
The Application of the TOE Framework to the Adoption of CRM by SMEs in KwaZulu Natal

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ABSTRACT

Purpose: Small And Medium Enterprises (SMEs) play an important role in the development of economies despite a plethora of problems that stifle their growth. The study unpacked the application of the Technological, Organisational, Environmental (TOE) framework as a guide for the adoption of CRM strategies.

Design/methodology/approach: A quantitative research method was used to evaluate these factors. The adoption of Customer Relationship Management (CRM) is one of the solutions that can help SMEs to endure and overcome economic hardships.

Findings: The benefits that can be derived from CRM are too compelling to pass up the opportunity and indeed, the future prosperity of SMEs may lie in CRM adoption.

Research limitations/implications: Even though technological, environmental, organisational factors are paramount, education, stood out as the major driver of adoption.

Practical implications : This study therefore concludes that the TOE framework needs to be extended by education and contextualised to the geo-political and social settings of the SMEs under investigation.

Originality/value: This paper is original

Paper type: a Research Paper

Keywords: Economic growth, Customer Relation Management (CRM), Small-medium enterprises (SMEs), Technology-organisation-environment (TOE), KZN, CRM Adoption

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I. INTRODUCTION

The importance of SMEs in any economy cannot be overstated (Hassan, Mohamed Haniba and Ahmad 2019) and this is especially true in emerging and developing economies of the Africa continent (Love and Roper 2013). This is further supported by Fatoki (2014) who averred that SMEs are critical in addressing unemployment, income disparity, and long-term economic growth. SMEs are highly valued by the government and their failure is viewed as a failure of the entire economy (SEDA 2016). Problems faced by Small and medium-sized firms have been researched extensively by researchers throughout the world, including those in South Africa (SEDA 2016). One of the reasons why small businesses fail is because they are unable to attract and retain customers. Attempts have been made in this sector to use Customer Relationship Management (CRM) to avert failure. The question therefore is whether CRM is a panacea or a Pandora's box for SME survival.

CRM is not often considered a strategy for SMEs (Meyliana et al. 2017), but there is an advantage for owners of small businesses over larger corporations because of the personal relationships they have with their customers (Starzyczná, Pellešová and Stoklasa 2017). SMEs in KZN could benefit from the adoption of customer relationship management (Galvão et al. 2018) as well as strengthening the government's policy initiative to grow the SME sector (Maziriri and Chivandi 2020). Garcia, Pacheco and Martinez (2012) reiterated that research on CRM in SMEs is mainly based on information gathered from large organisations, hence it focuses on the attributes of these corporations. This research will therefore move away from the common

trajectory of copying CRM practises from large organisations onto small enterprises. CRM adoption in SMEs should not be considered as a scaled-down version of larger enterprises (Alshawi, Missi and Irani 2011).

This research therefore endeavours to identify and empirically test the major factors that directly or indirectly interact with the adoption and implementation of CRM strategies by SMEs. By so doing, the study seeks to provide a thorough and broader grasp of CRM adoption in SMEs, which will allow other researchers to relate their experiences to the output of this study and to give guidelines to CRM practitioners and policy-makers. The current research mainly investigated SMEs registered and funded by the Department of Small Business Development, supported by Durban University of Technology (DUT) at the Centre for Social Entrepreneurship Rapid Incubator (CSERI).

II. REVIEW OF LITERATURE

There is no consensus on the definition of a small to medium-sized enterprise (ar Jassim and Khawar 2018). The majority of definitions are derived from World Bank guidelines that categorize SMEs by their total asset value, annual revenue in US dollars, and employee head count (Garatsa and Dlamini 2021). However, the critical role of SMEs in revitalizing economies in both developing and developed countries is widely recognized (Soni, Cowden and Karodia 2015). Indeed, SMEs have been identified as engines for achieving third-world countries' developmental goals due to their capacity to adapt quickly to changing customer needs, ability to mobilize idle funds, and hire from local communities (Adeyele and Omorokunwa 2017). It has been observed that the socio-economic stability of the country may be threatened by high levels inequality, joblessness and poverty (Bailey 2019). The government of South Africa has huge political and policy commitments towards the support of SMEs as an engine to drive job creation, equitable income distribution and poverty alleviation. (Masutha and Rogerson 2014).

