**Advancement in Management and Technology
(AMT)**

Journal Homepage: www.ajmt.org

Customer Relationship Management and Performance of Agricultural Firms: A Moderating Effect of Technological Environment

Silas Gontur*, Rufina Betzoom Tuamyil, Makrop Davireng, Habila Bako Dekom

Department of Business Education, School of Vocational and Technical Education, Federal University of Education, Pankshin, Plateau State, 933105 Nigeria

Correspondence E-mail: sgontur@gmail.com

Abstract

Introduction: The agricultural sector is a vital component of economic development, wealth creation, and poverty alleviation in emerging countries, which impacts the possibility of sustained economic growth. **Purpose**: This research examines the influence of customer relationship management (CRM) on the performance metrics of agricultural enterprises in Plateau State, Nigeria, while emphasising the moderating role of the technological environment. **Methodology**: A quantitative approach was employed using a survey design. Data were collected from 286 agricultural firms through structural questionnaires; the answers were collected and evaluated employing the partial least squares structural equation modeling (PLS-SEM) method by means of Smart-PLS software to test the hypotheses. **Findings**: Contrary to expectations, the finding shows that CRM has no significant direct effect on the performance of small agricultural firms. However, the technological environment moderates the connection between CRM and the performance of agricultural firms, indicating that the effectiveness of CRM in enhancing firm performance is contingent upon the level of technological advancement. **Results**: This study adds to the literature by challenging the conventional wisdom that CRM invariably enhances firm performance. Contrary to existing research, this study reveals that CRM does not have a direct positive relationship with firm performance in the agricultural sector in Plateau State, Nigeria. Moreover, the findings highlight the crucial moderating effect of the technological environment in the CRM performance relationship, underscoring the importance of technological infrastructure in leveraging CRM within the agricultural sector and Nigerian environment. **Conclusion**: This study offers valuable insights into CRM effectiveness, providing key implications for agricultural firms, policymakers, and practitioners aiming to optimize CRM strategies and technological investments to enhance firm performance.

Keywords: Agricultural Sector; Customer Relationship Management; Firm Performance; Technological Environment

Introduction

In developing nations, the agricultural sector constitutes a fundamental element of economic advancement, wealth generation, and the alleviation of poverty, thereby influencing the potential for sustainable economic growth. Olu, Adama and Unerjiaka (2023) emphasised that agriculture served

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

as the driving force that elevated and propelled numerous economies globally. For instance, in the United States, agriculture accounts for approximately 1.1% of the gross domestic product (GDP); in China, it represents 13%; in Australia, the figure is 2.6%; in South Africa, agriculture contributes 9%; in Israel, it is 2.5%; and in Argentina, it stands at 9%. In Egypt, the agricultural sector contributes 13.5% to the nation's GDP. In Nigeria, agriculture has functioned as the foundational pillar of the economy for several decades, contributing around 22.35% to GDP (National Bureau of Statistics, 2022). Similarly, the agricultural sector acts as a significant source of employment in many developing nations, representing 25% of Brazil's labour force, 32% in Egypt, and an impressive 70% in Nigeria (Olu, Adama & Unerjiaka, 2023). These statistics unequivocally illustrate that as a nation's economy persistently undergoes development, the proportional contribution of the agricultural sector to its GDP tends to diminish (Olu, Adama & Unerjiaka, 2023).

Notwithstanding the significant contributions of the agricultural sector to employment, rural advancement, and food security, it faces an array of challenges in Nigeria, including the activities of cattle herders and terrorist insurgencies, which have introduced greater security risks than safety for individuals, thereby inflicting severe hardships on farmers specifically and the nation at large. Additional challenges encompass ineffective marketing strategies for agricultural goods, particularly perishable items, which adversely affect the market valuation of such products; insufficient agricultural inputs; a predominance of traditional farming practices in Nigeria; a reluctance to gather pertinent information; inadequate knowledge concerning the sector; and challenges in identifying relevant information critical to their enterprises (Anthony *et al*., 2020). Further obstacles confronting agricultural enterprises in Nigeria include exorbitant transportation expenses, diminished consumer purchasing power, and the farmers' inability to engage in open communication with other stakeholders within the sector (Adejumo, 2019). These impediments and the suboptimal performance of these enterprises have compelled agricultural businesses to implement effective customer relationship management strategies, such as embracing innovative technologies, facilitating information exchange, and fostering networks with customers and other stakeholders to bolster long-term growth and performance (Wu & Lu, 2012).

CRM is acknowledged as an important plan for the sustainability of business entities, especially within the modern customer-focused commercial environment and intensely competitive contexts (Mohammed *et al*., 2024). As articulated by Baran and Galka (2017), CRM fundamentally concerns the comprehensive understanding of customers' requirements and their purchasing patterns. This strategic approach serves to enhance the relationship between a business entity and its customers, transforming connections into partnerships and friendships. In a related study, Alshourah *et al*. (2022) claimed that CRM aids in the generation of shared value between customers and companies while simultaneously enhancing profitability and steadfastness among small businesses. Prior research pertaining to customer relationship management and organisational performance has yielded an array of findings, with certain studies indicating positive correlations (Udeh *et al*., 2024; AlQershi, Mokhtar & Abas, 2022; Betzoom, Gontur & Davireng, 2022).

On the contrary, certain research has indicated that there may be no significant relationship between CRM and organisational performance (Inuwa & Ali, 2024; Vem *et al*., 2024). The study performed by AlQershi, Mokhtar and Abas (2022) indicated that multiple aspects of customer relationship management concerning business performance displayed both favourable and unfavourable relationships, influenced by the organisational setting, environment, and classification of services offered to clients. In an effort to bring together these divergent results, the present research endeavours to elucidate the circumstances under which a connection between customer relationship management and organisational performance may be established. Consequently, the study integrates a moderating variable, namely, the technological environment, when predicting organisational performance to understand its role in mediating the relationship between customer relationship management and the performance of enterprises within the agricultural sector. It is noteworthy that there exists a paucity of studies examining the interplay between customer relationship management and the technological environment. In accordance with this necessity, the principal aim of this study is

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

to evaluate the moderating effect of the technological environment on strengthening the association between CRM and organisational performance. The present research was inspired by the observation that limited research has been conducted in emerging economies, with the preponderance of existing research focusing predominantly on the banking sector (Mustapha *et al*., 2023; Vem *et al*., 2024), the telecommunications sector (Glory *et al*., 2021), and the transportation sector in Nigeria (Dike & Stanley, 2021; Ogundele & Babalola, 2019), all of which pertain to various categories of SMEs (Betzoom, Gontur & Davireng, 2022; Davireng, Gontur & Tuamyil, 2022), leaving only a handful of investigations addressing the agricultural sector in Nigeria, thus producing inconsistent outcomes. Therefore, this study intends to bridge the existing gap in the literature. The specific objectives are to: 1. Explore the relationship between customer relationship management and organisational performance within the agricultural sector in Plateau State. 2. Evaluate the moderating effect of the technological environment in the association between CRM and the performance of agricultural firms in Plateau State. The rest of the manuscript is organized as follows: it initiates with an introduction to the study, followed by the theoretical framework, literature review and hypothesis development, methodology, results and discussion, conclusion, research implications, and the limitations of the study.

