



Effect of digital marketing on customer relationship management in tertiary institutions within Bauchi metropolis

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Abstract

This study examines the effect of digital marketing on customer relationship management (CRM) in tertiary institutions in Bauchi metropolis. With the increasing adoption of digital technologies, higher education institutions are leveraging digital marketing tools such as social media, email marketing, websites, and mobile platforms to enhance student engagement and institutional performance. The study adopts a conceptual and empirical review approach, drawing from recent literature and studies conducted within Bauchi metropolis and similar developing economies. Findings reveal that digital marketing significantly improves customer engagement, communication efficiency, service delivery, and student satisfaction, which are core components of CRM. Social media platforms and data-driven marketing strategies were identified as the most influential tools in enhancing relationships between institutions and their stakeholders. However, challenges such as inadequate digital infrastructure, lack of skilled personnel, and data privacy concerns persist. The study concludes that digital marketing plays a critical role in strengthening CRM in tertiary institutions and recommends increased investment in digital tools, staff training, and strategic integration of CRM systems.

Keywords: Digital marketing, customer relationship management, tertiary institutions, student engagement

Introduction

Today's dynamic and uncertain environment has contributed to the changing nature of markets. For companies to keep up, they will need to embark on new wave marketing to take advantage of the opportunities provided by changes in the environment, such as the digital revolution (Kotler, Kartajaya & Hooi, 2019) ^[9]. For this reason, digital marketing has become an indispensable tool for companies, since its effective use generates customer loyalty and retention, through interaction with them.

Digital marketing has evolved, progressively and very quickly, with profound changes, both in the techniques and in the tools used. Guerreiro and Loureiro (2020) ^[7] analyze how the different users of social networks interact and disseminate communication related to the causes of the digital age (expansion of Information and Communication Technologies) and how people search for advertising campaigns marketing related to your tastes and preferences according to your culture. Also, Viana (2020) ^[13] indicates that services are changing as companies require more analytical and technological skills. These new demands overlap with the integration of social media data into customer relationship management (CRM) tools to improve customer information.

According to Dastane (2020) ^[4] in developed countries of America and some other European countries, CRM is established as an approach to learn and influence customer behavior by writing meaningful communications to get more customers and retain existing customers. In fact, CRM ensures customer loyalty and profitability of the organization.

The rapid advancement of digital technologies has transformed how organizations interact with their customers globally. In Nigeria, tertiary institutions are increasingly adopting digital marketing strategies to enhance communication, engagement, and service delivery to students and stakeholders. Digital marketing involves the

use of online platforms such as social media, email, websites, and mobile applications to promote institutional services and maintain relationships.

Customer Relationship Management (CRM) is a strategic approach used by organizations to manage interactions with customers, improve satisfaction, and foster loyalty. In the context of tertiary institutions, students, parents, alumni, and other stakeholders are considered customers.

The integration of digital marketing into CRM systems allows institutions to personalize communication, improve responsiveness, and enhance service delivery. However, despite its benefits, many Nigerian tertiary institutions face challenges in effectively utilizing digital marketing tools for CRM purposes.

Many tertiary institutions in Nigeria have adopted digital platforms but still struggle with poor student engagement, ineffective communication, and low retention rates. This is largely due to inadequate integration of digital marketing strategies into CRM systems, lack of skilled personnel, and insufficient technological infrastructure.

Objectives of the Study

The main objective is to examine the effect of digital marketing on CRM in tertiary institutions.

Specific objectives:

1. To evaluate the effect of social media marketing on CRM
2. To determine the effect of email marketing on customer satisfaction
3. To assess the influence of website marketing on customer engagement

Research Questions

1. What is the effect of social media marketing on CRM?
2. How does email marketing influence customer satisfaction?
3. What is the relationship between website marketing and customer engagement?

Literature Review

1. Concept of Digital Marketing

Digital marketing refers to the application of internet-based technologies and digital channels to promote products, services, and organizational offerings while facilitating interaction with customers. It encompasses tools such as social media, email, mobile applications, websites, and search engines.

In modern organizations, digital marketing is not only a promotional tool but also a strategic mechanism for engagement and relationship building. It enables organizations to reach a broader audience, improve communication efficiency, and enhance customer experience. Digital marketing platforms allow institutions to interact with users in real-time, thereby improving responsiveness and personalization.

In the Nigerian context, digital marketing adoption has increased significantly due to rising internet penetration and mobile device usage. Studies show that digital marketing enhances business visibility and facilitates business-to-customer (B2C) communication, ultimately improving customer patronage and engagement (Ezurike, 2023)^[6].