Despite their importance, a huge number of SMEs are reported to close before the fifth year of establishment (Adeyele and Omorokunwa 2017). Support of the above comes from Gonsalves and Rogerson (2019), who retorted that newly established businesses have failed dismally during the first stages of existence. Due to the important role they play in economic growth (Lekhanya 2016), failure by SMEs is viewed as failure of the whole economy. Teng, Bhatia and Anwar (2011), discovered the variables that can influence the survival or closure of small enterprises. These include inadequate venture capital; the calibre of staff employed in a firm, level of education of and age the owner, partnerships with other businesses, marketing expertise, availability of external consultants, strategic planning, managerial experience, marginalised business owner, experience in the industry, family business ownership, financial control, timing of the product and record keeping.

Findings by Fatoki (2014) pointed out factors like crime and corruption, a weak education that does not encourage entrepreneurship, a weak legal system that does not enhance property rights and enforcement of contracts. Corruption and 'tenderpreneurship' has reached alarming levels in South Africa in comparison to other nations. According to the Global Entrepreneurial Monitor (GEM) report, corruption and crime are the major obstacles to the development of SME South Africa (Sitharam and Hoque 2016). Failure to attract and retain customers is one of the problems attributed to the failure of SMEs (Garatsa and Dlamini 2021). Failure to fully comprehend these factors may lead to the demise of small firms.

CRM can thus be employed as a strategic tool for small and medium-sized enterprises. It is acknowledged that CRM practices have to be part and parcel of the daily business operations of such enterprises to gain competitive edge over peers. CRM adoption by SMEs would enable the provision of valuable information, enhanced knowledge, and relationships with its suppliers and customers (Salah, Yusof and Mohamed 2019). CRM's ultimate goal is to establish a long-term relationship with a select group of clients to achieve a competitive advantage. This approach to relationship management therefore acknowledges the critical aspect of customer retention over a lengthy period (Alves, Campón-Cerro and Hernández-Mogollón 2019). Value creation for the targeted clientele improves the association with customers by recognising their unique needs and to retain them by offering products of high value and offering attractive services to prospective customers. This therefore reduces customer acquisition costs while increasing the bottom line (Bashir 2017).

Salah, Yusof and Mohamed (2019) averred that SMEs can successfully adopt CRMs. SMEs' proximity to customers can give them a unique competitive advantage (Hasani, Bojei and Dehghantanha 2017). SMEs are 'organic' from an administrative and strategic standpoint, and are frequently viewed as an extension of the entrepreneur's own personality (Stankovska, Josimovski and Edwards 2016). In particular, SMEs can form closely-nit personal relationships with clients than bigger firms (Galvão et al. 2018). Although term CRM is not familiar in SMEs, it occurs almost unconsciously. This approach is close to intuitiveness in doing business (Galvão et al. 2018). However, we have noted that CRM adoption in the SME sector needs a new viewpoint that is tailored to the issues faced by SMEs in order to fully comprehend these challenges so as to realize the full

potential of the sector. There is a need to refocus attention away from the available collateral in the business and move towards the business's viability and capabilities of the owner (Garatsa and Dlamini 2021). Therefore, it is crucial for SMEs to integrate CRM strategies into their everyday business operations go be ahead of competition.

The deduction from the above argument is that research studies on CRM in context of SME is under-developed (Garcia, Pacheco and Martinez 2012). The success or failure of newly established companies may therefore be influenced by the design of CRM technologies to facilitate customer interaction during the design and delivery of goods and services (Hasani, Bojei and Dehghantanha 2017). However, SMEs are unique in their own way. This has a major bearing on the adoption and implementation of a CRM initiatives. As such, the current study aims to build a new framework for increasing CRM adoption among SMEs in KZN. This would provide more in-depth understanding on CRM adoption by SMEs in developing nations, particularly in South Africa.