Review of Literature

Theoretical Basis

The underpinning theory of this study is the relationship marketing theory proposed by Morgan (1994). This theoretical framework posits that customer relationship management (CRM) practices emerge as a direct consequence of relationship marketing initiatives. The theory undergirds the present study by elucidating the mechanisms through which enduring customer relationships are fostered, advocating a transition from transactional business models to an approach that prioritises the acquisition of new customers and the retention of existing customers via efficacious client engagement strategies, thereby addressing the dynamic nature of the business milieu (Betzoom, Gontur & Davireng, 2022). Morgan (1994) asserts that the benefits derived from connection serve as a pivotal underpinning for the nature of involvement and commitment that differentiates clients who are involved in relational transactions. The relationship marketing theory posits that collaborative entities necessitate extensive dissemination of skill and information between all stakeholders involved (Lam, 1995). Optimally efficient marketing strategies normally require the implementation of different marketing information systems, which include online transfer of information, through enterprises to cultivate business activities that enhance the function and exchange of customer knowledge. This theory is deemed pertinent to the current investigation as it encapsulates the principal factors under scrutiny concerning the influence of CRM on the performance of small agricultural firms. A notable limitation of this theory is its failure to acknowledge the social risks entwined with natural and environmental issues (Beck, 1992). Consequently, this necessitates the introduction of contingency theory to rectify the shortcomings of relationship marketing theory. The study is further bolstered by the principles of contingency theory.

The contingency theory fundamentally repudiates the concept of universal management principles. It asserts that enterprises ought to strategies, delineate their goals and objectives, and establish policies in accordance with the prevailing environmental conditions. In essence, managerial functions, decisions, and policies must be responsive to environmental fluctuations (Kirtley & O'Mahony, 2020). It is contended that the aggregation of resources is not the sole determinant of achieving superior performance. Organisations must analyse their environmental context and develop new skills, competencies, processes, and procedures tailored to the exigencies of their surroundings (Musa, Nmadu & Dakung, 2019). The theory presupposes that organisation function within environments characterised by uncertainty and complexity. Furthermore, it accentuates the significance of attaining congruence between the structure of the organisation and the demands imposed by its environment. Burns and Stalker (1994) posited that organisations ought to modify their structures to correspond with the levels of environmental uncertainty encountered. In the domain of the moderating role of the technological environment on the relationship between CRM along with organisational outcomes,

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

contingency theory posits that the efficacy of CRM practices may fluctuate based on the technological context in which an organisation operates (Shabir *et al*., 2016). This implies that the influence of CRM on the performance of agricultural firms is contingent upon the degree of alignment between CRM practices and the technological environment of the organisation. Given the preceding analysis, this study employs contingency theory, which advocates the necessity of business firms to adapt to their operational environment and capitalise on potential opportunities. Such adaptation can be achieved through suitable modifications, integration, and reconfiguration of organizational resources to align with the demands of the environment.

Customer Relationship Management

The domain of CRM has been extensively examined by researchers as a critical determinant of enhanced organisational performance and sustained competitive advantage (Davireng, Gontur & Tuamyil, 2022). CRM is conceptualised as a strategic business framework that seeks to comprehend, anticipate, and effectively address the requirements of both existing and prospective clientele within an enterprise. This framework is primarily concerned with the augmentation of customer satisfaction, the enhancement of customer loyalty, and the maximization of revenue derived from current customers in the context of intensified competition, globalisation, customer regulatory frameworks, and increasing expectations for customer satisfaction (Rafiki, Nasution & Rossanty, 2024). Furthermore, CRM is regarded as a mechanism for cultivating and strengthening the interactions between business entities and their customers to promote loyalty and facilitate repeat transactions (Filwe *et al*., 2023). The architecture of CRM systems encompasses various components or dimensions, including (i) customer focus, (ii) knowledge organisation, (iii) organisational structure, and (iv) technology-orientated (Wu & Lu, 2012). Kangu (2017) identified five dimensions such as CRM technology, infrastructure, service quality, personalisation, and customer focus. Siddiqi Sahel and Mahmud (2018) used three dimensions of CRM, namely, customer focus, customer experience and customer process. For the purpose of this study were adopted the work of Wu and Lu (2012),

Firm Performance

Performance constitutes the specific tasks for which an organization engages an individual, expecting proficient execution (Musa, Nmadu & Dakung, 2019). This notion remains rather nebulous, frequently serving as a placeholder in scholarly discourse; it encompasses a concept vulnerable to a diverse array of erratic interpretations (Folan, Browne & Jagdev, 2007). The ambiguity surrounding the definition of this concept is attributable to the absence of consensus regarding its characterisation, which notably constrains the potential for generalisation and comparative analysis within this research domain (Franco-Santos *et al*., 2007). As articulated by Ilmiani and Tubastuvi (2014), this concept pertains to an entity's capability to yield outcomes within a framework that is structured around an established criterion or objective. The notion is often associated with actions and processes culminating in a specific result, with the outcome of the action typically accounted for in analytical evaluations. In the realm of business studies, organisational performance emerges as a pivotal construct. It is characterised as a complex and multifaceted phenomenon, defined as the organisation's ability to generate favourable outcomes and activities, significantly influenced by efficient marketing strategies. Furthermore, Hashem (2015) emphasised that the definition of organisational performance predominantly concentrates on the organisation's proficiency in effectively leveraging available resources to fulfil its established objectives while also considering the advantages to its stakeholders (Musa, Nmadu & Dakung, 2019). The definition proffered by Hashem (2015) delineates three integral components of organisational performance: efficiency (resource utilisation), effectiveness (goal attainment), and relevance (stakeholder satisfaction). Niven (2002) identified four distinct perspectives employed to evaluate performance: the financial viewpoint, the customer satisfaction standpoint, the internal practice's view, and the employee knowledge and development point of view. Despite numerous scholars having explored the determinants that influence organisational performance over the past decade from various viewpoints, there remains a pronounced surge in scholarly interest in this domain, particularly concerning SMEs (Betzoom, Gontur & Davireng, 2022; Gontur, Goyit & Vem, 2023).

