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Effects of Customer Relationship Management Strategy on Selected Commercial Private Banks' Performance in Addis Ababa Ethiopia: The Mediating Role of Brand Equity

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Abstract

Both customer relationship management and brand equity are important factors that influence a company's overall performance. A mixed-methods strategy was used in gathering data by using structured questionnaires from 312 workers of six private banks with head offices in Addis Ababa. Result shows CRM enhances BE, which subsequently improves customer trust, loyalty, and engagement, ultimately boosting bank performance. The findings demonstrate that CRM significantly and positively impacts banks' performance and brand equity (BE), with strong direct effects ($\beta = 0.48$, $p<0.001$ and $\beta = 0.73$, $p<0.001$ respectively). Furthermore, Brand equity has a substantial effect on Bank Performance ($\beta=0.351$, $p<0.001$), suggesting that a strong brand influences banks operational and financial success. Additionally, CRM has an indirect effect on bank performance through brand equity ($\beta=0.384$, $p<0.001$), signifying that a partial mediating factor in the link between CRM and performance is brand equity. Therefore, banks should include regular brand equity assessments, leveraging data-driven CRM tools, and harmonizing CRM practices with BE initiatives. Banks should deploy robust CRM systems capable of capturing detailed customer insights through personalization of services, efficient resolution of customer concerns, and proactive customer engagement to improve customer satisfaction and loyalty; leading to enhanced performance.

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INTRODUCTION

The demand on businesses to stay competitive has made customer relationship management (CRM), more and more crucial and CRM is frequently marketed as being crucial to a business's survival (Paşcalău et al., 2024). As stated by Soltani and colleagues (2018), in the modern world, it is a crucial and expanding business technique that is used to oversee a business's relations with both present and potential clients. The increasing significance of agility and CRM (customer relationship management) in any company is widely acknowledged and the subject of much research across all fields (Ngo & Vu, 2021).

Moreover, customer relationship management's objective is to find, attract, and, acquiring, retaining, and retaining profitable and loyal customers since they are crucial to the success of a business (Rahman et al., 2021). Similarly, Nedeljković et al.(2022) explains as customer relationship management, is a procedure that attempts to improve economic performance by establishing, preserving, and maintaining long-term customer connections using information and communication technologies.

According to Ripa and Nicolescu (2023), customer relationships management recently emerged as among the marketing strategies believed to help businesses succeed in highly competitive environment. It is essential not only to big organization, but also to small and medium-sized businesses and is more than just an information tool (Alqershi et al., 2020). Moreover, it is becoming more widely acknowledged that small and medium enterprises can improve their business performance by integrating CRM technologies (Nethanani et al., 2024). Long-term customer management is vital to an organization's financial success, particularly when combined with advancements in processes and products (Guerola-Navarro et al., 2021). Furthermore, wherever CRM has been properly used, it has created growth and expectations for the future and produced outstanding returns on investment (Guerola-Navarro et al., 2024).

Recent empirical studies continue to advocate the positive correlation between business performance and customer relationship management. For example, Barasa and Ahmad (2024) investigated the adoption of mobile CRM by Kenyan companies. Based on their study, the adoption of CRM significantly influences sales revenue performance, with determinants like IT infrastructure, company size, and competition in the market influencing levels of adoption. Several researches on customer relationship management have been done from different perspective in diverse sectors and different countries. For example, Taiwo (2024) conducted research on relationship management with customers in Selected Hotels' Performance in Nigeria and found significant relationship between organizational performance and CRM aspects. Shalaby et al.(2024) studied how CRM affected Cameroonian banks' financial performance and found a strong positive correlation between CRM and financial performance. Similarly, according to the findings of a study on the relationship between customer relationship management and customer satisfaction and performance in the Jordanian hotel industry, all four CRM dimensions had a positive and noticeable effect on Jordanian hotels' customer performance, with knowledge management and CRM organization having the biggest effects on customer satisfaction (Al-Kharabsheh, 2024).

Additionally, Eboh et al.(2024) examines the relationship between the performance of South-East Nigerian deposit money banks and customer relationship management and comes to the conclusion that it significantly affects the latter's performance. Furthermore, Khan (2018) analysis of the connection between marketing success and management of client relationships (CRM) and result revealed a positive correlation and financial institutions' marketing performance is also impacted by the CRM's dimensions. On the other hand, Hassanpour and Rostamian(2019) investigated how customer relationship management affected the financial performance of herbal product manufacturers and found little or no effect of CRM and its components on the company's financial success.

The findings of Hanaysha and Mehmood (2022) study on the effect of customer relationship management on the organizational performance of the banking sector demonstrate that CRM organization and customer orientation greatly enhance organizational performance. They also attested to the fact that organizational performance and effectiveness is significantly impacted by knowledge management and CRM-based technologies. Moreover, Quzwen et al.(2021) claimed that the adoption of customer relationship management greatly enhanced the corporate performances of courier companies involved in business-to-business marketing. Similarly, Rahman et al.(2021) examine how customer relationship management affects organizational performance in Bangladesh and conclude that customer relationship management significantly and positively affects performance. Sanasam et al.(2022) analyze how customer relationship management affects characteristics in the hotel industry, including technology, knowledge management, CRM structure, and customer focus. The results showed a positive association between hotel organizational performance and relationship management with customers and its elements. On the other hand, Nedeljković et al.(2022) looks into how customer relationship management affects organizational performance where the findings of the study indicate that CRM technology has a statistically significant detrimental influence on marketing and financial performance.

Customer relationship management focusses on ways to keep clients, which aids in increasing revenue (Soltani et al., 2018). Moreover, according to study by Al-Weshah et al. (2019) systems for managing customer relationships and organizational effectiveness in Jordan, the performance of Jordanian telecommunications businesses is significantly impacted by CRMS aspects.