III. THEORETICAL UNDERPINNING

A number of theories have been propounded to explain the adoption of technologies by businesses to enhance competitiveness. These theories include the Diffusion of Innovation (DOI), Technology, Organisation, and Environmental (TOE) framework, Resource-based view (RBV), Technology Acceptance Model (TAM) and The Unified Theory of Acceptance and Use of Technology (UTAUT). Developed by Rogers (2003), the DOI describes innovation as concepts, practices, or products viewed as novel by individuals or adopting units. It was argued that numerous qualities of innovative products influence their adoption. Their relative advantage, compatibility, intricacy, divisibility, and observability are among these properties (Hassan, Mohamed Haniba and Ahmad 2019). Introduced by Tornatzky and Fleischer in 1990, the TOE focused on the internal and external factors that influence the adoption of technologies by organisations (Riyadh et al. 2019).

The RBV framework describes a firm's valuable and scarce resources and competencies that might provide it with a competitive edge on the market. These enable a firm to design and execute strategies that result in lower net expenses and higher net revenues (Dubey and Sangle 2019). The TAM was established by Davis (1989) with the purpose of predicting and determining the elements influencing user acceptance of technology. TAM model includes two constructs: perceived usefulness (PU) and perceived ease of use (PEOU) which ultimately influences the choice to adopt a given technology (Venkatesh et al. 2003). UTAUT which was developed by Venkatesh, Morris, Davis, and Davis (2003) integrated eight dominant theories and models that had been extensively and successfully tested in prior studies on technology innovation adoption and diffusion in various fields. The UTAUT theory is composed on four basic concepts that are viewed as independent factors that have an effect on the dependent variables, which take the shape of behaviours and use. (Salah, Yusof and Mohamed 2019).

IV. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESIS

The constructs of the TOE have been assumed to be more relevant and applicable to large firms only, however, Awa, Ukoha and Emecheta (2016) argued that the framework has been empirically validated across all firm sizes. Gono, Harindranath and Özcan (2016), noted that the TOE is an integrative framework that provides a holistic theoretical basis for research. Given that this study focuses on the analysis of factors that affect the adoption of CRM strategy and from the enterprises' perspective. The TOE framework with the information culture context as an external variable is adopted as the main research model in this study. This therefore becomes the launchpad for this research because the goal was to move away from the misconception that CRM is a technology but gravitate towards treating CRM as a holistic strategy that should diffuse throughout the organization.

