knezevic & Delibasic (2017), CRMP is a business strategy for establishing and maintaining profitable customer connections with the goal of lowering operating costs and improving profitability over time by boosting customer happiness and loyalty. CRMP is a business strategy that based on customer segmentation while also focusing on processes that put the customer at the center of the firm.

As a result, both executives and academics have become increasingly interested in using CRMP frameworks in recent years.

CRMP from a strategic viewpoint focuses on both evaluating how customer-related processes carried out and redesigning how customer-related processes carried out. Customers' perceptions on procedures and how they may be more customer-centric. This identifying the relevant criteria is necessary. The viewpoint poses several questions. First, how should these standards be determined, and how the validity of these criteria be established? Second, how are these standards to be tested? A proper evaluation of the CRMP system's outcomes is important, according to Research Firm. (Shafia *et al.*, 2011)

According to Tornjanski, Knežević, Delibašić (2017) CRMP is made up of four main components: strategy, people, technologies, and processes. Furthermore, suggested that CRMP only delivers higher value when these four perspectives work together as a system. As a result, Sin *et al.* (2005) perceive CRMP as a multi-dimensional model with four main components: key customer focus, CRMP organization, CRMP strategy, and CRMP execution. CRMP based on technology and knowledge management Thus, firms that recognize that a successful CRMP implementation necessitates a comprehensive approach, cross-functional collaboration, and customer-centric business process reengineering will improve their chances of achieving strategic goals and gaining a long-term competitive edge. Hoseini & Naiej (2013) research divided CRMP into three categories: corporate-wide, customer facing, and functional. Customer-facing level view aims to consolidate all customer contact channels into a single image of the customer in order to disseminate customer intelligence to all customer-facing operations. In order to record all customer retention, this point of view emphasizes how essential it is to improve cooperation across time and interaction channels. CRMP supports in improving how consumers recognize products and services. Therefore, it may result in an increase in revenue firms, it has been suggested, have extensively invested in CRMP resources.

2.2 Performance measurement of CRM

Measuring CRM performance is difficult because the causal relationships between CRMP activities and the company's financial results are difficult to establish. These issues because of the complex relationships that exist across functional areas like marketing, sales, and service, as well as CRMP processes and technologies. Furthermore, many CRMP benefits are qualitative in nature, making it difficult to demonstrate their impact on financial results. Either CRM performance measurement evaluate the success of CRMP activities and processes, or it might focus on determining the monetary benefit of CRMP investments.

According to Reichold, Kolbe, & Brenner, (2004) refer to the process of quantifying the efficiency and effectiveness of previous actions known as performance measurement. Measuring CRM performance is difficult since the differences linked between CRMP operations and the company's performance are difficult to determine.

Economic effects the various functional relationships are the cause of these problems. CRMP techniques and technologies, as well as marketing, sales, and customer service Furthermore, it might be challenging to prove the value of many CRMP benefits because they are qualitative in nature. Influence on financial results CRM performance analysis may concentrate on one of two perspectives. Assessing and tracking the return on investment (ROI) for CRMP initiatives, or figuring out the financial benefit of CRMP investments CRMP activities and processes are successful. Customer satisfaction (Abdulateef *et al.*, 2010), market effectiveness and financial performance (Sin *et al.*, 2006), customer performance and financial performance (Akroush *et al.*, 2011), and customer retention and sales growth (Yim, Anderson & Swaminathan, 2004) were all used to evaluate CRMP dimensions. Previous research has shown that using various dimensions of performance is useful (Sin *et al.*, 2006). Customer retention is important for a company's competitiveness. In comparison to customer acquisition, it has recently become more important. Customer retention has been measured by four perspectives, according to research undertaken Chetioui, Abbar & Benabbou (2017) overall firm satisfaction, good word of mouth, repeat purchase intentions, and loyalty to the firm. , When it comes to managing corporate activities with regard to customers and workers, CRMP organization becomes a vital tool (Guerola-Navarro *et al.*, 2021)

Finally, successful CRMP implementation requires taking into account the marketing functions, organizational policies, organization culture, and organizational structure for improved organizational performance (Sanasam ,Pradhan&Mohanty, 2022). Therefore, all aspect of the firm that has been impacted by this system should be considered in a successful CRM performance evaluation. Numerous firms continue to use traditional performance indicators. The traditional accounting performance indicators have a variety of weaknesses, including the inability to effectively communicate organizational plans and priorities, the insistence on short-termism, and the inflexibility to change. Consequently, there has been a developing need for a business solution that could evaluate firms from various perspectives.

Firms can use many evaluation frameworks to help firms implement their strategies, monitor performance, and manage it. These contain both financial and non-financial indicators to paint a complete picture of the issue. The Balanced Scorecard is a well-known example of such a framework. (Reichold, Kolbe& Brenner,2004)

2.3 The concept of balanced scorecard

the balanced scorecard, according to Kaplan and Norton (1992), is a strategic management approach for defining and measuring an organization's objective and strategy. The balance scorecard, according to Hamdy (2018), is a mechanism for focusing an organization's objectives and strategies into practical objectives and performance measures for discernible viewpoints. Because of its ability to integrate both financial and nonfinancial perspectives in analyzing organizational performance, the balanced scorecard considered one of the most essential measurement methodologies. The balanced scorecard organized into four perspectives: financial, customer, internal business processes, and external business processes, Perspectives on learning and development.

A profit organization's most important goal is to make profit. The internal business process perspective has a causal relationship with the learning and growth perspective, which includes human capital, information capital, and organizational capital. The customer perspective has a causal relationship with the internal business process perspective, which includes operations management procedures, customer management processes, innovation processes, and regulatory & social processes. The financial perspective, as perceived through the customer value proposition, has a direct relationship with the customer perspective, which is a profit organization's highest goal. (Sari *et al.*, 2022).