Furthermore, Jashari (2024) examined how three aspects of client relationship management; technology-based CRM, CRM information management, and a key customer focus all have an impact on customer happiness and retention where the findings indicate the influence of these aspects on customer retention. Khan et al. (2022) investigated, using customer satisfaction as a mediator, the relationship between CRM, company reputation, and customer loyalty in small and medium-sized businesses. Their results showed customer loyalty is meaningfully and favorably impacted by both CRM and business reputation. Similar to this, Attia (2023) looked at how customer relationship management and a sustainable supply chain affected organizational success in the Egyptian textile sector. The results showed a relationship between customer relationship management, organizational performance, and competitive advantage. Furthermore, research by Junior Oti-Frimpong et al.(2022) reveals that customer relationship management, has a positive and statistically significant effect on business success. Amegavie et al.(2019) investigated and found that an effective CRM implementation significantly and favorably affects an organization's performance. Similarly, Lebdaoui and Chetioui (2020) investigated and validated CRM methods' beneficial effects on banking structures' organizational performance. Moreover, (Sofi et al., 2020) looked into how CRM dimensions affected hotel guests' satisfaction and confirmed that CRM dimensions like knowledge management, customer orientation, CRM organization, and CRM-based technology had an effect on customer satisfaction and helped the company achieve its goals. Contrast to this concept, Alqershi et al. (2020) studied and conclude that key customer focus and CRM knowledge management had no impact on the success of the company; but only technology-based CRM and CRM organization were found to have a meaningful impact.

Customer Relationship Management (CRM)-Brand Equity (BE) Relations

In regard to customer relationship management and brand equity relationships, the CRM-brand equity relationship has been explored in various contexts. Deb et al. (2023) studied mutual fund investors and confirmed that technology-enabled CRM enhances the degree of relationship quality outcomes, which are positively reflected in investment decisions, showing how CRM builds brand trust and equity. Their findings indicate that effective CRM practices, which are facilitated by technology, establish trust and commitment between firms and customers, and thereby create brand equity.

González et al.(2023) analyzed hotel customers in Spain and determined that value co-creation activities, a component of CRM, have a positive effect on brand equity, which, in turn, enables customer satisfaction which results in performance. Furthermore, T.B. et al. (2022) examined the relationship between CRM, innovation capability, and SME performance in Nigeria. They established that CRM practices significantly influence innovation capability, which enhances firm performance. This reveals that CRM has a direct and indirect influence on brand equity. From this concept it is possible to conclude, customer relationship management has a significant role in developing brand equity by establishing trust, value co-creation, innovation, and customer satisfaction, ultimately enhancing firm performance. Hence, the article has proved the concepts.

Brand Equity and Firm Performance

Regarding to brand equity-firm performance relationships; brand equity's effect on firm performance remains significant. For example, Cheng and Hou (2024) examined Chinese listed companies and concluded that brand equity positively affects financial performance (measured as Tobin's Q), especially in those regions with more developed economic levels and under some institutional settings.

Furthermore, Akdogan et al.(2024) studied Turkish banks and identified customer-based brand equity as a mediator of marketing activity and business performance, noting its central role in enhancing firm results. Additionally, Gonu et al.(2024) also revealed that customer satisfaction and loyalty, components of brand equity, have a significant role in mediating the link between CRM practices and organizational performance in Ghana's commercial banks. This reflects the centrality of brand equity attributes to the improvement of firm performance.

Narteh (2018) investigated the retail banking sector in an effort to determine how financial performance relates to brand equity. The study concluded that attributes of brand equity, such as service quality, brand association, and brand loyalty, were useful in predicting financial performance. The main concept in the above narration is that brand equity makes a positive and significant contribution to the enhancement of firm performance across different industries and countries.

Mediating Role of Brand Equity

Several empirical studies highlight as brand equity has been portrayed as a mediator between CRM and company performance, which may have a moderating effect on the relationship between CRM and firm performance. For instance, Akdogan et al.(2024) noted that impacts of marketing resources' activities and their effects on bank business performance are indirectly mediated through customer-based brand equity. They indicated from their research that more investments in marketing resources reinforce brand equity and subsequently increase business performance, citing the significant impact of brand equity as a better resource. González-Mansilla et al.(2023) explained how value co-creation campaigns in the hospitality sector enrich brand equity, and this enriching effect in turn contributes to improved customer satisfaction, implying an intermediary role of brand equity on the relationship between CRM and performance. This supports the hypothesis that brand equity is one of the key mediators of the impact of customer engagement programs on firm performance.

Within the telecommunication industry, Amoako (2019) investigated the brand equity mediating effect in the relationship between relationship marketing and firm value. The study revealed that relationship marketing constructs such as trust, empathy, and communication positively influence brand equity, which has a significant effect on firm value. This research illustrates that brand equity plays a significant mediator, converting relationship marketing efforts into enhanced firm performance.

All the above studies were conducted in various countries, at different periods, and within different sectors, provide valuable insights. In the context of developing nations like Ethiopia, research on effects of CRM on firms' performance through the mediating role of brand equity remains a significant concern. Therefore, drawing on this body of research, the following sub-hypotheses were developed and tested within the Ethiopian banking sector to assess CRM's effects on bank performance through brand equity's mediating role.

Hypothesis

The following sub-hypotheses were established based on the above described ideas and examined in the subsequent subsection.

H_1a: Customer relationship management significantly affects banks' performance.

H_1b: Brand equity mediates the link between banks' performance and customer relationship management.

H_1c: Customer relationship management significantly affects brand equity.

H_1d: Brand equity significantly influences banks' performance.

Theoretical Literature Review

Customer Relationship Management and Its Foundational Theories

Customer Relationship Management (CRM) refers to the techniques, technologies, and practices utilized by firms to guide and gauge customer relationships throughout the customer lifetime cycle with an aim of enhancing customer satisfaction, retention, and ultimately long-term profitability (Payne & Frow, 2005). Conceptual basis for CRM lies in Relationship Marketing Theory that centers on long-term commitment as opposed to short-term transactional relationship (Morgan & Hunt, 1994). It is a follow-up to this theory that establishing trust and commitment between a business and consumers leads to improved loyalty and repeat business, eventually influencing company performance.