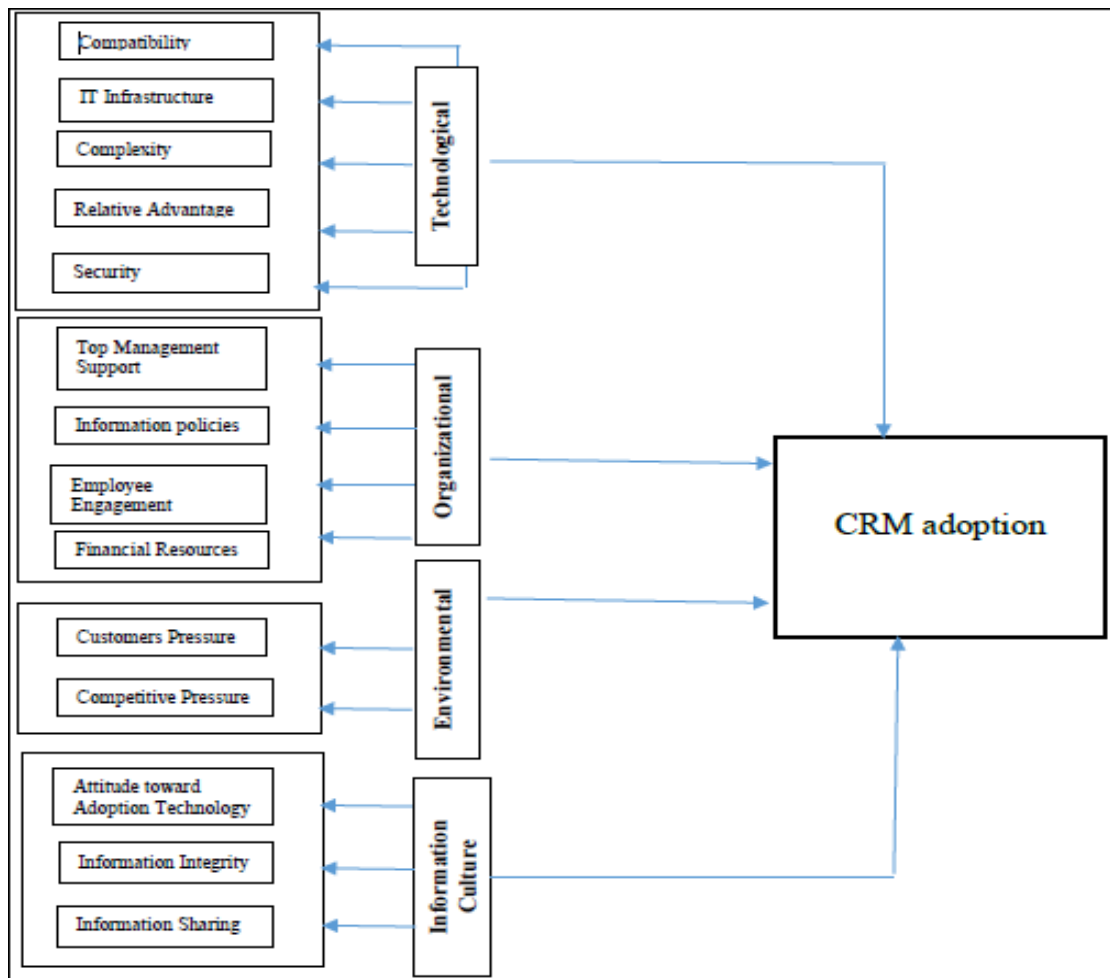


Fig 1: Theoretical framework

Adapted from Salah, Yusof and Mohamed (2019)

A. Technological Context

The technological context is connected to the external and internal technological tools and processes (Junior, Oliveira and Yanaze 2019). It describes the technologies exploited by the organisation, the characteristics of technology and those which may be relevant in the future (Azevedo 2013). External and internal technologies are vital for the enhancement of productivity within the organisation (Salah, Yusof and Mohamed 2019). Salah et al. (2019) posited that SMEs engage in technology to improve the efficiency and efficacy of productivity. Compatibility, Technology competence, relative advantage, security, complexity and data quality are some of the major determinants in the technological context (Nghah, Zainuddin and Thurasamy 2017) and are therefore included as variables in the technological factors for this study. This study therefore proposes the following hypothesised relationships on technology context.

H1: Compatibility will positively influence CRM adoption.

H2: The level of technology competence will positively influence CRM adoption.

H3: Complexity will negatively influence CRM adoption by SMEs in KZN.

H4: Good data quality and integration will positively influence CRM adoption.

H5: Relative advantage will have a significant influence on attitude towards adoption of CRM strategies by KZN SMEs.

B. Organisational Context

The organisational context denotes the firm's traits that are capable of hindering or of facilitating CRM adoption (Gono, Harindranath and Özcan 2016). The parameters within the firm that have the most significant influence to the decision to adopt an innovation are what Chavoshi, Sim and Hee (2015) referred to as organisational characteristics. These include informal and formal structures that link the communication processes, size, and dormant resources (Ahmad *et al.* 2015). Top management support, employee engagement, perceived benefits, firm size and financial commitment are the variables included in this construct. This study therefore proposed the following hypothesised relationships on organisational context.

H7: Enterprises with greater TMS are more likely to adopt CRM.

H8: Employee engagement has a positively influences CRM adoption by SMEs.

H9: Higher perceived benefits will positively influence CRM adoption.

H10: Firm size will positively influence CRM adoption.

H11: Financial commitment will positively influence CRM adoption.

C. Environmental Context

Awiagah, Kang and Lim (2016), established that the environment can impede or encourage an organisation's adoption of innovations. The elements external to the firm that influence the company's decision to adopt new applications, such as government involvement, customers' pressure and competitive pressure and customer satisfaction are referred to as environmental context (Salah, Yusof and Mohamed 2019). This study therefore proposes the following hypothesised relationships on environmental context.

H12: Consumer pressure has a positive impact on CRM adoption

H13: CRM adoption is positively influenced by emphasis on customer satisfaction

H14: Competitive pressure will positively influence CRM adoption.

H15: Governmental support will positively influence CRM adoption

D. Information culture context

Information culture is another key variable in the adoption of new technology in every organisation (Salah, Yusof and Mohamed 2019). Hannachi (2015) advanced the notion that information is the backbone of CRM, thus, a vibrant information culture is paramount within the organisation. Information culture therefore plays an important role in influencing the success or failure of CRM initiatives. Information sharing, attitude towards the adoption of technology and information integrity are the variables of this construct adopted for this study. This study therefore proposed the following hypothesised relationships on information culture context.