Internal Business Process: The measures under this perspective include defect rate, customer complaint response time, after-sales service quality, internal process bureaucracy, process completion, quality and skill of staff, and staff development. Learning and Growth: Learning and growth take into

account a company's flexibility and ability to adapt to changes in the business environment, as well as the speed at which new technology implemented to fend off those changes, as well as the overall capabilities and innovativeness of the company. A company's capacity for innovation, learning, and development, according to Kaplan and Norton (1992), directly linked to the value and growth of the company. (Etim, & Agara (2011)

According to Eklund (2020), BSC offers a four-step strategic action process: vision and strategy design and execution, communication and linkage, business planning, and strategic evaluation and learning. Even though Kaplan and Norton (1992) created the BSC, Epstein, Wisner (2001) & Figge *et al.* (2002a) & Figge *et al.* (2002b) changed the traditional balance scorecard for sustainable practices (SBSC). SBSC, or stakeholder-centered strategy, is important in designing a well-defined strategic plan the only instrument that considers both financial and non-financial viewpoints, past, present, and future expenses, as well as short- and long-term sustainable performance.

The relationship between BSC Perspectives and Dominions of CRM in this paper are shown in Figure (1).

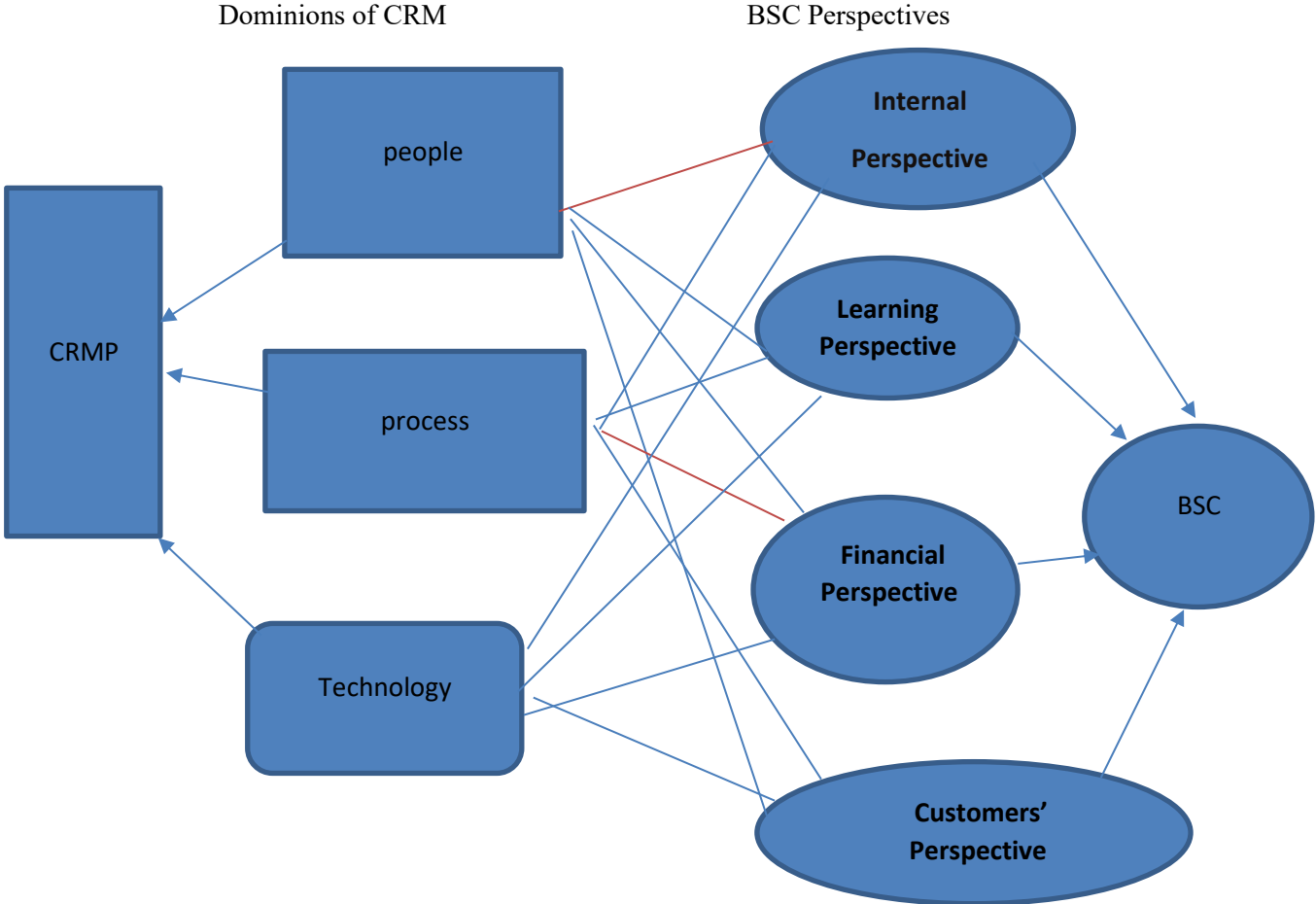


Figure (1). The relationship between BSC Perspectives and Dominions of CRM
(Kahreha& Shirmohammadi &Kahrehc.2012)

2.4 Strength of balance scorecard

the use of the BSC as a performance measurement technique by enterprises has numerous advantages. The BSC enables enterprises to have a more holistic perspective of their operations and help integrate all operational and financing activities with long and short-term strategic goals. The BSC approach lays forth a clear roadmap for what firms should analyze to "balance" the implications of strategic purpose across all functional areas. According to Etim & Agara (2011), a balanced scorecard is a strategic management system that considers both tangible-financial and intangible-non-financial indices. BSC has been shown to be capable of implementing the accomplishment of corporate strategies, especially because there is a causal connection between the effect on the financial indices and the performance of the intangible-non-financial indicators of the organization and successful management of the four perspective' dynamics (Kaplan & Norton, 2006).

Management may communicate the plan to the workforce and other stakeholders with the use of the balanced scorecard. Objectives balanced in order for management to effectively understand how the business performs, how it can reach its goals, and who is in charge of achieving those goals during the planning period (Ismail & Al-Thaoiehie, 2015).