Resource-Based View (RBV) is also consistent with strategic implementation of CRM. As per RBV, CRM capabilities in terms of customer knowledge, interaction, and customization of the service are valuable, rare, and inimitable resources that make firms a sustained competitive advantage(Barney, 1991). When they are able to execute CRM in an effective manner to develop these intangible assets, value of customers is enhanced and enhanced performance results emerge.

Brand Equity Theoretical Concepts

Brand equity refers to the worth assigned to a product or service because of its brand name, shaping consumer behavior and choice(Keller, 1993). "*Perceived quality, brand loyalty, brand awareness, and brand association are the most crucial elements of brand equity*". From a conceptual standpoint, Keller's Customer-Based Brand Equity (CBBE) paradigm is a popular paradigm. It contends that strong brand equity is based on positive consumer attitudes and experiences, which subsequently result in firm profitability and long-term success (Keller, 2001). Brand equity is a potential outcome of good customer experience and relationship work in CRM. CRM actions such as responsiveness, personalization, and customer engagement directly affect consumers' sense of and relationship with a brand and therefore enhance brand equity(Kim et al., 2003).

Company Performance and the Role of CRM and Brand Equity

Firm performance encompasses financial (e.g., profitability, ROI) and non-financial (e.g., customer satisfaction, market share) outcomes. Empirical evidence suggests that CRM competencies lead to improved performance through enabling firms to understand customer needs and deliver greater value(Bierstedt & Blau, 1965). Similarly, brand equity leads to performance through leveraging price premiums, customer retention, and competitive advantage(Ailawadi et al., 2003). Studies show that CRM positively affects brand equity. Effective CRM enhances customer satisfaction and trust, which can positively influence brand associations and loyalty(Ishaq, 2012). For instance, an organization that provides timely and personalized customer service will likely enjoy better customer relationships and more favorable brand impressions. This implies that brand equity can be used as a mediating variable, linking CRM initiatives to firm performance.

The business idea of relationship management for customers (CRM) is used to handle interactions with clients, customers, and sales prospects; using technology to plan, automate, and coordinate corporate operations is what it entails in order to boost revenue, profitability, customer satisfaction, and eventually brand loyalty (Hajiyan et al., 2015)**.** Furthermore, according to Adolph (2016), CRM is the term for the set of procedures, tactics, and tools used by businesses to track and assess customer data and interactions across the customer lifecycle to improve customer service, increase customer retention, and raise sales.

According to Soltani et al.(2018), Customer relationship management (CRM) is an important aspect of the contemporary business landscape and developing area that is used to manage interactions between a firm and its existing and potential customers. They also affirmed that the responsibility of the CRM method is to analyze customer history data for a business that focusses on customer retention strategies, which in turn contributes to the increase of sales.

Management of customer relationships (CRM) is a crucial organizational tool that improves customer happiness and loyalty over the long term, which benefits business-customer connections and ultimately boosts organizational success (Herman et al.,2021). According to Guerola-Navarro et al.(2024) with a particularly significant impact on entrepreneurship, customer relationship management, has become a powerful technological as well as a highly influential business management strategy. Wherever CRM has been used, it has produced outstanding returns on investment and contributed to growth and expectations for the future.

METHODOLOGY OF THE STUDY

The main aim of this research is "Identifying effects of Customer Relationship Management Strategy on Banks' Performance through the mediating role of brand equity" and provide robust insights into CRM practices and how they affect the performance of private selected commercial banks' in Addis Ababa Ethiopia. The study adopts a pragmatism philosophy, allowing for a mixed-approaches strategy that incorporates both qualitative and quantitative research methodologies. This approach is ideal for exploring the complex relationships between CRM strategies brand equity and bank performance, enabling flexibility and practical solutions tailored to the research objectives.

The research design follows descriptive and explanatory mixed-methods approach. Explanatory research investigates causal relationships between CRM strategies, such as customer orientation, customer knowledge management, customer intimacy, CRM based technological infrastructure, and CRM organization process, and brand equity and bank performance. The target population for this study includes selected private commercial banks in Ethiopia that have been operating for over fifteen years. Marketing and CRM staff at the head offices of these banks are selected as they have direct knowledge of CRM practices, brand equity and their effects on the overall bank performance. The sampling technique is multi-stage, integrating both non-probability and probability techniques. Initially, as purposive sampling, a non-probability sampling approach is used to select six private banks in Addis Ababa based on their operational experience which is in operation for more than 15 years and longevity. These banks include Awash Bank, Dashen Bank, Hibret Bank, Nib International Bank, Cooperative Bank of Oromia, and Oromia Bank. Within each bank, probability sampling is used to select respondents from the marketing and CRM departments, while convenience sampling is applied to ensure accessibility and feasibility in data collection from the selected sample.

In order to calculate the sample size, the research used (Morris, 2014) simplified formula, resulting in 376 responders were selected from a target group of 579 staffs.

The size of the sample is calculated as:

$$n=\frac{NZ^2pq}{(E^2(N-1)+Z^2pq}$$

The necessary sample size is denoted by n.

N is the size of the entire population.

The population proportions, p and q, are both set to 0.5.

z is the value that defines the desired confidence level for the confidence interval when analyzing the data. A common confidence level in surveys is 95%, for which z is 1.96.

E determines the precision of the sample proportions. For instance, if you aim to estimate the proportion of individuals supporting a policy with a margin of error of ±3%, E would be set to 0.03.