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Hypothesis Development

CRM and Performance of SMEs

Customer wants and needs are constantly changing due to the behaviour and present economic hardship in Nigeria and changes in global economics as a result of COVID 19, the Russian-Ukraine war and other environmental factors (Gontur *et al.,* 2022). Therefore, given the increasingly strategic importance of CRM for business planning, it is imperative for business enterprises to thrive in the current business environment (Gyedu *et al*., 2021). Scholars such as Thai *et al.* (2024), Filwe *et al.* (2023), and Davireng, Gontur and Tuamyil (2022) observed that firms that adopt CRM methods lean to market their products and services to their customers and suppliers in cost-effective and competitive ways. It also involves building and improving relationships between companies to foster loyalty, cost reduction and revenue growth. Research has examined the dynamic link between CRM and performance of agricultural firms (FP), and findings have reported conflicting results. CRM strategies have been found to have a significant positive effect on FP (Udeh *et al*., 2024; AlQershi, Mokhtar & Abas, 2022). While Inuwa and Ali (2024) and Vem *et al.* (2024) reported that CRM does support FP. However, AlQershi, Mokhtar and Abas (2022) reported customer orientation, technology and knowledge management were effective determinants of FP; however, that does not lead to the performance of a firm. From this search, it has been discovered that the majority of the study has revealed a positive relationship between these variables.

In light of these influences, it has been hypothesized H1 that CRM has a positive relationship with FP.

Moderating Effect of Technological Environment

Research has shown that factors such as external knowledge, marketing variables and the market environment play a significant role in the moderating effect of various business strategies on firm performance. For instance, studies have highlighted the importance of environmental factors such as informal competition, technology turbulences, and market dynamics in influencing the effectiveness of CRM strategies and ultimately firm performance (Mohammed *et al*., 2024; Chatterjee, Chaudhuri & Vrontis, 2022). Environmental variables have always been adjudged as an important contingency factor in the customer orientation performance relationship (Slater & Narver, 1994). Previous studies such as (Chatterjee, Chaudhuri & Vrontis, 2022; Gyedu *et al.,* 2021) found that digitalization, market turbulence, and environmental turbulence moderate the relationship between CRM and business performance. In line with the relationship theory and contingency theory, it has been found that CRM and FP significantly influence the technological environment.

It is therefore hypothesized H2 that the technological environment moderates the relationship between customer relationship management and firm performance.

Methodology

The population of the study is all agro-based firms in Plateau State, Nigeria. The aggregate sample size of 286 was deemed adequate for the purposes of this study because (1) the G*Power software (Faul *et al*., 2009) indicated that the requisite minimum sample size for the current study model was 119, with an established statistical power level of 95%, an effect size of 0.15, and a significance level of 5%. A self-administered questionnaire design was deployed to extract data from the participants through the purposive sampling process. Data was collected from owners/managers of agro-based businesses in Plateau, Nigeria, between February and May 2024. Plateau State was chosen because of two factors: (1) its central location, which makes it accessible to all Nigerians; and (2) its moderate climate. Plateau State is favourable for the growing of different agricultural products ranging from fruits to vegetables, and crops such as Irish potatoes and yam have attracted small agricultural firms within and outside the country.

A sample taken from Plateau State is representative of the Nigerian population because of these variables that contribute to making the state a hub of cultural heterogeneity.73.3% of the 390 administered questionnaires were answered, with 286 of those being received and examined. Which

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

is in line with Nulty's (2008) assertion that a written questionnaire should have a response rate of 60% for an accessible? The data for this study were collected using a close-ended questionnaire, in which participants presented a set of options. Self-directed surveys can lessen the effect of social desirability bias by letting respondents give sincere answers without fear of judgment or retribution (Tourangeau, Rips & Rasinski, 2000). Furthermore, this study employed drop – offs and pick – ups (DOPU), as established by Allred and Ross-Davis (2011). This data collection technique allows a researcher to hand-deliver survey questionnaires to respondents. According to Junod and Jacquet (2023), the DOPU technique can increase response rates and reduce non – response bias. The cover letter explained the nature and objectives of the study and highlighted the strict confidentiality of respondents' information. The questionnaire was pretested to ensure content validity and clarity. The questionnaire was developed based on an already used scale in previous literature, customer relationship management (CRM): Although diverse versions of customer relationship management measures have developed over time (Hong-kit Yim, Anderson & Swaminathan, 2004).

The scale developed by Valmohammadi (2017) has been adapted. The construction has been established as a singular-dimensional framework; consequently, it has been chosen to adapt the measurement instruments to align with the specific requirements. The measurement scale comprises five distinct items, which yielded a Cronbach Alpha coefficient of 0.823. The response options on a five-point Likert scale included: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). Various metrics have been created to measure business performance (Verbano & Crema, 2016). The Guerola-Navarro *et al*. (2021) scale was modified from their use of subjective metrics to assess organizational success. Given that it addresses both financial and non-financial performance, it is relevant for this investigation. The measurement scale demonstrated reliability, yielding a Cronbach Alpha value of 0.85. It is evaluated on a 5-point Likert scale. In measuring the technological environment, a number of scales have been developed and validated. However, the scale developed by Aydin and Ozer (2005) has been adopted using a sample of 4 items with a Cronbach Alpha 0.925, measured on a five point like scale ranging from strongly agree (5) to strongly disagree (1).

Statistical Analysis

Descriptive statistics and common technique bias were performed in the present research using the Statistical Package for Social Sciences (SPSS) version 26. Additionally, the present study tested the suggested research model using the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique. Specifically, the following considerations make PLS-SEM a suitable approach for the purpose of this research: It emphasizes three reasons for using PLS- SEM, because the study is (1) exploratory research (Sarstedt, Ringle & Hair, 2021); (2) a complicated study framework is defined using hypothesis that addresses moderation (Cheah *et al*., 2021); and (3) the application of salient variables' values in predictive value assessment (Hsu *et al*., 2020). Consequently, the measurement and the structural model were assessed using Smart -PLS version 4.0 (Sarstedt & Cheah, 2019).

Results

The following table (Table1) indicates that 65% of the participants were males whereas 35% were females, drawn from agricultural SMEs in Plateau State. 182 respondents, representing 63.6%, were sole proprietorships, while 24.8 % and 3.8% were in partnership and joint ventures respectively. In addition, the composition of the age of the participants ranged between 19 years to above 60 years. Measurement of each variable was carried out using a procedural approach to reduce errors in variation. In accordance with Baumgartner and Weijters' (2012) advice, a relatively small number of ten SME owners and ten SME managers were pre-tested. This allowed for the removal of challenging questions and similar items for revision in order to enhance the instrument's clarity. Podsakoff *et al*. (2003) suggested that the study should notify participants of its purpose and that improving response precision and lowering social desirability bias are two benefits of the research. This was followed by the study. A self-response questionnaire's common variance bias may be lessened by these methods, according to Podsakoff *et al*. (2003).