Furthermore, the world of medicine is currently in shock because of Virus Disease Covid-19 pandemic that has swept the globe. Since then, Covid-19 has spread throughout Indonesia and has become a national issue. Covid-19 has had a huge impact on the world's evolution. Almost nothing, notably the realm of health, can avoid the advent of the Covid-19 virus, from economic, social, and daily living perspectives. In the present pandemic situation, enterprises "must continue to improve their performance in order to deliver exceptional service." To establish the amount of Covid-19's impact on company performance, it is required to use the Balanced Scorecard to measure performance during the Covid-19 crisis. In which this performance-measuring tool covers every aspect that then grouped into four main perspectives, namely: financial perspective, growth and learning perspective, internal business process perspective, and customer perspective. (Zeho, Setyowati, Hermawan, 2020; Lueg & Julner, 2014)

According Lose & Khuzwayo (2021) the Covid-19 virus has threatened to exacerbate in many developing countries developmental issues, so it is essential to sort out how to re-enforce small company incubation. According to Guillen (2020), the virus is a problem that needs both immediate and long-term solutions. Long-term planning and forethought are required for corporate success, as are holistic tactics. Technology adoption has become crucial for rebuilding business incubation and enhancing competitiveness, The business scorecard, as a tool for reviewing and promoting the viability of organizations, can be regarded a critical instrument for assessing and promoting their viability. Measurements provide critical information about an organization's past, present, and future. Technological advancements are likely to have an impact on the environment and wildlife a measuring system the 4IR linked to widespread technological adoption and the utilization of technological infrastructure and platforms such as artificial intelligence, cloud computing, robots, information communications technology, and internet data management Systems.

According to Wagdi *et al.* (2022), there is a new dimension to scorecards, which is risk. There is no doubt that performance cannot be evaluated without examining the company's risks.

2.5 CRMP scorecard development

Although primarily a health emergency, the COVID-19 virus is expected to have a significant economic impact. Many of us are old enough to recall the impact of the global financial crisis of 2008/2009. While cultural organizations were unaffected by a drop in visitors just a decade ago (Lindqvist, 2012), public financial support in several nations decreased in the wake of the crisis. Many countries' governments have quickly acted this time to avert business closures and layoffs, as well as to issue jobless benefits (Betzler *et al.*, 2020). Nonetheless, the pandemic has had a significant influence on government expenditures, and only time will prove what will be emphasized. Private assistance for the arts and culture by firms, foundations, and people maintained as an alternative to state support (Loots & Robinson, 2021).

By integrating both financial and non-financial measures and providing managers with a balanced view of different perspectives, BSC overcomes the limitations of financial-measure-oriented measuring performance. Non-financial factors like customer satisfaction, channel management, and customer knowledge are just as essential as financial ones like improved profit, net sales, and cost savings when evaluating the efficiency of CRMP efforts. As a result, BSC chosen as a well-coordinated and harmonized CRMP effectiveness evaluation tool. (Lehmann, Zahay& Peltier, 2013; Wu& Hung, 2007)

Contreras, Serra, & Jauregui (2021) refer to through challenges posed by a natural disaster; the companies exhibited their adaptability customer needs. By creating new value propositions, finding and serving new market opportunities, enhancing customer communications, reengineering distribution and logistics, and reorganizing product-service offerings, they developed adaptable CRMP strategies. These strategies used to highlight the links between CRMP resilience strategies and company dangers during disruptive events using the adaptive CRMP contingency model.

CRMP is an expression for customer relationship management, which refers to managerial attempts to manage business contacts with customers by fusing business procedures and technologies that aim to understand consumers' requirements. The various potential advantages that CRMP become increasing known to businesses. Listed below are a few potential advantages of CRMP :(Kahreh, Shirmohammadi& Kahreh, 2012) Customers will be more loyal and profitable leading to increased retention and providing value to the customer. In addition, adapting goods and services to individual needs.

Challenging events put long-term consumer relationships in risk, firms forced to create innovative tactics to reestablish customer value. Internal marketing, defined as the way a firm treats employees as internal customers to increase service quality and customer happiness while gaining long-term commercial benefits, is an important component of a CRMP strategy. On resiliency in the face of natural calamities, from the point of entrepreneurial marketing. Company adaptability during the COVID-19

pandemic studied recently in terms of firm performance, financial impact, customer behavior, and the influence of innovation and technology (Albuquerque *et al.*, 2020; Shen *et al.*, 2020; Eggers, 2020; Gu *et al.*, 2020; Serra & Jauregui, 2021). However, few studies have taken a marketing, strategic planning, or entrepreneurial approach to COVID-19.

Other sorts of measurement frameworks used to help strategy implementation in firms as well as to measure and manage performance. To present a complete picture of the situation, these include both financial and non-financial measures. The Balanced Scorecard (BSC) (Kaplan&Norton 1992) is a well-known example of such a system. It includes measures from four different perspectives that shown to be useful in making management decisions.

A viewpoint that reflects the company's ability to innovate and learn The BSC is a generic framework that tailored to meet specific needs. Kim *et al.* propose a CRMP-specific BSC that captures all of CRMP's advantages (Kim ,Suh&Hwang, 2003)

The customer value perspective, which measures the financial benefits gained from customers. the customer satisfaction perspective, which measures the level of satisfaction accomplished by products and services, the Customer Interaction perspective, which measures the business efficiencies of internal processes and multi-channel management, and the Customer Knowledge perspective, which measures the quality of customer knowledge are the four perspectives of their CRMP-specific BSC. This BSC is a useful framework for measuring CRMP success because it includes the financial, operational, and qualitative objectives of CRMP.(Reichold& Kolbe and Brenner, 2004; Hoseini & Naiej, 2013; Kahreh& Shirmohmmadi& Kahreh, 2012; Vazifehdust & Golestan & Baghani, 2014) refer to CRMP processes have a positive effect on organizational performance so that there is a strong correlation between the CRMP process and bank performance (financial, customer based, internal process and learning and growth.