Thus, the sample size is calculated as follows.

$$n=\frac{(579)(1.96)^2(0.5*0.5)}{((0.03)^2(579-1)+(1.96)^2(0.5*0.5)}$$

Out of the 376 questionnaires distributed 312 was properly filled and used for this analysis purpose representing 83 % response rate. The sample is stratified by bank, ensuring proportional representation. Primary data is collected through structured questionnaires developed in Likert scale with five points. In this case, 1 denotes strongly disagree, 2 disagree, 3 neutrals, 4 agree, and 5 highly agree in which respondents are required to share their responses to the statements indicating the degree to which the identified variables of relationship management for customers has influenced their banks' performance through the mediating role of brand equity. SPSS version 23 was used to analyze the quantitative data that was gathered. With a focus on the direct and indirect effects of CRM on banks' performance, the hypotheses are tested and the causal linkages between CRM strategies, brand equity, and bank performance are examined using structural equation modelling (SEM). Confirmatory Factor Analysis (CFA) is used to validate the measurement model, guaranteeing the validity and reliability of the constructs(Hair et al., 2019).Reliability is assessed through Cronbach's alpha, with respectable numbers above 0.7, and using composite reliability to guarantee internal consistency (Hair et al., 2011).

EFA assists in determining the underlying data structure without any a priori expectation, determining the number of factors and which items load on which factors. EFA is normally the initial step in scale development to examine the data structure prior to proceeding with CFA (Hair et al., 2019). Techniques like Principal Component Analysis (PCA) is used in EFA to perform the extraction of the factors. Extraction identifies what factors cause the variation in observed variables, and following extraction, it can be decided that there is convergent validity by examining factor loadings as well as the size of correlations (Hair, 2016). As a product of exploratory factor analysis forms, validity is confirmed through statistics and expert opinion, using the average variance extracted (AVE) and square root of average variance extracted, with convergent and discriminant validity being capable of ascertained (*Hair et al,2010)*.

The informed consent of the participants provides anonymity and confidentiality throughout the research process, reflecting the significance of ethical considerations in the research. The ethical principles of autonomy, justice, and voluntariness are adhered to while upholding the integrity of the study. Overall, this comprehensive methodology ensures the study is successful in achieving the research objectives and provides valuable insight into the influence of CRM strategies on banks performance in Ethiopia through the mediation role of brand equity.

Conceptual Framework and Model Based on Empirical Literature Review

The diagram depicts the core significance of CRM for organizational performance. CRM areas such as customer-centricity, knowledge management, and IT infrastructure are key to establishing stable customer relationships. Hanaysha and Mehmood, (2022) determined that among the CRM parameters, these exert a significant impact on organizational performance indicators like profitability and customer retention in banking sectors. Similarly, Grace Ufuoma (2024) demonstrated that Nigerian banks with sound CRM practices enjoy higher asset bases and turnover values. The evidence in this case indicates that CRM is not just customer interaction management but utilizing the interactions to drive business performance.

Brand Equity (BE) is also an important driver depicted in the diagram that is influenced by factors such as brand awareness, brand association, perceived quality, and brand loyalty. Karim et al.(2024) noted that experience is an important driver of brand equity in private banking and intervening factors such as brand identification, attachment, and engagement. To this,(Akdogan et al., 2024) pointed out that customer-based brand equity acts as a mediator between marketing orientations and business results in the banking industry. All these findings together point out that healthy brand equity reaffirms customer trust and loyalty, having a direct impact on organizational performance.

Integrating Customer relationship management (CRM), and Brand Equity (BE) the figure demonstrates a synergistic impact on organizational performance. Effective CRM initiatives contribute to the building of brand equity by building customer experience and satisfaction. Rahman et al.(2024) found that customer satisfaction serves as the mediator of CRM and market performance in the hotel sector, such that satisfied customers are more likely to become repeat customers, improving brand equity and overall performance. This integrative perspective aligns with the contention of Swathi (2022), who contended in favor of an integrated CRM framework that ties together customer satisfaction and loyalty, which in turn drives the interdependence of customer relationship management, brand equity and performance. Based on the above empirical evidence conceptual frame work for this study is as follows.

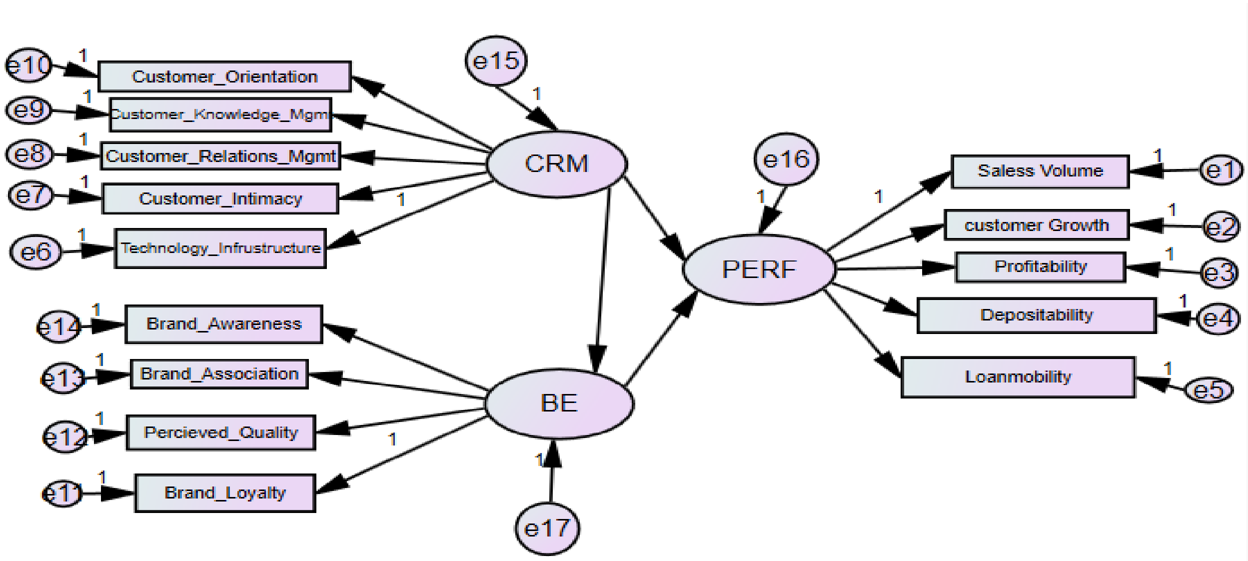


Figure 1: Conceptual Framework Based on Empirical Literature Review

Source: (Shriedeh & Ghani, 2016; Amoako, 2019;Cheng & Hou, 2024)