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Table 1: Demographic Profiles of Respondents

Indices	Number of Respondents N = 286	Percentage (%)
Gender		
Male	186	65
Female	100	35
Total	286	100
Respondents Age		
19 – 28 years	36	12.6%
29 – 38 years	111	38.8
39 – 48 years	81	28.3
49 – 58 years	53	18.5
Above 60 years	5	1.7
Total	286	100
Size of the Enterprise		
Small	238	83.2
Medium	48	16.8
Total	286	100
Business Age		
3- 5 years	90	31.5
6 – 8years	74	28. 9
9 – 11 years	58	20.3
12 – 14years	34	11.8
15 years and above	30	10.5
Total	286	100
Education		
No formal education	8	2.8
FSCL WASSCE	74	25.9
ND/NCE	83	20
HND/ Degree	85	29.7
Post graduate	29	10.1
Others	7	2.5
Total	286	100
Ownership		
Sole Proprietor	182	63.6
Partnership	70	24.5
Joint Venture	11	3.8
Others	23	8.1
Total	286	100%

Table 2: Descriptive Statistics

Constructs	Mean	Standard Deviation	Skewness Statistics	Std Error	Kurtosis Statistics	Error
CRM	5.6678	0.99176	-2.009	0.144	4.295	0.287
Technological Environment	3.8503	0.74879	-1.277	0.144	1.158	0.287
Performance	3.9385	0.71170	-1.459	0.144	-2.159	0.287

Among the three variables, CRM has the highest (M = 5.6678, STD = 0.99176). The second-highest mean value is scored by performance, which has the value of (M = 3.9385, STD = 0.7117), while the technological environment has the lowest value (M = 3.8503, STD = 0.74879). In addition, following the argument of Kline (2011), the absolute value of skewness greater than 3 and kurtosis greater than 10 may indicate a problem, and a value above 20 may indicate a more serious problem as recommended by Kline. Hence, the skewness and kurtosis of all the constructs in this research are within the range of less than 3 and less than 10, respectively, which implies that the data falls within the acceptable range, which indicates that the data is normal.

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Table 3: KMO and Barlettt's Test

Kaiser Meyer- Okin measure of sampling adequacy	0.798
Barletts test of approved chi square	1026.452
Sphericity	
Df	91
Sig	0.000

Assessment of Common Method Bias

Before assessing the research model, the common method bias using the full colinearity test has been assessed first. The result showed that the variance inflation factor (VIF) values of all constructs ranged between 1.403 and 2.613, below 3.33 (Kock & Lynn, 2012). A statistical remedy was based on the factor test (Podsakoff *et al.,* 2003). Through an exploratory factor analysis (EFA), 14 items were loaded together. The study confirmed the Kaiser-Meyer Olkin measure of sampling adequacy of 0.798, and the three with Eigen values less than one and with variance explained at 25.068% were less than 50% of the total variance explained. This is in line with Podsakoff *et al.* (2003), who argued that common method bias is present when a single factor explains more than 50%.

Table 4: Measurement Model

Variables	Indicator	Loading value	Cronbach Alpha	Rho	CR	AVE
Customer Relationship management						
	CRM 1	0.824	0.809	0.818	0.868	0.569
	CRM2	0.774				
	CRM3	0.646				
	CRM4	0.726				
	CRM5	0.789				
Firm Performance						
	PEF1	0.704	0.781	0.785	0.851	0.553
	PEF2	0.712				
	PEF3	0.716				
	PEF4	0.688				
	PEF5	0.778				
Technological Environment						
	TEC1	0.746	0.771	0.772	0.853	0.593
	TEC2	0.755				
	TEC3	0.774				
	TEC4	0.803				

Rho= Internal reliability; CR=composite reliability; AVE= average variance extracted

Subsequently, the measurement model's quality in terms of loading, internal consistency, and convergent validity (see Table 4) (Sarstedt, Ringle & Hair, 2021) has been evaluated. Table 4 confirmed that the internal consistency is reliable, with composite reliability (CR) values being greater than 0.7. Rho values for each construct were above 0.70. Further supporting the reliability of the constructs, these results indicate that the latent constructs are reliable with each showing adequate internal consistency. Moreover, the use of Rho helps confirms reliability, particularly for constructs that may not meet assumptions required for Cronbach alpha (Hair *et al.*, 2017). Next, the loadings show an average variance extracted (AVE) result that supports convergent validity with all values above 0.5. Also, the loading values were considered acceptable (between 0.622 and 0.908).

Table 5: Heterotraits and Monotraits (HTMT)

Variables	1	2	3	4
Customer Relationship management				
Firm Performance	0.454	0.684	**0.629**	
Technological Environment	0.433	0.812	0.535	**0.798**

Note: Items to watch out for are customer relationship management, technological environment, and firm performance, since it has been considered higher-order construction. No figure of the items

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

concerned is close to the threshold, which shows that the discriminatory validity criterion is met. Heterotraits and monotraits techniques were utilized to evaluate the establishment of discriminant validity, as advocated by Franke and Sarstedt (2019). Furthermore, the reporting table in accordance with the prescribed guidelines outlined by Ramayah *et al*. (2018), as depicted in Table 5 has been constructed. All observed HTMT ratios were found to be below the threshold criterion of 0.85. Consequently, it can be inferred that the measures exhibit distinctiveness which has been employed in our research

Assessment of Structural Model

To evaluate the structural model, 5,000 re-samplings were bootstrapped using Smart-PLS 4.0 to find the path coefficient (β), and other recommended investigations were carried out to find the model fit, R^2, effect size, and F^2. (Yeap, Ramayah & Soto-Acosta, 2016). Smart-PLS 4.0 reports a standardized root-mean-square residual (SRMR) or root-mean-square residual covariance, RMS theta (Henseler, 2018). The SRMR and RMS theta goodness of fit scores have threshold values of 0.08 and 0.12, respectively. In the meantime, the present model validates the model's fitness by establishing an SRMR value of 0.065, which is more than 0.12.