Kim, Suh& Hwang. (2003) investigate how to evaluate the effectiveness of CRM using BSC and presenting objectives and metrics, this evaluation model as a customer centric model forced by four perspectives to analyzing the cause and effect relationship of the CRM process and make a case study to give further insights to help managers in decision-making process.

Prior as literature Reichold& Kolbe and Brenner, (2004); Hoseini & Naiej, (2013); Kahreh& Shirmohmmadi& Kahreh, (2012); Vazifehdust&Golestan&Baghani, (2014) refer to CRMP processes have a positive effect on organizational performance so that there is a strong correlation between the CRMP process and bank performance (financial, customer based, internal process and learning and growth.

Mohammed, Rsshid&Tahir,(2014); Sanasam, Pradhan&Mohanty (2022)a significant and positive relationship between CRMP technology and the four performance perspectives of financial, customer, internal processes, and learning and growth. Additionally, CRMP technology indicated, respectively, of the Variation in hotel performance indicators (financial, customer, internal process, and learning and growth.

The previous studies illustrate differing method to measure this relationship, furthermore categorized based on data type, as questionnaire for qualitative and balance scorecard for qualitative, as an acceptable model from the previous studies, our paper recommend BSC as an acceptable method to evaluate and measure customer relationship management performance for the sample data.

3. Methodology

3.1 Hypotheses development

The requirement to find the balance among individual operations clearly defined by the achievement of strategic aims based on four criteria of the BSC model. The parties concerned (stakeholders and shareholders) must, like in the CRMP model, identify a common ground. Compromise with all parties that have an impact on the organization, like to the BSC model. These strategic operations optimized and balanced on a regular basis. (Havlíček, Břečková, & Zampeta, 2013)

The focus of Hosseini&Naiej (2013)' work was to look into the impact of CRMP on organizational performance using four balance scorecard indicators. CRMP measures selected based on the initiation and maintenance relationships. Our findings are broadly in line with our expectations, and they give empirical support for the model definition we suggested. Both CRMP components are substantial predictors of all performance indicators, according to the findings. This holds true for all four-performance indicators financial, customer-centric, internal process, and learning and growth. Given these findings this research, managers may like for to measure the change in the CRMP process in addition to monitoring various performance indicators The Integration between BSC and CRMP in this paper are shown in Figure (2)

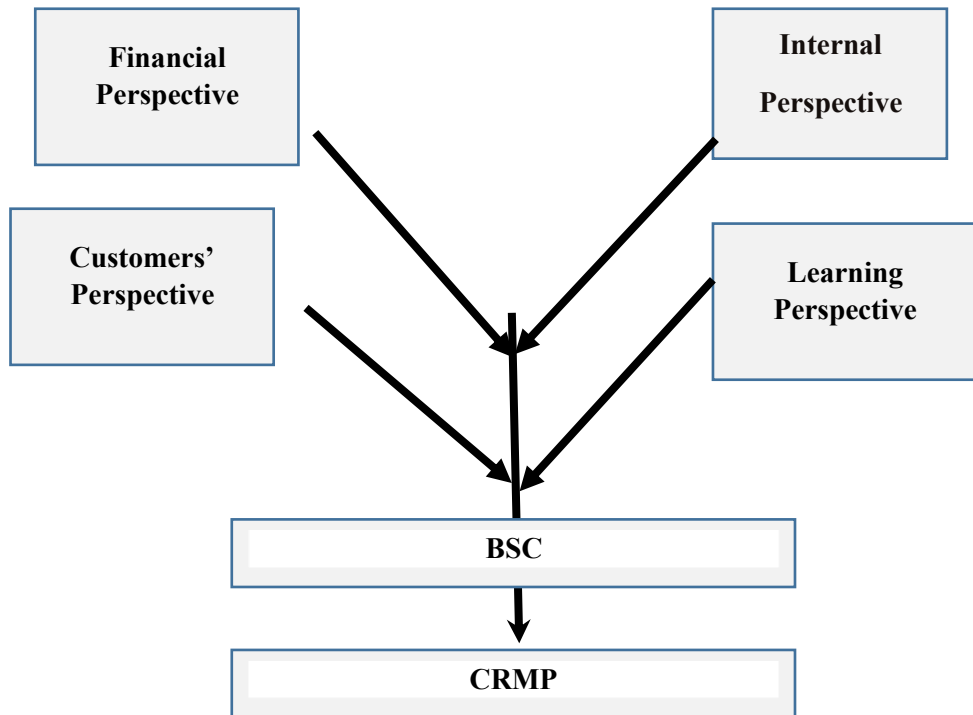


Figure (2). The Integration between BSC and CRMP

Hence, the following hypotheses formulate as follows:

H1: The balanced scorecard perspectives have a statistically significant impact on customer relationship management performance.

H₁₁: The financial perspective has a statistically significant impact on the customer relationship management performance.

H₁₂: The internal process perspective has a statistically significant impact on the customer relationship management performance.

H₁₃: The customers' perspective has a statistically significant impact on the customer relationship management performance.

H₁₄: The learning perspective has a statistically significant impact on the customer relationship management performance.

3.2 The variables and measurements

This paper uses three categories of variables the dependent variable, the independent variables and the control variables. The CRMP represents the dependent variable (Y), the BSC variables (X1-X5) represent the independent variables, and the control variables are the firm age and the leverage.

Table (1) Show the study variables; that are dependent and independent variables

Table 1. Show the study variables

Variable	code	Measure*	BSC Perspective
Independent variables	X1	return on investment	Financial Perspective
	X2	Return on equity	Financial Perspective
	X3	Size	Internal Perspective
	X4	customer growth	Customers' Perspective
	X5	Tobin-Q	Learning Perspective
Dependent Variables	Y	revenue growth	CRMP
Control Variables	C1	Age	
	C2	Leverage	

* Measures of this study dependent on the original work introduced by (Markonah, Salim& Franciska ,2020; Tornjanski,Knezevic. & Delibasic ,2017; Mohammed, Rashid & Tahir, 2014; Farooq& Masood,2016), furthermore added additional measures for perspectives as Tobin Q to quantify the innovation, change in assets value for internal business perspectives.