RESULTS AND DISCUSSION

This section presents the findings of the study with an explanatory analysis that is in harmony with the research objectives and hypotheses. Findings are structured and interpreted to emphasize to draw conclusions from the information

Table 1
Reliability Test of Measures

Variables	Dimension	Cronbach Alpha (α) values	Overall α-value
Management of Customer Relationships(CRM)	Orientation to the Customer	0.945	0.921
	Management of Customer Knowledge	0.908	
	Customer Relation Management	0.923	
	Customer Intimacy	0.910	
	Technology Infrastructure	0.926	
Brand Equity	Awareness Brand	0.856	0.898
	Brand Association	0.768	
	Quality Perception	0.888	
	Brand Loyalty	0.894	
Performance	Sales Volume	0.934	0.892
	Customer Growth	0.877	
	Profitability	0.891	
	Deposit ability	0.879	
	Loan ability	0.878	

Source: Result Computed from Survey Data (2024)
All items are measured with five-point Likert scale

Furthermore, table 1 presents the reliability test results of various measures across key variables, specifically focusing on the Cronbach's Alpha (α) values, a common measure of internal consistency. A Cronbach Alpha value above 0.70 is generally considered acceptable for social science research, with higher values indicating stronger reliability (Hair et al*,*2010*).*

Customer Relationship Management (CRM**)** variable covers technology infrastructure, customer intimacy, customer relationship management organization, customer knowledge management, and customer orientation. Each dimension also has high reliability (ranging from 0.908 to 0.945), with an overall α-value of 0.921, indicating excellent internal consistency across CRM measures. Performance variable, though not broken into sub-dimensions, has an α-value of 0.892, which reflects a high degree of reliability in measuring this construct.

Convergent & Discriminant Validity Test

For validity test, exploratory factor analysis with confirmatory factor analysis was used. During exploratory factor analysis because of the loading factor of technology infrastructure from CRM is lower and perceived quality loading is lower from brand equity, these indicators were removed as recommended by Hair et al.(2019). Results of principal component analysis from exploratory factor analysis revealing convergent and discriminant validity test is presented in the following table.

Table 2

Discriminant and Convergent Validity Test

Component	Indicator	Loading	Squared Loading	AVE	√AVE	Interpretation
Performance	PERF02	0.872	0.760	0.690	0.831	Strong convergent validity
	PERF05	0.869	0.755			
	PERF04	0.843	0.710			
	PERF01	0.795	0.632			
	PERF03	0.770	0.593			
Customer Relationship Management	Customer_Intimacy	0.898	0.807	0.453	0.673	Acceptable (borderline)
	Customer_Knowledge_Mgmt	0.592	0.350			
	Customer_Orientation	0.585	0.342			
	Customer_Relations_Mgmt	0.560	0.314			
Brand Equity	Brand_Awareness	0.871	0.759	0.570	0.755	Strong convergent validity
	Brand_Association	0.823	0.677			
	Brand_Loyalty	0.524	0.274			

Source: Result Computed from Survey Data (2024)

The above table 2 includes the loadings of all indicators, along with AVE and √AVE for every construct.

As would be seen from the above table, Performance and Brand Equity: Both have AVE > 0.50 and √AVE > 0.70, with high convergent validity. High loadings (more than 0.70) of all these indicators provide evidence in favor of these constructs' reliability (Hair, 2016). Customer Relationship: AVE of 0.453 is below the recommended 0.50, but the √AVE of 0.673 is acceptable. Although 0.50 is the standard

AVE benchmark, Fornell & Larcker (1981) pointed out that if composite reliability (CR) is greater than 0.60, AVE values below 0.50 can be accepted (Hamid et al., 2017). As shown in Table 1, all customer relationship management dimensions in this instance exhibit composite reliability greater than 0.92, indicating an extremely satisfactory degree of internal consistency.

Table 3
Discriminant Validity

Component	Performance	Customer Relationship	Brand Equity
Performance	0.831	0.513	0.499
Customer Relationship	0.513	0.673	0.443
Brand Equity	0.499	0.443	0.755

Source: Result Computed from Survey Data (2024)

The above table 3 contrasts the square root of AVE (√AVE) with the correlations among the components to confirm discriminant validity. Performance and Customer Relationship: √AVE of Performance (0.831) is greater than its correlation with Customer Relationship (0.513), and similarly, √AVE of Brand Equity (0.755) is greater than its correlations with Performance (0.499) and Customer Relationship (0.443). These results meet the Fornell-Larcker criterion of discriminant validity since they prove that these constructs are not one and the same(Hair et al., 2019; Bagozzi et al., 1981).