Table 6 contains a summary of the structural model results. The following are noteworthy findings. The direct connection that exists between CRM and SMEs' performance (β = 0.108, *p*-value = 0.438, *t* value of 1.723) is insignificant. This suggests that customer relationship management's effect on firm performance is not substantial enough. (Furthermore, other evaluations (R^2, and f^2) were conducted to determine the coefficient of determination and the substantive significance of structural relationships. The findings delineated in Table 6 illustrate the coefficient of determination R^2, which evaluates the predictive efficacy of the model (Hair *et al*., 2017) at values of 0.439 and 0.193, categorized as substantial and moderate, respectively, in accordance with Cohen's (Cohen & Levinthal, 1990) benchmarks. In a similar vein, the f^2 (effect size) that elucidates the impact of a latent variable on the structural model was evaluated. The coefficients of 0.240 and 0.008 corresponded to Cohen's criteria for medium and weak effect sizes, respectively.

Table 6: Assessment of Path Coefficient

Hypotheses	Relationship	β value	Std Error	T value	P value	Vif	F²	R²	Decision
H1	CRM→PERF	0.108	0.082	1.723	0.621	1.403	0.008	0.439	Not supported
GoF	SRMR=0.070, RMS theta = 0.144								
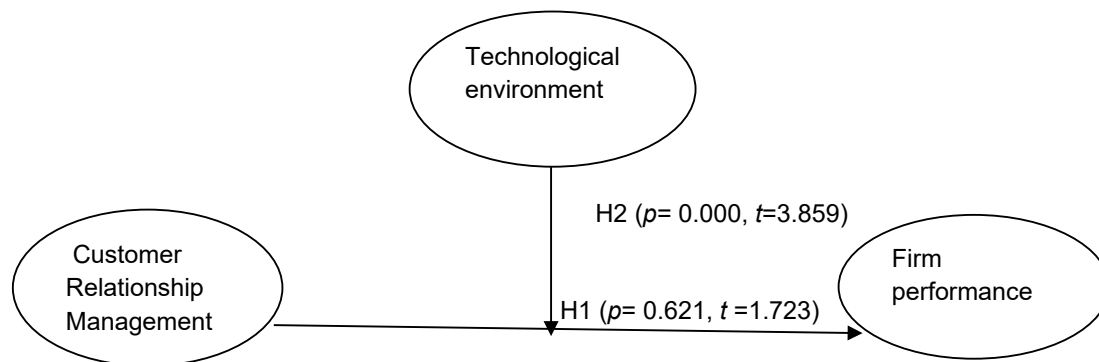
Figure 1: Structural Path showing the beta value and *t* value

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Table 7: Hypothesis on the Moderating Effect of Technological Environment

Hypothesis	Relationship	β value	Std Error	T value	P value	Decision
H2	CRM*TEC→PEF	0.460	0.049	3.859	0.000	Supported

Additionally, the moderating influence through the application of the two-stage approach methodology (Chin, Marcolin & Newsted, 2003; Henseler & Chin, 2010) has been examined. The interaction between CRM and CRM and the technological environment on firm performance (β = 0.430, p = 0.000, t = 3.859) was significant at the p 0.000 level. The finding agrees with H2, as revealed in Table 7. The interaction diagram illustrates in Figure 2 elucidates how the moderating variable, technological environment, can enhance the association between CRM and FP. The interaction diagram illustrated in Figure 2 elucidates how the interacting variable technological environment can help to strengthen the relationship between CRM and FP. The significant positive relationship between customer relationship management and SMEs' performance was stronger when the technological environment was strong compared to when it was weak. The direction of effect was as hypothesized in H2. This further shows the significance of the technological environment in strengthening the link between CRM and the performance of agricultural firms in Plateau State.
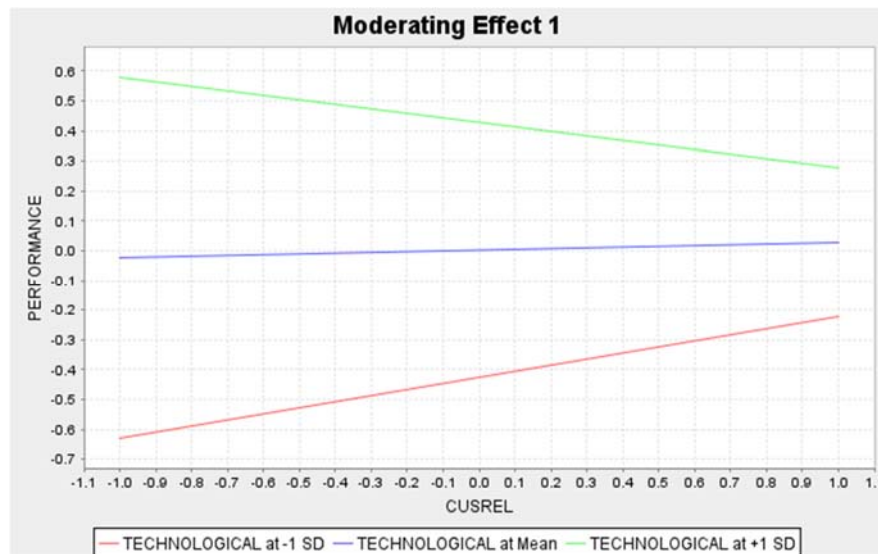

Figure 2: The role of moderating variable, technological environment, in strengthening the association between CRM and FP

Discussion

This research examined the role of CRM in the performance of agricultural firms in Plateau State, Nigeria. In addition, the researchers answered the call made in Davireng, Gontur and Tuamyil (2022) for potential scholars to assess the moderating effect of the technological environment as a means of explaining the connection among CRM-firm performance. Fascinatingly, a meticulous search shows that this research is among the first to empirically assess the moderating effect of the technological environment in the association flanked by customer relationship management and its influence on the performance of the agricultural sector in Nigeria.

Hypothesis 1: Predicts the straight association between CRM and SMEs performance of agricultural firms is not supported. The result suggests that other factors beyond CRM may have a more pronounced influence on firm performance in the agricultural sector. These factors could include market conditions, government policies, technological advancements, and supply chain dynamics. This challenges the conventional wisdom that a strong focus on CRM is always beneficial for business success. The result agrees with the previous study by Inuwa and Ali (2024), which found that CRM does not have a significant relationship with the performance of agricultural firms. Though it

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

is not consistent with AlQershi, Mokhtar and Abas (2022) and Udeh *et al*. (2024), who agreed that CRM has a positive effect on the performance of firms in the agricultural sector. Hypotheses 2: The moderating role of the technological environment on the link flanked by CRM and the performance of agricultural firms in Plateau State. The outcome of the research revealed that the technological environment moderates the relationship between CRM and the performance of agricultural SMEs in Plateau State.