Hence, the relationship between the variables formulate as in the equation (1) below:

$$CRMP_{i,t} = \beta_0 + \beta_1 FP_{i,t} + \beta_2 FP_{i,t} + \beta_3 IBP_{i,t} + \beta_4 CP_{i,t} + \beta_5 ILP_{i,t} + \beta_6 Age_{i,t} + \beta_7 Leverage_{i,t} + \epsilon_{i,t}$$

(1)

Where:

FP	The financial perspective (X1)	$ROI = \frac{Net\ Profit}{Investments}$
FP	The financial perspective (X2)	$ROE = \frac{Net\ Income}{Equity}$
IBP	The Internal Business Perspective (X3)	$Size = \ln(Assets_t - Assets_{t-1})$
CP	customers' Perspective (X4)	$\Delta C = \frac{C_t - C_{t-1}}{C_{t-1}}$
ILP	Innovation and learning perspective (X5)	$Tobin\ Q = \frac{Stock\ Market\ value + net\ Liab}{Asset\ Value}$
CRMP	the customer relationship management performance(Y)	$\Delta S = \frac{S_t - S_{t-1}}{S_{t-1}}$
Age	(C1)	$Age = Sample\ Date - Listing\ Date$
Leverage	(C2)	$FL = \frac{Total\ Debt}{Equity}$

3.3 Data collection and sources

This paper used a cross-sectional data to analysis the impact of BSC on CRMP based on a sample of twenty-three companies that indexed in the EGX 50 Index and listed on the Egyptian Stock Exchange. The sample companies are categorized into six sectors during the period from 2014-2021. The company name of selected sample during period of study shown in appendix (1)

4. Data Analysis and Discussions of Results

4.1 Data analysis

Table (2) shows the descriptive statistics of the impact of BSC on CRMP; where it can be noted that in the period under study, the financial perspective using the ROA and ROE variables, therefore normal than other variables in the other perspectives' of the BSC Model, this results not only illustrated from table 2 only augmented by Q-Q Plot illustrated by figure 3.

Table 2.the descriptive statistics

	Mean	Median	Minimum	Maximum	St. deviation	Skewness	Kurtosis
Y	21.925	0.76170	-89.750	1110.9	99.066	8.8973	88.003
Financial Perspective							
ROA	5.4352	3.4713	-21.804	210.79	17.066	9.5196	112.42
ROE	11.987	9.5974	-651.61	480.69	87.305	-2.6329	34.724
Internal Perspective							
Size	5.5514	0.71855	0.096622	144.15	19.156	5.3003	29.649
Customers Perspective							
Customer Growth	1.1394e+010	2.0910e+009	2.7911e+006	1.3872e+011	2.1929e+010	3.0599	10.836
Learning Perspective							
Tobin's Q	5.5489	0.14000	-1.0000	643.14	51.474	11.204	130.51

Note: This table reports descriptive statistics of the CRMP Model for the period 2014-2021.

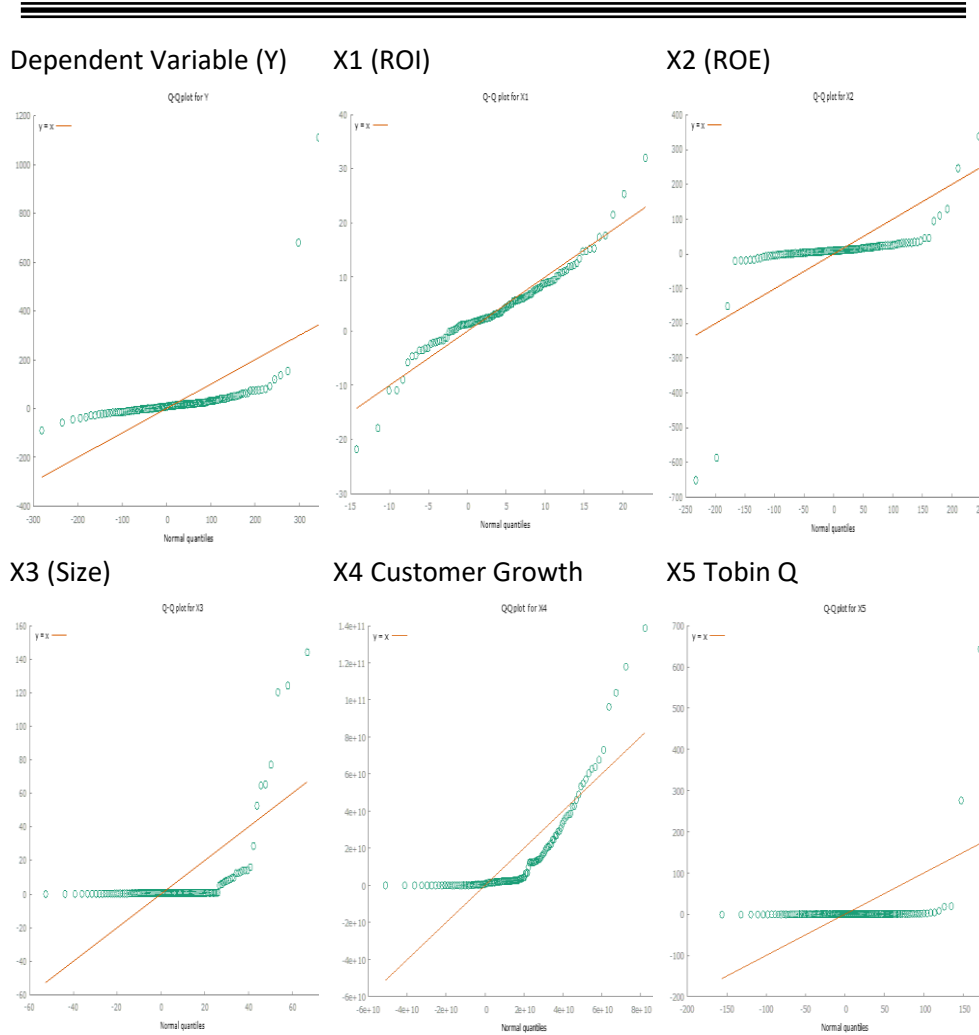


Figure 3. Q-Q Plot for the study variables.