Structural Equation Model of CRM- BE-PERF

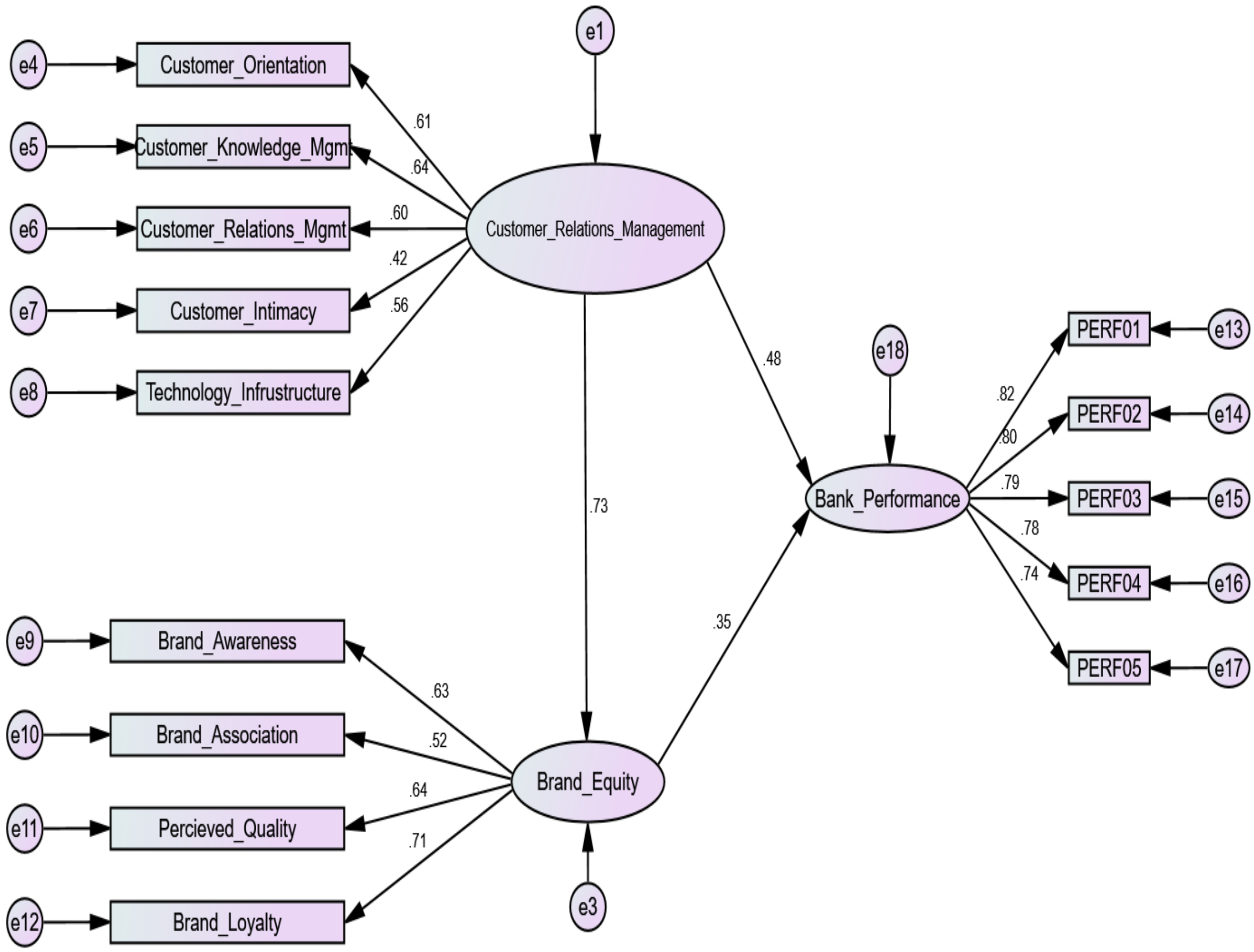
Once the entire separate measurement model for each constructs of each variable; pooled measurement model was conducted a separate structural equation model for CRM-BE-PERF were also prepared based on the parceled data and the hypothesis of the study were also tested and presented as well.

Path Analysis and Hypothesis Testing

Following the establishment of the measurement model's validity and reliability, the suggested associations are tested using the Bootstrapping procedure. According to this study, bank performance is directly impacted by both brand equity and CRM, and CRM indirectly affects bank performance through brand equity.

The relationship between CRM and bank performance is mediated by brand equity, which also affects each individual. All of these hypotheses are investigated in this section. The CRM-BE-PERF SEM is shown below.

Path Analysis and Hypothesis tests of CRM-BE-PERF
Figure 1: CRM-BE-PERF Structural Equation Model



Source: Result Computed from Survey Data (2024)

Table 4
Structural Model Fitness Indices for Figure 1 Above

x^2 *(df)*	P-Value	x2 /df	GFI	CFI	SRMR	NFI	IFI	RMSEA
108.473 (74)	0.076	1.466	0.953	0.978	0.048	0.935	0.978	0.039

Source: Result Computed from Survey Data (2024)

The values in table 4 above show that the model fit indices exceed the minimum required thresholds: X^2 (df) = 108.473 (74), p = 0.076; GFI = 0.953; CFI = 0.978; NFI = 0.935; IFI = 0.978; normed chi-square = 1.466; SRMR = 0.048; and RMSEA = 0.039. These results confirm that the data is well-suited to the model. Consequently, all necessary fitness indices for the structural equation model are met, allowing for hypothesis testing through path analysis. In table 5 below, the effects of the exogenous variables on the endogenous variable, along with the significance of each path coefficient, are presented.

Table 5
The unstandardized regression weights and significance levels for each path estimate are shown in Figure 1.

Construct	Path	Construct	Estimate	S.E.	C.R	P	Result
BE	←	CRM	.706	.102	6.905	***	Significant
Bank PERF.	←	CRM	.724	.167	4.335	***	Significant
Bank PERF.	←	BE	.543	.163	3.343	***	Significant

Source: Result Computed from Survey Data (2024)
*** indicates highly significant at <0.001

Table 6
Standardized Regression Weights for Each Path Estimate shown in Figure 1.

Construct	Path	Construct	Estimate
BE	←	CRM	.725
Bank PERF.	←	CRM	.480
Bank PERF.	←	BE	.351

Source: Result Computed from Survey Data (2024)

Table 7
Results of Hypothesis Testing for the Corresponding Path.