Theoretically, the link between CRM and the technological environment validates the position of environmental variables in the conceptualization of CRM. Betzoom, Gontur and Davireng (2022) suggested that future studies should use the technological environment in the conceptual connection between CRM and SMEs performance. Hunt's relationship theory emphasizes the importance of building and maintaining relationships with customers. The identification of a lack of a direct connection between CRM and organizational performance indicates that the mere execution of CRM may not guarantee improved performance. Instead, it underscores the importance of how these systems are utilized to foster customer relationships and create customer satisfaction (Haryandiko & Santra, 2021). In addition, the effectiveness of managerial practices depends on the specific context in which they are applied (AlQershi, Mokhtar & Abas, 2022). The moderating effect of the technological environment on the link between CRM and firm performance highlights the need for a contingency approach. Firms must consider the unique technological challenges and opportunities they face when implementing CRM strategies. This integration also highlights the dynamic nature of CRM-firm performance relationships. As technology evolves, the effectiveness of CRM strategies may vary, necessitating ongoing evaluation and adaptation.

Limitations

Notwithstanding the substantial contributions this research has comprehended to the technological milieu, several limitations are anticipated. The internal validity of this study is undermined by its cross-sectional methodology. Therefore, longitudinal data could be employed in future investigations to assess the same theoretical construct. The current research is geographically confined to agricultural enterprises operating within the state of Plateau. In addition, it lacks consideration of the agricultural practices prevalent in other states such as Benue, Niger, Kano, Zamfara, Oyo, and Ebonyi. The relationship between CRM and organizational performance was found to be unexpectedly tenuous.

As a result, further investigation of this relationship utilizing heterogeneous populations in diverse cultural contexts is necessary. Ultimately, future scholars may explore the various dimensions of customer relationship management to ascertain which specific customer relationship variables may either mitigate or enhance the performance of agricultural enterprises.

Conclusion

Overall, this study examined the relationship between CRM and the performance of agricultural firms, considering the moderating effect of the technological environment. This study made a sole contribution in the technological environment as a potential interacting variable through which CRM relates to the performance of agricultural firms has been introduced. The findings established that there was no relationship between CRM and firm performance. It was also established that the technological environment moderates the link between CRM and firm performance. The results are anticipated to become increasingly significant as investigations within the domain of relationship management persist in situating frameworks of organizational performance at the nucleus of customer relationship methodologies. The study learns more about firm performance and its precursors. It is likely that small agricultural firms would want to make every effort to reduce the failure rate of SMEs established by owners of these firms.

Acknowledgment

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Conflict of Interests

The authors state that they do not have any personal conflicts of interest.

References

Adejumo, A. A. (2019). Integrating Implementation Strategy, Challenges and Success Factors of CRM and e-CRM among Selected FMCG in Nigeria. *International Journal of Business*, *2*(1), 27-35. https://doi.org/10.12691/ijbrm-2-1-5

Allred, S. B., & Ross-Davis, A. (2011). The drop-off and pick-up method: An approach to reduce nonresponse bias in natural resource surveys. *Small-Scale Forestry*, *10*(3), 305-318. https://doi.org/10.1007/s11842-010-9150-y

AlQershi, N., Mokhtar, S. S. M., & Abas, Z. (2022). The influence of structural capital on the relationship between CRM implementation and the performance of manufacturing SMEs. *International Journal of System Assurance Engineering and Management*, *13*(3), 1205-1218. https://doi.org/10.1007/s13198-021-01417-z

Alshourah, S., Jodeh, I., Swiety, I., & Ismail, A. (2022). Social customer relationship management capabilities and performance: moderating social media usage among SMES Jordanian. *Decision Sciences*, *25*(S2), 1-8. https://www.abacademies.org/articles/social-customer-relationship-management-capabilities-and-performance-moderating-social-media-usage-among-smes-jordanian.pdf , Accessed on 14th January, 2024.

Anthony, L., Alabi, O.O., Ebukiba, E.S. & Gamba, V. (2020). Factors influencing output of rice produced and choice of marketing outlets among smallholder farming households. Abuja, Nigeria. *Sarhad Journal of Agriculture, 37*(1), 262 – 277. http://dx.doi.org/10.17582/journal.sja/2021/37.1.262.277

Aydin, S., & Ozer, G. (2005). How switching costs affect subscriber loyalty in the Turkish mobile phone market: an exploratory study. *Journal of Targeting, Measurement and Analysis for Marketing. 14(*2), 141–155. https://doi.org/10.1057/palgrave.jt.5740176

Baran, R. J., & Galka, R. J. (2017). *Customer Relationship Management: the foundation of contemporary marketing strategy*. Routledge, New York. http://surl.li/tdebgs , Accessed on 24th January, 2024.

Baumgartner, H. & Weijters, B. (2012). Commentary on 'common method bias in marketing: causes, mechanisms, and procedural remedies, *Journal of Retailing, 8* (4), 563-566. https://doi.org/10.1016/j.jretai.2012.10.003

Beck, U. (1992). From industrial society to the risk society: Questions of survival, social structure and ecological enlightenment. *Theory, Culture & Society, 9*(1), 97–123. https://doi.org/10.1177/026327692009001006

Betzoom, R. T., Gontur, S., & Davireng, M. (2022). Examining the influence of customer relationship management and innovation capability on the performance of small and medium scale enterprises: Content analysis and partial least square approach. *British Journal of Management and Marketing Studies 5*(2), 64-96. https://doi.org/10.52589/bjmms-mqlvfoo2

Burns, T., & Stalker, G. M. (1994). *The management of innovation*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198288787.001.0001

Chatterjee, S., Chaudhuri, R., & Vrontis, D. (2022). AI and digitalization in relationship management: Impact of adopting AI-embedded CRM system. *Journal of Business Research*, *150*, 437-450. https://doi.org/10.1016/j.jbusres.2022.06.033

Cheah, J.H., Nitzl, C., Roldan, J.L., Cepeda - Carrion, G. & Gudergan, S.P. (2021), A primier on the conditional mediation analysis in PLS-SEM", ACM SIGMIS Database: *The for Advances in Information Systems,* 52 (1), 43-100. https://doi.org/10.1145/3505639.3505645

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail *Emotion/Adoption Study* (2), 189-217. https://doi.org/10.1287/isre.14.2.189.16018

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, *35*(1), 128-152. https://josephmahoney.web.illinois.edu/BA545_Fall%202022/Cohen%20and%20Levinthal%20(1990).pdf , Accessed on 14th January, 2024.