Table 3 shows the statistical results of the impact of BSC on CRMP.

4.2 Discussions of Results

Discussion of results of the statistical analysis considered in two different steps; the first based on statistical analysis for sectors as categorized in appendix (1), and the second is based on the results revealed from the total sample from the EGX 50 Index.

The five-level statistical analysis results illustrate in different panels in Table 3. Panel (A) shows the results of all perspectives and concludes that none statistically significant, and without an impact of the financial perspective; the internal perspective, the customers' perspective, and the innovation and learning perspective on CRMP. The BSC affected (31.08%) of CRMP at the food, beverages and tobacco sectors.

Panel (B), Panel (C), panel (D), and panel (E) show that none statistically significant, and without an impact of the financial perspective, the internal perspective, the customers' perspective, and innovation and learning perspective respectively on the CRMP. The BSC affected (30.82%), (30.66%), (30.74%) and (30.82%) respectively.

Table 3.the statistical results for the Food, Beverages and Tobacco Sector

Panel A: All Perspective	β_0	β_1	β_2	β_3	β_4	β_5
Coef.	5.64716**	0.00974035**	0.00623009**	-0.011699**	-1.948e-010**	-0.00900234**
t.stat	(2.551)	(0.1257)	(0.2583)	(-0.04054)	(-0.2291)	(-0.4626)
R-sq	0.310833					
Panel B: Financial Perspective	β_0	β_1	β_2			
Coef.	5.17282***	0.0109592***	0.00605127***			
t.stat	(3.81)	(0.1495)	(0.2558)			
R-sq	0.308246					
Panel C: Internal Perspective	β_0	β_1				
Coef.	5.42283***	-0.0175884***				
t.stat	(4.15)	(-0.06253)				
R-sq	0.306590					
Panel D: Customers Perspective	β_0	β_1				
Coef.	5.84706***	-2.489e-010***				
t.stat	(3.071)	(-0.3114)				
R-sq	0.307438					
Panel E: Learning Perspective	β_0	β_1				
Coef.	5.48918***	-0.00825406***				
t.stat	(4.363)	(-0.4376)				
R-sq	0.308297					

Note: This table reports the estimated coefficients for the Eq(1). For the Food, Beverages and Tobacco Sector, the sample periods are from 2014–2021. Eq (1) estimates using WLS with Weights based on per-unit error variances. The T-statistics has reported in parentheses. ***, ** and * represent statistical significant at the 1%, 5%, and 10% levels.

Results for different panels in Table 4. Panel (A) shows the results of all perspectives and concludes that none statistically significant, and without an impact of the financial perspective; the internal perspective, the customers' perspective, and the innovation and learning perspective on CRMP, the BSC affected (31.08%) of CRMP at the industrial goods, services and automobiles Sectors.

Panel (B), Panel (C), and panel (D), show that none statistically significant, and without an impact of the financial perspective, the internal perspective, and the Customers' Perspective respectively on the CRMP, the BSC affected (4.67%), (0.676%), and (0.268%) respectively.

Panel (D) shows that the innovation and learning perspective a statistically significant, and with an impact specifically by Tobin-Q (X5) on the CRMP, and the BSC affect by (34.64%), and this result matched with (Mohammed et al.,2014 ; Sanasam et al.,2022) but not only in financial, and hotel(services) sectors only, but can be observed in the industrial sector.

Table 4.the statistical results for the Industrial Goods , Services and Automobiles Sector

Panel A: All Perspective	β_0	β_1	β_2	β_3	β_4	β_5
Coef.	5.24193***	-3.90032***	1.61051***	-0.262226**	-2.078e-010***	51.2739*
t.stat	(0.3758)	(-1.650)	(1.824)	(-0.09476)	(-0.4127)	(3.748)
R-sq	0.310833					
Panel B: Financial Perspective	β_0	β_1	β_2			
Coef.	14.2706***	0.191948***	0.391871***			
t.stat	(1.623)	(0.08523)	(0.4522)			
R-sq	0.046711					
Panel C: Internal Perspective	β_0	β_1				
Coef.	23.1175*	-0.845372*				
t.stat	(1.923)	(-0.2875)				
R-sq	0.006758					
Panel D: Customers Perspective	β_0	β_1				
Coef.	19.8466*	1.87E-11*				
t.stat	(1.823)	(0.03009)				
R-sq	0.002698					
Panel E: Learning Perspective	β_0	β_1				
Coef.	6.88703***	38.1644***				
t.stat	(1.086)	(3.244)				
R-sq	0.346443					

Note: This table reports the estimated coefficients for the Eq(1). For the Industrial Goods, Services and Automobiles Sector, the sample periods are from 2014 –2021. Eq (1) estimates using WLS with Weights based on per-unit error variances. The T-statistics has reported in parentheses. ***, ** and * represent statistical significant at the 1%, 5%, and 10% levels.

The statistical analysis results illustrate in different panels in Table 5. Panel (A) shows the results of all perspectives and concludes that none statistically significant, and without an impact of the financial perspective; the internal perspective, the customers' perspective, and the innovation and learning perspective on CRMP, the BSC affected (13.17%) of CRMP at the real estate sector.

Panel (B), Panel (C), panel (D), and panel (E) show that none statistically significant, and without an impact of the financial perspective, the internal perspective, the customers' perspective, and innovation and learning perspective respectively on the CRMP, the BSC affected (6.21%), (7.57%), (12.88%) and (6.24%) respectively.