H16: Positive attitude towards adoption of CRM influences the level CRM technology utilisation among SMEs.

H17: Information integrity has a positive effect on CRM adoption by KZN SMEs.

H18: Information sharing has a positive effect on CRM adoption

V. METHODOLOGY

The research employed a quantitative methodology to facilitate and expedite the process of contacting respondents as well as gathering data (Dawson 2007). The researchers endeavoured to identify and examine the significant factors that influence the adoption and implementation of CRM strategies by SMEs by utilising the quantitative research design (Sousa, Driessnack and Mendes, 2007). This study measured the outcomes of the research against an existing TOE framework. The intention was to validate, establish and confirm relationships and to contribute towards the growth of the body of CRM knowledge (Leedy and Ormrod, 2010). A systematic questionnaire based on the TOE framework was developed captured on a survey monkey platform and the created link was shared with the participants registered under CSERI. The participants were drawn from both rural and urban SMEs based in the eThekweni Metropolitan. The population sample included SMEs from the manufacturing (43%), engineering/construction (38%), agriculture retail (7%) and services sectors (12%). The sample size of 384 calculated using the Raosoft calculator. Following (Israel 1992), the sample size was calculated using Equation (1) below:

$$n = \frac{n_o}{1 + \frac{(n_o - 1)}{N}} \quad (1)$$

Where, n is the sample size, N the population size and n_o is defined by $(Z^2 pq) / e^2$, here Z^2 is the desired confidence interval, p is the estimated proportion of an attribute that is present in the population, and q is 1-p and e is the margin of error (Israel 1992).

The questionnaire comprised 26 questions which included owner-manager and organisational demographics and the perceptions of the respondents with regard to the TOE framework that influence the

decision to adopt and implement CRM programmes were investigated using the five-point Likert scale (Joshi et al. 2015). Data was analysed using SPSS version 27 software. Finally stepwise Logistic regression was utilised to identify key variables influencing the adoption of CRM (Rahimi and Gunlu 2016).

Due diligence was exercised in developing accurate and valid data collection and analytical methods for the purpose of gathering information. The data collection tool was distributed to industry experts, academics, and peers for review to ensure validity and to address all study objectives. This resulted in the rephrasing and rearrangement of questions. The researchers ensured that all variables were adequately measured and pre-tested for validity with the general population (Neuman 2014). However, the results were not included in the final analysis. The Cronbach alpha test was used to determine the reliability coefficient of the data gathering device (Abed 2020). Independent variable

VI. DATA ANALYSIS AND DISCUSSION

A. Regression model output

This study used logistic regression to identify key variables which influence the adoption and implementation of CRM strategies by SMEs in KZN. Logistic regression is one of the main methods used to solve binary classification problems (Midi, Sarkar and Rana 2010) like establishing whether a firm adopted and implemented CRM as part of their strategy. In this study, in order to effectively deal with multicollinearity, stepwise logistic regression modelling was adopted. A stepwise regression model was run to depict the drivers for CRM adoption and by SMEs in KZN. Forward stepwise modelling was used to select the independent variables to be included in the model to forecast the dependent variables. Logistic regression was done, whereby the demographics and factors from the TOE and information culture were treated as dependent variables and the adoption and implementation of CRM as the independent variable. The results obtained from regression model showed that education is the most significant determinant in explaining the likelihood of CRM adoption and implementation.

Table 1. CRM

<i>Variable</i>	<i>Beta</i>	<i>Sig</i>
<i>CRM Compatibility</i>	<i>3.474</i>	<i>0.001</i>
<i>Information Security</i>	<i>2.063</i>	<i>0.001</i>
<i>Education</i>	<i>.684</i>	<i>0.045</i>

The level of education is considered to be an important variable when it comes to CRM adoption. One needs to have the basic qualifications to venture into this sector; thus, the owner-managers with degrees or better qualifications usually fare better when it comes to understanding the CRM concepts. Therefore, education can be viewed as a major predictor of the decision to adopt CRM.