Hypothesis Statement	**Estimate**	**P-Value**	**Hypothesis Result**
H_1**:** CRM has a significant effect on BE	.706	***	Supported
H_2: The performance of banks is significantly impacted by CRM.	.724	***	Supported
H_3: BE significantly affects the performance of the bank.	.543	***	Supported
H_4: Through BE, CRM significantly influences banks' performance indirectly.	.384	***	Supported

Source: Result Computed from Survey Data (2024)

As shown in the previous table 5, CRM has a significant and positive direct impact on bank performance at the 0.05 significance level ($\beta = 0.724$, $t = 4.435$, $p < 0.001$). This supports the hypothesis that CRM positively influences banks' performance, aligning with earlier research findings of Mahmoud Al-azzam (2016); Chetioui and Abbar (2017) and Hassan et al. (2020); Elaheh Taghavi Shavazi, 2013; Adiele & Gabriel (2013); Haghshenas & Mir Ahmadi (2015); AlTabbaa & Ankrah (2016). This suggests that banks are recommended to have well integrated customer relations management to boost their performance. The effect of brand equity (BE) on bank performance was also examined in this study within the CRM-BE-PERF model. As is evident from the same table, BE was positive and significant on bank performance at 0.05 significance level ($\beta = 0.543$, $t = 3.343$, $p < 0.004$). This justifies the argument that BE exerts a notable positive impact on banks' performance, and it is aligned with the existing evidence from earlier research works of Ardestani et al., (2012); Aydin, (2015); Buzdar et al., (2016); Narteh (2018); Chepkwony et al., (2018). This suggests that banks are recommended to audit every time their brand equity as it was found to improve their performance.

The indirect effect of CRM on bank performance through brand equity (BE) was also investigated in this study. Sobel test and bootstrap techniques were employed to lower any bias, with the results tabulated in tables 6 and 7 below. In the SEM analysis presented in the table 3 above, BE was found to have a positive and significant impact on banks' performance at the 0.05 significance level ($\beta = 0.543$, $t = 3.343$, $p < 0.000$). This supports the hypothesis that BE significantly enhances banks' performance, providing a solid basis for testing the indirect effect of CRM through BE.

The indirect or mediation effect is examined using the Sobel test (the variant that employs the standard error in Equation, $SE_{ab} = \sqrt{SE_b^2 + b^2 SE_a^2}$ and $Z = ab/\sqrt{SE_b^2 + b^2 SE_a^2}$) as well as a variant that uses 5000 resampling and a nonparametric bootstrapping process. It is common knowledge that one of the assumptions of the Sobel test is the requirement of a large sample size (Moke et al., 2018; Soleman & Tiffanie Victoria, 2021). Therefore, under the assumption of normality of the sampling distribution of the product term ab and with a significance level of $\alpha = .05$, the approximate critical value for a two-tailed test is ± 1.96. In order to perform the test, this critical value (± 1.96) of the standard normal distribution at $\alpha = .05$ is contrasted with the computed Z value of the indirect effect. However, with decreasing sample size, the Sobel test is less conservative (Zhang & Li, 2023).

Hillier et al. (2024) caution against the application of the normal distribution in the calculation of the p-value of the Sobel test because the sampling distribution of the product term ab need not be a normal distribution. The distribution of such products in most instances will be positively skewed, and thus confidence intervals under normality assumptions are symmetric and can yield tests of mediation with weak statistical power.

Alfons et al. (2022) advise against the application of the normal distribution to the estimation of statistical significance. Alternatively, they suggest bootstrapping the sampling distribution of ab to produce a confidence interval from the experimentally acquired distribution, or comparing the computed product with a set of critical values derived from simulation studies. Bootstrapping is a nonparametric hypothesis testing and effect size estimation procedure that is free from assumptions about the shapes of the variables' distributions or the sampling distribution of the statistic(Creedon & Hayes, 2015;Ohlendorff et al., 2025).

Additionally, it offers a test independent of large-sample theory and hence is more suitable and dependable to use with small sample. This procedure involves drawing a large number of resamples of size n (equal to the original sample size) from the data, with replacement sampling, and estimating the indirect effect (ab) for each resample (Koopman et al., 2015) . Bootstrap methods have been recommended by researchers like (Alfons et al., 2022) as a remedy for the issue of loss of statistical power caused by asymmetry and other normality violations in the sampling distribution of ab.

By using these approaches in this study, the bootstrap analysis (a * b = 0.351), which has a 95% confidence interval between 0.034 and 0.764, showed that CRM has a positive and substantial indirect effect on performance. A unit increase in CRM causes a 0.706-unit rise in the indirect relationship of BE; with CRM held constant, there is a 0.543-unit rise in bank performance for every unit increase in BE. Additionally, the direct effect c (.724) was also significant (p = .000); when BE is held constant, a unit increase in CRM boosts performance by 0.724. Since a x b x c equals (.278) where a=0.706, b=0.724 & c=0.543, which is positive, it indicates that both CRM and BE significantly influence performance. Furthermore, BE was identified as a mediator in the relationship between CRM and bank performance, confirming that CRM indeed has an indirect effect on performance, thereby supporting hypothesis H_4. This finding suggests that business owners are strongly encouraged to actively engage in CRM to enhance their business performance.

In this study, the confidence limits for the indirect effect, along with the confidence levels and p-values of the independent variables, were calculated after employing bias-corrected bootstrapping, as this method offers the most precise confidence limits and enhanced statistical power. The findings are displayed in tables 8 and 9.

Table 8
Indirect Effect Z-value and P-values

Path	**Path a CRM → BE**	**SE $_{(a)}$**	**Path b BE → PERF**	**SE $_{(b)}$**	**a*b**	**Pooled SE_{ab}**	**Z-value**	**P-value**
CRM → BE → PERF	0.706	0.102	0.543	0.163	0.383	.191	2.005	0.0227

Source: Result Computed from Survey Data (2024)
Note: CRM = Customer Relations Management, BE = Brand Equity and PERF = Performance.

Table 9
Bootstrapped Confidence Level for P-values

Path	**95% Lower Bound**	**95% Upper Bound**
CRM → BE → PERF	0.034	0.683

Source: Result Computed from Survey Data (2024)

As it can be seen from the above table 8, CRM has an indirect effect because as it can be observed in table 9, zero was not included in the range of lower and upper bounds of the bootstrapped confidence level that justifies the P - values of CRM. Thus, we can conclude that CRM was found to have an indirect effect or BE was found to mediate the CRM-PERF linkage and the effect size was computed as follows.