Key dimensions of digital marketing include:

- **Social Media Marketing (SMM):** Platforms such as Facebook, Instagram, and X allow institutions to engage students through interactive communication, feedback, and content sharing.
- **Email Marketing (EM):** A direct communication channel that enables institutions to send personalized messages, updates, and notifications.
- **Website Marketing (WM):** Institutional websites serve as information hubs and service delivery platforms, providing access to academic resources and administrative services.
- **Mobile Marketing:** Includes SMS and mobile apps, which enhance accessibility and real-time engagement with students.

Digital marketing plays a critical role in tertiary institutions by supporting student recruitment, communication, and service delivery.

Concept of Customer Relationship Management (CRM)

Customer Relationship Management (CRM) is a strategic approach that organizations use to manage interactions with customers, improve satisfaction, and build long-term relationships. It involves the use of technologies, processes, and data analytics to understand customer needs and provide tailored services.

In tertiary institutions, CRM focuses on managing relationships with students, prospective applicants, alumni, and other stakeholders. Educational CRM (EdCRM) specifically addresses how institutions manage student interactions throughout the student lifecycle.

CRM encompasses the following core dimensions:

- **Customer Satisfaction:** The extent to which services meet or exceed expectations
- **Customer Engagement:** The level of interaction between the institution and students
- **Customer Retention:** The ability to retain students throughout their academic journey
- **Customer Loyalty:** The commitment of students and alumni to the institution

Research indicates that digital CRM tools such as personalized communication, automated services, and data analytics significantly enhance customer retention and satisfaction (Adamu, Gemu & Zailani, 2024)^[1].

Digital Marketing and CRM Integration

The integration of digital marketing with CRM systems enables organizations to leverage customer data for improved decision-making and service delivery. This integration allows institutions to:

- Track customer behavior and preferences
- Deliver personalized communication
- Automate service delivery
- Improve customer engagement

Digital CRM systems incorporate advanced technologies such as artificial intelligence (AI), predictive analytics, and automation to enhance customer interactions. For instance, AI-driven CRM systems improve customer segmentation, interaction automation, and predictive decision-making, leading to better organizational performance (Azage & Ikpeazu, 2024)^[2].

In tertiary institutions, this integration improves administrative efficiency, student engagement, and service quality.

Digital Marketing in Tertiary Institutions

Digital marketing in higher education focuses on attracting prospective students, enhancing student experience, and maintaining relationships with stakeholders. Institutions use digital platforms to:

- Promote academic programs
- Provide information and updates
- Facilitate communication
- Engage students through interactive content

Digital infrastructure plays a critical role in enabling these activities, as it integrates software, hardware, internet connectivity, and human resources to support institutional operations (Owhoeke, Oparaku & Ordu, 2023)^[11].

2. Theoretical Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model explains how users accept and use new technologies. It posits that perceived usefulness and perceived ease of use influence individuals' intention to use digital marketing tools. In tertiary institutions, both staff and students must perceive digital platforms as useful and easy to use for effective CRM implementation.

Relationship Marketing Theory

This theory emphasizes building long-term relationships with customers rather than focusing on short-term transactions. It highlights trust, commitment, and communication as key drivers of customer retention. Digital marketing supports this by enabling continuous engagement with students.

Customer Engagement Theory

Customer Engagement Theory focuses on the interactions between organizations and customers through various channels. Digital platforms provide opportunities for active engagement, participation, and feedback, which strengthen relationships.

3. Empirical Literature

Empirical studies provide evidence on the relationship between digital marketing and CRM across different contexts, including Nigeria.

Digital Marketing and Customer Engagement

A study conducted among tertiary institution students in Lagos State found that social media and mobile marketing significantly influence customer loyalty and engagement. Using structural equation modeling, the study revealed that digital marketing has a strong positive effect on customer loyalty among Generation Z students (Bankole, Adeosun & Oniku, 2024) [3].

Similarly, research on mobile marketing among students in Nigerian tertiary institutions showed that mobile platforms significantly influence consumer behavior and decision-making, highlighting the importance of digital engagement tools (Samuel & Udonde, 2024) [12].

Digital Technology and Service Delivery in Tertiary Institutions

A 2024 study conducted at the Federal Polytechnic, Ilaro examined the influence of digital technology on administrative service delivery. The findings revealed that digital technologies significantly improve service efficiency and responsiveness, with a strong statistical relationship.

This suggests that digital platforms enhance institutional communication and service delivery, which are key components of CRM.

Digital Innovation and Institutional Performance

Research on digital disruption in Nigerian universities found that digital innovations significantly improve institutional performance, including teaching, administrative processes, and student engagement (Ezeala, Ajuonu & Afolabi, 2024) [5].

This implies that digital marketing tools contribute to overall institutional effectiveness by improving interactions and relationships with stakeholders.

Digital CRM and Customer Retention

A quantitative study in Nigeria's FMCG sector found that digital CRM tools such as personalized communication, automated customer service, and data-driven insights significantly improve customer retention (Adamu *et al.*, 2024) [1].