Davireng, M., Gontur, S., & Tuamyil, R. B. (2022). Customer Relationship Management, Innovation Capability, Technological Environment, and Performance of Small and Medium Scale Enterprises: A Research Framework and Proposition. *Journal of Economics, Management and Trade*, *28*(10), 80-88. http://info.submit4journal.com/id/eprint/2303. Accessed on 18th January, 2024.

Dike, R. A., & Stanley, C. C. (2021). Effect of Customer relationship management on customers' loyalty in shipping companies in Lagos State, Nigeria. *American International Journal of Business Management*, *4*(3), 52-64. http://www.aijbm.com/wp-content/uploads/2021/05/H455264.pdf , Accessed on 8th January, 2020.

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* power. *Behavior Research Methods*, *41* (4), 1149 -1160. https://doi.org/10.3758/BRM.41.4.1149

Filwe, J.L., Egele, A.E., Ozo, J.U., & Obasiabara, B.O. (2023). Customer relationship management and customer repeat purchase behavior in Nigeria. *Scholars Journal of Economics, Business and Management, 1*, 19 – 28. https://doi.org/10.36347/sjebm.2023.v10i01.002

Folan, P., Browne, J., & Jagdev, H. (2007). Performance: Its meaning and content for today's business research. *Computers in Industry, 58*(7), 605–620. https://doi.org/10.1016/j.compind.2007.05.002

Franco-Santos, M., Kennerley, M., Micheli, P., Martinez, V., Mason, S., Marr, B., Gray, D., & Neely, A. (2007). Towards a definition of a business performance measurement system. *International Journal of Operations & Production Management, 27*(8), 784- 801. https://doi.org/10.1108/01443570710763778

Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research, 29(3),* 430-447. https://doi.org/10.1108/IntR-12-2017-0515

Glory, S.E., Idorenyin U.E., Edim E.J., & Sarah E. (2021), Effect of relationship marketing on customer retention in the telecommunications Industry. *British Journal of Management & Marketing Studies*, *4*(4), 68-81. https://www.doi.org/10.52589/BJMMS-YIPPKDVZ

Gontur, S., Goyit, M. G., & Vem, L. J. (2023). Impact of entrepreneurial marketing dimensions on competitive advantage of small and medium-scale enterprises in Plateau State, North Central Nigeria. *Journal of Production, Operations Management and Economics (JPOME)*, *3*(01), 1-12. https://doi.org/10.55529/jpome.31.1.12

Gontur, S., Jonathan Vem, L., Goyit, M. G., & Davireng, M. (2022). Entrepreneurial Marketing, Corporate Reputation, Corporate Creativity and Competitive Advantage: A Research Framework and Proposition. *International Journal of Business, Management and Economics*, *3*(1), 52 - 80. https://doi.org/10.47747/ijbme.v3i1.352

Guerola-Navarro, V., Oltra-Badenes, R., Gil-Gomez, H., & Gil-Gomez, J. A. (2021). Research model for measuring the impact of customer relationship management (CRM) on performance indicators. *Economic Research-Ekonomska Istraživanja, 34*(1), 2669– 2691. https://doi.org/10.1080/1331677X.2020.1836992

Gyedu S, Heng T, Menyah M.V., & Oti - Frimpong, J. (2021). The moderating role of environmental turbulences on the relationship between customer management and business performance. *International Journal of Scientific Research in Science Engineering and Technology, 8*(2), 87-105. https://doi.org/10.32628/IJSRSET218218

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*, 616-632. https://link.springer.com/article/10.1007/s11747-017-0517-x , Accessed on 25th January, 2024.

Haryandika, D. M., & Santra, I. K. (2021). The effect of customer relationship management on customer satisfaction and customer loyalty. *Indonesian Journal of Business and Entrepreneurship (IJBE)*, *7*(2), 139-149. https://doi.org/10.17358/ijbe.7.2.139

Jenatabadi, H. S. (2015). An overview of organizational performance index: Definitions and measurements. https://dx.doi.org/10.2139/ssrn.2599439

Henseler, J. (2018). Partial least squares path modeling: Quo vadis?. *Quality & Quantity*, *52*(1), 1-8. https://doi.org/10.1007/s11135-018-0689-6

Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *17*(1), 82–109. https://doi.org/10.1080/10705510903439003

Hong-kit Yim, F., Anderson, R. E., & Swaminathan, S. (2004). Customer relationship management: Its dimensions and effect on customer outcomes. *Journal of Personal Selling & Sales Management*, *24*(4), 263-278. https://doi.org/10.1080/08853134.2004.10749037

Hsu, H. M., Yao, Z. F., Hwang, K., & Hsieh, S. (2020). Between-module functional connectivity of the salient ventral attention network and dorsal attention network is associated with motor inhibition. *PloS one*, *15*(12), e0242985. https://doi.org/10.1371/journal.pone.0242985

Tubastuvi, N., & SobrotulImtikhanah, (2013). Factors Affecting Business Performance the Small Medium Enterprises of Batik Pekalongan Central Java, Indonesia. *In International Conference on Business, Economics and Accounting in Hong Kong. https://caal-inteduorg.com/proceedings/ibea2014/070SME--Naelati_T&Sobrotul_I--Factors_Affecting_Business_Performance.pdf , Accessed on 23rd January, 2024.*

Inuwa, M. L., & Ali, H. Y. (2024). Assessment of CRM and E-Marketing Strategies on Agri-SMEs Performance in Bauchi State, Nigeria. *African Journal of Management and Business Research*, *14*(1), 10-24. https://doi.org/10.62154/429kge87

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Junod, A. N., & Jacquet, J. B. (2023). Insights for the drop-off/pick-up method to improve data collection. *Society & Natural Resources*, *36*(1), 76-88. https://doi.org/10.1080/08941920.2022.2146821

Kangu, M. A. (2017). *The Role of Customer Relationship Management Dimensions on Customer Loyalty in the Hotel Industry in Kenya Maureen Adhiambo* (Doctoral dissertation, COHRED, JKUAT). http://hdl.handle.net/123456789/3191 , Accessed on 25th January, 2024.

Kirtley, J., & O'Mahony, S. (2020). What is a point? Exploring when and how entrepreneurial firms decide to make strategic change and pivot. *Strategic Management Journal,* *44*(1), 197-230. https://doi.org/10.1002/smj.3131

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). Guilford Press. https://sulkurl.com/bHU , Accessed on 21st January 2024.