Determining the Effect Size of Indirect Effect of CRM

According to Kenny (2016), the measurement of mediation or the indirect effect is defined as the indirect effect divided by the total effect, which represents the percentage of the effect that is mediated. To ascertain whether mediation is partial or full, the general guideline is that a proportion of the overall effect to the indirect effect must be at least 0.80 to claim complete mediation. In this study, the Variance Accounted For (VAF) was utilized to assess the effect of mediation, following the recommendations of Hair et al. (2013). The VAF was calculated for each variable to determine the indirect effect's magnitude relative to the overall effect (which is the total of both direct and indirect effect): VAF = indirect effect/total effect (Hair et al., 2013). The calculated Variance Accounted for (VAF) values indicating partial mediation for each dimension are presented in table 7.

Table 10

Variance Accounted for (VAF) Significant Indirect Effect on PERF

Construct	Direct Effect(1)	Indirect Effect(2)	Total Effect(3) = (1)+(2)	VAF (2) / (3)
Brand Equity	.724	.384	1.108	0.355

Source: Result Computed from Survey Data (2024)

As we can see from the above table 7, the variance accounted for CRM is 35.5% and its indirect effect is partial mediation because their effect sizes are below 80%, in other words, BE partially explains the relationship between CRM and banks' performance (Hair *et al.*, 2013). A VAF of 20% to 80% indicates partial mediation and this means Customer relationship management influences performance both directly and indirectly by some other variable (Sarstedt et al., 2020; J. Hair & Alamer, 2022). In this instance, brand equity (BE) may account for about 35.5% of the indirect impact of customer relationship management on performance. This suggests that while customer relationship management alone has substantial influence on performance, it is enhanced to a larger degree when complemented with brand equity.

CONCLUSION

The result of the study confirms that customer relationship management significantly impacts bank performance, directly as well as indirectly, through brand equity's intermediary role. Brand equity supports the effectiveness of customer relationship management by encouraging customer loyalty and solidifying the image of the bank, resulting in long-lasting performance. The partial mediating role of brand equity implies that although customer relationship management directly affects business performance, its effects are greatly enhanced when paired with strong brand equity, which increases customer satisfaction and trust. The implication of this relationship is that banks need a balance strategy, interconnecting customer relationship management and brand equity efforts to best leverage customer relationships towards improved financial outcomes.

Overall, the results validate the assumptions that customer relationship management have a significant contribution to the performance of banks by enhancing brand equity, attesting to the pivotal role that such marketing activities play.

The results justify the strategic value of brand equity for the banking sector, confirming that increasing brand equity through customer relationship management can lead to more favorable performance outcomes.

The study demonstrates banks' necessity for implementing holistic techniques that take advantage of both customer relationship management for maximum performance, i.e., such strategies must not be isolated but must be coordinated to maximize brand equity.

Recommendation

Based on the conclusion derived from this study result, the following recommendation is forwarded.

The banks have to invest in robust customer relationship management systems that give profound customer insights, so that more personalized service can be offered and customers' needs can be addressed sooner. This will not only increase customer satisfaction but also loyalty, which is pivotal for performance improvement.

As brand equity is primarily responsible for enabling CRM's influence on performance, banks need to carry out brand audits on a regular basis and implement programs that increase brand value. Trust generation and credibility-building activities will strengthen customer relations, and this benefits performance. Using big data and analytics in CRM can help banks forecast customer preferences so that it becomes simpler to provide customized services and anticipate needs. By combining data-driven CRM with brand equity campaigns, banks can achieve a competitive edge in customer retention and profitability.

Given brand equity only partially mediates the relationship between performance and CRM, banks will still need to construct direct CRM plans and invest in brand equity. This approach will enable a holistic improvement of customer relationships and performance.

In order to maintain the CRM and brand equity effect, banks should be constantly reassessing performance, reshaping CRM practices and brand initiatives with evolving market forces. This will help them retain a responsive and customer-centric mode crucial for sustaining success over time.

Overall, banks need to devise and enact in-depth CRM strategies that support each other in order to maximize brand equity and performance results.

Banks are strongly recommended to conduct regular brand value and performance of CRM programs reviews. This will identify areas of strength, areas of weakness, and areas of opportunity for growth.

Banks ought to remain agile and responsive to changes in market direction and customer behavior. Refresh CRM projects regularly in order to remain competitive and react effectively to customers.

By taking these actions, banks can create a sound basis that employs CRM models in enhancing overall performance, establishing brand equity, and instilling customer loyalty in the face of a competitive financial landscape.

Managerial Implications

The study emphasizes the importance of customer-oriented strategies and robust CRM systems for banking excellence. Managers need to give importance to understanding the needs of customers through market research and feedback, and shape services accordingly to enhance the levels of satisfaction and loyalty. Investment in advanced CRM systems and effective knowledge management ensures personalized relationships, fact-based decision-making, and adherence to market trends.

In addition, regular staff training in CRM systems and customer service is needed to maintain high standards. Adjusting customer intimacy strategies to fix misalignments can also improve performance. Focusing on these areas will allow banks to boost customer satisfaction, gain loyalty, and remain competitive.

Authors' Contribution

The corresponding author, Abebe Shanko Doja, conceptualized the study, developed the methodology, prepared the first draft of the manuscript and carried out the data collecting and analysis. Co-authors, Chalchissa Amentie Kero and Beley Kinati Debelo, thoroughly discussed on the topic, reviewed the manuscript, offered critical comments, and contributed to refining the final draft. Both authors collaborated closely throughout the project, and the final version of the article was reviewed and approved by both parties.

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Declaration

The writers affirm that they have no competing interests.

Statement of Data Availability

Upon request, the corresponding author will provide all data.

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