Education also has a direct influence on other factors like the attitude towards CRM adoption as it shapes one's understanding of technology. Thus, the attitude is most likely to be swayed towards adoption. It has also been observed that education can play a key role in TC of a firm which has been noted as a major factor in technology adoption. It was noted that it is easier to get the right fit between technology and strategy if people are trainable. Education therefore takes away the phobia for technology. Data quality and integration have also been acknowledged as vital determinants of CRM adoption. Scholars have noted that poor data sets and integration have led to the demise of many CRM projects (Azevedo 2013). Education can therefore be an enhancer of quality and integration. The takeaway from this section is that though education is a strong predictor of the likelihood of adoption, it also has a moderating effect on other variables that also influence adoption.

Information security and compatibility which are variables were identified as the key drivers of CRM adoption and implementation by SMEs in KZN. These two factors have a very strong statistical significance of 0.001. Compatibility was identified as a very good facilitator of CRM adoption and implementation. SMEs usually assume the personality of the owner-manager such that the decision to adopt and implement is easier if the owner has an inclination that the innovation will fit into the existing norms and values of the organisation.

The phobia for change and technology can be an obstacle to adoption; thus, the SMEs need assurance that there past experiences and current needs are addressed.

The majority of SMEs in this study singled out information security as a major concern. The fact of the matter is that organisations are willing to adopt CRM if they are given assurance that the classified firm and customer information will be secure. On the other hand, SMEs are not willing to adopt if they feel that the systems are not secure enough to avoid leakage of vital information which will cede competitive edge to rivals. Owners would rather remain in a secure bubble than risk closure when organisational information becomes public knowledge.

It can be noted that these factors are part of the technological context of the TOE framework. One can deduce that the participants view CRM as a tool and not as a strategy. The organisational and environmental constructs were not as influential at the technological constructs which is in contrast to the study carried out by Azevedo (2013); Salah, Yusof and Mohamed (2019).

VII. CONCLUSION

CRM has been recognized as critical to the success of large organizations since it is a strategy that is typically customized, making it difficult to reproduce. CRM should therefore be evaluated in the context of the SME, not as a corporate-style implementation. This study concluded that CRM can also be used to assist SMEs in growing and flourishing. Thus, technology is considered as a facilitator of the CRM approach. Factors such as organizational, environmental, technological, and information culture should all be considered in order to assist the business in making an informed decision on the adoption of CRM methods. While CRM implementation and adoption are not without challenges, the benefits are too compelling to ignore, and so the future profitability of SMEs may be contingent upon CRM adoption and implementation.

The study outcomes revealed that education, compatibility, and security were the major drivers of CRM adoption among the SMEs that were investigated. Even though education was not part of the framework, it came out as one of the most significant factors. The level of education has a bearing on factors like employee training, TC, understanding of risk within the organisation, collaboration and sharing of vital information and it takes away the phobia of technology. It thus acts as an important moderator in the whole process. Academics and practitioners should therefore leverage on education to gain the most out of CRM adoption.

RECOMMENDATIONS

1. Incubators and policy makers need to raise awareness of the benefits of CRM adoption to the incubates.
2. CRM can be taught as a mainstream subject since it has a major influence on the adoption of CRM technologies.
3. Research has shown that countries that have adopted CRM have resilient SMEs. Based on this study policy makers must make sure that Technological factors as well as education are leveraged upon to enhance CRM adoption by SMES in KZN.
4. Importantly various theoretical model models should be empirically tested among SMEs to establish the adoption of technologies in different contexts. Education which is not part of the TOE framework was found to be a major driver of adoption in KZN which could be different in another context and location.

LIMITATIONS AND FUTURE RESEARCH

This study identified certain shortcomings and makes recommendations for future research. The first constraint is the sample size, which is limited to SMEs registered under the CSERI in KZN. Further study might be conducted to validate our theoretical model employing a bigger sample size across the entire country of South Africa. Second, our sample was drawn from a variety of industries, including manufacturing, services, distribution, and retail. It could be interesting to apply the same model to multiple industries and analyse the differences in order to tailor the model to a particular area. Finally, we focused our research on identifying the primary factors influencing CRM adoption. However, the CRM field warrants additional research into the post-adoption process in order to fully grasp the value contribution of the CRM system to the business.

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