Kock, N., & Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: an illustration and recommendations, *Journal of the Association for Information Systems*, *13*(7), 546-580. https://ssrn.com/abstract=2152644. Accessed on 19th January, 2024

Lam, S. S. K. (1995). Quality management and job satisfaction. *International Journal of Quality & Reliability Management, 12*(4), 72 - 78. https://doi.org/10.1108/02656719510087337

Mohammed, F., Ahmad, R.B., Hassan, S. B., Fazea, Y. & Alzahrani, A.I (2024). An empirical review on the impact of social customer relationships on SMEs performance. *International Journal of Information Management and Data Insights. 4*(2), 100249. https://doi.org./10.10.1016/j.jjimei.2024.100248

Morgan, R. M. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, *58*(3), 20–38. https://doi.org/10.1177/002224299405800302

Musa, J. J., Nmadu, T. M., & Dakung, R. J. (2019). Business-it Strategic Fit and Performance of Telecommunications Companies In Nigeria: Moderating Role of Environmental Uncertainty. *Nigerian Journal of Management Sciences*, *7*(1), 335-343. https://www.bsum.edu.ng/njms/journals/vol7no1/files/file37.pdf , Accessed on 23rd January, 2024.

Mustapha, R., Kareem, O., Adeniyi, M. M., & Adebayo, A. A. (2023). Customer Relationship Management and Organizational Performance of Selected Banks in Ogun State, Nigeria. *African Journal of Management and Business Research*, *11*(1), 213-288. http://publications.afropolitanjournals.com/index.php/ajmbr/article/view/543 , Accessed on 21st January, 2024.

National Bureau of Statistics (2022). Nigeria Foreign Trade Report for First Quarter 2022. https://nigerianstat.gov.ng/elibrary , Accessed on 21st January, 2024.

Niven, P. R. (2002). *Balanced Scorecard Step-By-Step: Maximizing Performance and Maintaining Results*. John Wiley & Sons, Inc.

Nulty, D.D. (2008), The adequacy of response rates to online and paper surveys: what can be done?, *Assessment and Evaluation in Higher Education, 33* (3), 301-314. https://doi.org/10.1080/02602930701293231

Ogundele, A.V., & Babalola, J. (2019). Impact of customer relationship management on freight forward services in Tin Can Island past container terminal (TICT) limited Apapa port Lagos Nigeria. *International Journal of Scientific and Research*, *9*(3), 8712- 8721. http://dx.doi.org/10.29322/IJSRP.9.03.2019.p8712

Olu, J. F., Adama, F., & Umejiaku, C. (2023). Analysis of the Contribution of the Agricultural Sector to Employment Generation in Nigeria (1999–2021). *Journal of Global Economics, Management and Business Research*, *15*(1), 42-52. https://doi.org/10.56557/jgembr/2023/v15i18157

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88* (5), 879-903. https://psycnet.apa.org/doi/10.1037/0021-9010.88.5.879. Accessed on 29th January, 2024.

Rafiki, A., Nasution, M. D. T. P., & Rossanty, Y. (2024). CRM impact on customer satisfaction in Islamic-based hotels: exploring a mediation model. *Journal of Islamic Marketing*. https://doi.1106/JIMA-08.2923-0265

Ramayah, T. J. F. H., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0. *An Updated Guide and Practical Guide to Statistical Analysis*, 967-978. https://www.goodreads.com/book/show/44057278-partial-least-squares-structural-equation-modeling-pls-sem-using-smart , Accessed on 25th January, 2024.

Sarstedt, M., & Cheah, J. H. (2019). Partial least squares structural equation modeling using SmartPLS: a software review. *Journal of Marketing Analytics, 7* (3), 196 – 202. https://doi.org/10.1057/s41270-019-00058-3

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587-632). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-57413-4_15

Gontur et al.

Adv. Mgmt. Tech. Volume 5(2) 01- 15

Shabir, M., Ghaffar, S., Nisar, Q. A., & Younas, S. (2016). Effect of CRM practices on organizational performance under moderation by market turbulence: a study on telecommunication sector of Pakistan. *Computer Engineering and Intelligent Systems Journal of Information Management*, *7*(8), 17-27. https://iiste.org/Journals/index.php/CEIS/article/view/32314 , Accessed on 22nd January, 2024.

Siddiqi, T., Sahel, S., & Mahmud, I. (2018). CRM dimensions affecting customers satisfaction in Bangladesh banking industry. A structural equation modeling approach. *European Journal of Business and Management, 10*(8), 11- 22. https://iiste.org/Journals/index.php/EJBM/article/view/41458 , Accessed on 22nd January, 2024.

Slater, S. F., & Narver, J. C. (1994). Market orientation, customer value, and superior performance. *Business Horizons*, *37*(2), 22-29. https://doi.org/10.1016/0007-6813(94)90029-9.

Thai, N. V., Trang, B. T. Q., Quy, N. L. D., Huong, N. T. Q., & Huyen, V. T. T. (2024). Factors affecting the successful implementation of customer relationship management in 3-to-5-star hotels in Viet Nam. *Cogent Social Sciences*, *10*(1), 1-16. https://doi.org/10.1080/23311886.2024.2316062

Tourangeau, R., Rips L., & Rasinski, K. (2000). *The Psychology of Survey Response*. Chicago: Cambridge University Press. https://doi.org/10.1017/CBO9780511819322

Udeh, E., Duramany- Lakkotu, E.K., Bockarie, M.F., & Kollie, K.J.I. (2024). The impact of customer relationship management on financial performance of banks in developing countries*. European Journal of Economic and Financial Research. 8* (2), 45 – 74. http://dx.doi.org/10.46827/ejefr.v8i2.1673

Valmohammadi, C. (2017). Customer relationship management: Innovation and performance. *International Journal of Innovation Science, 9*(4), 374 – 395. https://doi.org/10.1108/IJIS-02-2017-0011

Vem, L. J., Mshelmbula, J. P., Ochigbo, A. D., & Agwom-Panle, R. (2024). How Internal Customer Relationship Management and Word of Mouth, Affect Customer Loyalty. *ETIKONOMI*, *23*(1). 81-92. https://doi.org/10.15408/etk.v23i1.26921

Verbano, C., & Crema, M. (2016). Linking technology innovation strategy, intellectual capital and technology innovation performance in manufacturing SMEs. *Technology Analysis and Strategic Management. 28*(5), 524–540. https://doi.org/10.1080/09537325.2015.1117066

Wu, S. I., & Lu, C. L. (2012). The relationship between CRM, RM, and business performance: A study of the hotel industry in Taiwan. *International Journal of Hospitality Management,* *31*(1), 276–285. https://doi.org/10.1016/j.ijhm.2011.06.012

Yeap, J. A., Ramayah, T., & Soto-Acosta, P. (2016). Factors propelling the adoption of m-learning among students in higher education. *Electronic Markets*, *26*, 323-338. https://doi.org/10.1007/s12525-015-0214-x