Table 5.the statistical results of the Real Estate Sector

Panel A: All Perspective	β_0	β_1	β_2	β_3	β_4	β_5
Coef.	-123.654***	1.09606***	-0.0961075***	81.2252***	3.11E-09***	-9.61493***
t.stat	(-0.5514)	(0.0842)	(-0.03555)	(0.2542)	(1.193)	(-0.06138)
R-sq	0.131703					
Panel B: Financial Perspective	β_0	β_1	β_2			
Coef.	51.9193***	0.859217***	-0.0833878***			
t.stat	(1.048)	(0.06823)	(-0.03237)			
R-sq	0.062123					
Panel C: Internal Perspective	β_0	β_1				
Coef.	-75.6457***	180.529***				
t.stat	(-0.3645)	(0.635)				
R-sq	0.075702					
Panel D: Customers Perspective	β_0	β_1				
Coef.	-70.7433***	3.31E-09***				
t.stat	(-0.7571)	(1.44)				
R-sq	0.128840					
Panel E: Learning Perspective	β_0	β_1				
Coef.	56.4084***	-18.0951***				
t.stat	(1.396)	(-0.1247)				
R-sq	0.062437					

Note: This table reports the estimated coefficients for the Eq(1). For the Real Estate Sector, the sample periods are from 2014 –2021. Eq (1) estimates using WLS with Weights based on per-unit error variances. The T-statistics has reported in parentheses. ***, ** and * represent statistical significant at the 1%, 5%, and 10% levels.

The statistical analysis results illustrate in different panels in Table 6. Panel (A) shows the results of all perspectives and concludes that none statistically significant, and without an impact of the financial perspective; the internal perspective, the customers' perspective, and the innovation and learning perspective on CRMP, the BSC affected (23.28%) of CRMP at the textile & durables sector.

Panel (B), Panel (C), panel (D), and panel (E) show that none statistically significant, and without an impact of the financial perspective, the internal perspective, the customers' perspective, and innovation and learning perspective respectively on the CRMP, the BSC affected (10.75%), (1.16%), (1.66%) and (12.48%) respectively.

Table 6.the statistical results of the Textile & Durables Sector

Panel A: All Perspective	β_0	β_1	β_2	β_3	β_4	β_5
Coef.	-3.96355***	4.49791***	-1.83811***	-0.119154***	1.93E-09***	31.0649***
t.stat	(-0.1258)	(0.6532)	(-0.4974)	(-0.3094)	(0.4445)	(1.119)
R-sq	0.232822					
Panel B: Financial Perspective	β_0	β_1	β_2			
Coef.	2.85352***	5.28358**	-1.95524***			
t.stat	(0.2974)	(0.8825)	(-0.5894)			
R-sq	0.107502					
Panel C: Internal Perspective	β_0	β_1				
Coef.	11.7055***	-0.0731566***				
t.stat	(0.8183)	(-0.2566)				
R-sq	0.011611					
Panel D: Customers Perspective	β_0	β_1				
Coef.	0.514623***	1.43E-09***				
t.stat	(0.02189)	(0.3632)				
R-sq	0.016582					
Panel E: Learning Perspective	β_0	β_1				
Coef.	6.00171***	28.6932***				
t.stat	(0.8098)	(1.325)				
R-sq	0.124752					

Note: This table reports the estimated coefficients for the Eq(1). For the Textile & Durables Sector, the sample periods are from 2014 –2021. Eq (1) estimates using WLS with Weights based on per-unit error variances. The T-statistics has reported in parentheses. ***, ** and * represent statistical significant at the 1%, 5%, and 10% levels.

The five-level statistical analysis results illustrate in different panels in Table 7. Panel (A) shows the results of all perspectives and concludes that none statistically significant, and without an impact of the financial perspective; the internal perspective, the customers' perspective, and the innovation and learning perspective on CRMP, the BSC affected (13.39%) of CRMP at Egyptian the EGX 50.

Panel (B), panel (C), and panel (E) show that none statistically significant, and without an impact of the financial perspective, the internal perspective, and innovation and learning perspective respectively on the CRMP, the BSC affected (10.53%), (9.92%), and (9.91%) respectively.

Panel (D) shows that the customers' perspective a statistically significant, and with an impact specifically by customer growth (X4) on the CRMP, and the BSC affect by (12.73%), this results ate in line with those of Contreras et al. (2021); where companies affected by disasters the companies exhibited their adaptability customer needs. By creating new value propositions, finding and serving new market opportunities.

Table 7.the statistical results for the EGX 50 Index

Panel A: All Perspective	β_0	β_1	β_2	β_3	β_4	β_5
Coef.	-3.5164**	0.227610**	0.0805497**	-0.062843**	2.07825e-09**	-0.016729**
t.stat	(-0.2501)	(0.4194)	(0.7922)	(-0.07224)	(2.267)	(-0.1028)
R-sq	0.133892					
Panel B: Financial Perspective	β_0	β_1	β_2			
Coef.	19.9242**	0.185473**	0.0827945**			
t.stat	(2.518)	(0.3420)	(0.8091)			
R-sq	0.105272					
Panel C: Internal Perspective	β_0	β_1				
Coef.	22.3669**	-0.0796593**				
t.stat	(2.524)	(-0.09111)				
R-sq	0.099170					
Panel D: Customers Perspective	β_0	β_1				
Coef.	-1.60921**	2.06541e-09				
t.stat	(-0.1271)	(2.274)				
R-sq	0.127331					
Panel E: Learning Perspective	β_0	β_1				
Coef.	21.9573***	-0.005838***				
t.stat	(2.940)	(-0.03611)				
R-sq	0.099131					

Note: This table reports the estimated coefficients for the Eq(1). The EGX 50 Index, the sample periods are from 2014 –2021. Eq (1) estimates using WLS with Weights based on per-unit error variances. The T-statistics has reported in parentheses. ***, ** and * represent statistical significant at the 1%, 5%, and 10% levels.

4. Conclusions and suggestions for future research

This paper investigates the impact of customer relationship management performance is inseparable from the company's performance; it is an aspect of the business environment where customer service cannot manage without financial, internal; customers; and learning. The previous studies applied in specified sectors like products and services sectors (Food, Hotels) and Financial Sector (Banking sector) to find a direct relation and significant results with a high recommendation to measure this relation by BSC technique. We used a suggested cross-sectional analysis to measure the impact of BSC on CRMP based on twenty-three companies operating in the EGX 50 index listed on the Egyptian Stock Exchange from 2014-2021. With a new definition for the traditional perspectives of the BSC technique to the different characteristics of the financial variables.

- first, the BSC technique affected by the size, and leverage characteristics. then varying results with different sectors and sample periods, to conclude with sectors with large size and low leverage the technique can be highly significant than others, second the results shown the drawback of value-weighted indexes to measure CRMP relationship thought this technique can be affected with different significant perspectives'

-it is recommended that measure the relationship in future research between time varying techniques and customer relationship, or can be measured by the same technique but with high curiosity with some sectors with high size but low leverage level, and some equally weighted indexes like EGX100 or EGX70.

- additionally future research can expand the sample size with different periods and taking more financial variables to measure different perspectives' but with Principle component analysis to suggest a new view for BSC as a quantitative model.

Appendix (1)

The sample

NO.	Company Name	Reuters	Listing Date
Travel & Leisure Sector			
1	Egyptian for Tourism Resorts	EGTS.CA	10/02/1999
Basic Resources Sector			
2	Ezz Steel	ESRS.CA	25/05/1999
Food, Beverages and Tobacco Sector			
3	Delta Sugar	SUGR.CA	01/04/1992
4	Cairo Poultry	POUL.CA	01/11/1995
5	Edita Food Industries SAE	EFID.CA	01/12/2014
6	Ismailia Misr Poultry	ISMA.CA	01/06/1995
7	Ajwa Group for Food Industries	AJWA.CA	01/09/1995
8	Arabian Food Industries Co	DOMT.CA	01/12/2015
9	The Arab Dairy Products Co. Arab Dairy – Panda	ADPC.CA	01/01/2001
10	Juhayna Food Industries SAE	JUFO.CA	01/05/2010
11	Mansoura Poultry	MPCO.CA	01/02/1995
12	Northern Upper Egypt Development and Agricultural Production	NEDA.CA	01/11/1998
13	Obour Land for Food Industries	OLFI.CA	04/05/1997
Industrial Goods , Services and Automobiles Sector			
14	GB AUTO	AUTO.CA	01/01/2007
15	Electro Cable Egypt	ELEC.CA	30/03/1995
16	El Sewedy Electric Co SAE	SWDY.CA	01/05/2006
Real Estate Sector			
17	T M G Holding	TMGH.CA	25/11/2007
18	Six of October Development & Invest	OCDI.CA	10/03/1998
19	Madinet Nasr Housing and Development	MNHD.CA	01/05/1995
20	Palm Hills Development Co SAE	PHDC.CA	01/01/1997
21	Emaar Misr for Development SAE	EMFD.CA	01/03/2015
Textile & Durables Sector			
22	Oriental Weavers	ORWE.CA	14/12/1994
23	Arab Cotton Ginning	ACGC.CA	01/06/1995

Source: Egyptian Stock Exchange Data

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تأثير بطاقة الأداء المتوازن على أداء إدارة علاقات العملاء: دليل من مصر

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الملخص باللغة العربية

الغرض - تهدف هذه الدراسة إلى تحليل تأثير ابعاد بطاقة الأداء المتوازن (BSC) على إدارة علاقات العملاء (CRMP).

التصميم / المنهجية / المنهج - تستخدم هذه الدراسة البيانات الثانوية لثلاث وعشرين شركة مدرجة في سوق الأوراق المالية المصرية خلال الفترة ٢٠١٤-٢٠٢١.

النتائج - تشير النتائج إلى أن تأثير بطاقة الأداء المتوازن BSC ذو تأثير إحصائي كبير على نموذج إدارة علاقات العملاء CRMP. ولكن ليست كل جوانب BSC لها نفس التأثير؛ حيث يكون لجانب الابتكار والتعلم في بعض القطاعات مثل السلع الصناعية والخدمات والسيارات تأثير على إدارة علاقات العملاء. بشكل عام، كان تأثير نموذج BSC على نموذج CRMP بمعامل تحديد يقدر بحوالي (٣٤,٦٤٪)، دون مراعاة أي تأثير للقطاعات الأخرى. بالإضافة إلى ذلك، فإن جانب العملاء في عينة الشركات له تأثير كبير على إدارة علاقات العملاء؛ حيث أثرت الشركات المدرجة في مؤشر EGX 50 على نتائج نموذج BSC على نموذج CRMP بمعامل تحديد يقدر بحوالي (١٢,٧٣٪).

قيود البحث / الآثار المترتبة على البحث - يستخدم التحليل مؤشراً لتحديد أداء السوق خلال الفترة من ٢٠١٤-٢٠٢١، ويتم اختيار البيانات للعينة عشوائياً اعتماداً على احدي مؤشرات البورصة المصرية (EGX 50)، علاوة على ذلك يتم استخدامها فقط للأسهم الثابتة طوال الفترة الموضحة أعلاه.

الآثار العملية - ستضيف نتائج هذه الدراسة إلى الأدبيات وتوفر المزيد من الأدلة التجريبية المتعلقة بأحد الاقتصادات الناشئة، مثل مصر. علاوة على ذلك، يمكن أن ترفع الوعي بين مديري الشركات وأصحابها حول أهمية استخدام BSC كأحد تقنيات المحاسبة الإدارية التي من شأنها أن تساعد في تقييم الأداء.

الأصالة / القيمة - يمكن أن يكون استخدام BSC مساعد في تحسين CRMP، مع الأخذ في الاعتبار لطبيعة الخصائص الرئيسية للشركة، مما يجعل القرار المبني على المعلومات أكثر إفادة في عملية صناعة واتخاذ القرارات.

الكلمات الدالة: بطاقة الأداء المتوازن، وأداء إدارة علاقات العملاء، بعد العمليات التجارية الداخلية، بعد العملاء، بعد الابتكار والتعليم والبعد المالي.