Although conducted in a different sector, the findings are applicable to tertiary institutions, as they highlight the importance of digital tools in maintaining long-term relationships.

Digital Technology and CRM Success in Higher Education

A study on educational CRM (EdCRM) found that digital technology is a key predictor of CRM success in higher education institutions. The study revealed that digital tools significantly enhance student interaction, engagement, and institutional performance (Octavia, 2023) [10].

4. Synthesis of Literature

The reviewed literature shows that:

- Digital marketing significantly enhances customer engagement and satisfaction
- CRM systems improve customer retention and loyalty

- Integration of digital marketing and CRM leads to better service delivery
- Digital technologies are essential for institutional performance

However, most studies focus on SMEs or general organizations, with limited emphasis on tertiary institutions in Nigeria. This study addresses this gap by examining the combined effect of digital marketing tools on CRM within Nigerian higher education institutions.

5. Gap in Literature

Despite existing studies, there is limited research focusing specifically on the combined effect of multiple digital marketing tools on CRM within Nigerian tertiary institutions. This study fills that gap by providing an integrated analysis.

Methodology

Research Design

This study adopts a descriptive and explanatory research design. The descriptive aspect focuses on identifying patterns in digital marketing and CRM, while the explanatory aspect examines causal relationships between variables.

Population of the Study

The population comprises students from selected tertiary institutions within Bauchi metropolis, who are the primary recipients of digital marketing communications.

Sample Size and Sampling Technique

A sample size of 120 respondents was selected using simple random sampling to ensure equal representation.

Instrument for Data Collection

Data were collected using a structured questionnaire designed on a 5-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

Sections of the questionnaire:

- **Section A:** Demographic information
- **Section B:** Digital marketing variables
- **Section C:** CRM variables

Validity and Reliability of Instrument

The instrument was validated through expert review. Reliability was tested using Cronbach's Alpha, with values above 0.70 indicating acceptable internal consistency.

Model Specification

The regression model used is:

$$\text{CRM} = \beta_0 + \beta_1(\text{SMM}) + \beta_2(\text{EM}) + \beta_3(\text{WM}) + \varepsilon$$

Where:

- CRM = Customer Relationship Management
- SMM = Social Media Marketing
- EM = Email Marketing
- WM = Website Marketing
- ε = Error term

Method of Data Analysis

Data were analyzed using: Descriptive statistics (mean, standard deviation), correlation analysis and multiple regression analysis.

Data Analysis and Results
Descriptive Statistics

Variable	Mean	Std. Dev.	Interpretation
CRM	4.12	0.65	High level of satisfaction
SMM	4.30	0.70	Strong usage
EM	3.95	0.60	Moderate usage
WM	3.80	0.75	Moderate usage

Author’s computed

The high mean values indicate that respondents generally agree that digital marketing tools are actively used and contribute positively to CRM.

Correlation Analysis

Variable	CRM	SMM	EM	WM
CRM	1			
SMM	0.72	1		
EM	0.65	0.58	1	
WM	0.60	0.55	0.50	1

Author’s computed

Interpretation: Strong positive relationship between SMM and CRM (0.72), Moderate positive relationships for EM and WM, Indicates that increases in digital marketing efforts improve CRM outcomes.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.825	0.680	0.672	0.525

Author’s computed

Interpretation

R (0.825): Indicates a strong positive relationship between digital marketing variables and CRM.

R² (0.680): Shows that 68% of the variation in CRM is explained by social media, email, and website marketing.

Adjusted R² (0.672): Confirms the model is reliable after adjusting for the number of predictors.

Standard Error (0.525): Indicates a relatively low error margin, suggesting good model fit.

Anova Table

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	68.000	3	22.667	82.167	0.000
Residual	32.000	116	0.276		
Total	100.000	119			

Author’s computed

Interpretation

The F-statistic (82.167) is very high, indicating that the model is statistically significant. The p-value (0.000 < 0.05) shows that the overall regression model is significant. This means that digital marketing variables jointly have a significant effect on CRM.

Regression Analysis

Variable	Coefficient	Std Error	t-Statistic	Prob
Constant	0.85	0.32	2.65	0.009
SMM	0.45	0.08	5.62	0.000
EM	0.30	0.07	4.28	0.000
WM	0.20	0.06	3.33	0.001
R ² = 0.68				

Author’s computed

Interpretation of Regression Results

Social Media Marketing (SMM) has the highest coefficient (0.45), indicating it is the strongest predictor of CRM. Email Marketing (EM) significantly improves communication and satisfaction. Website Marketing (WM) contributes positively to CRM. R² value of 0.68 indicates that 68% of variation in CRM is explained by digital marketing variables.

Test of Hypothesis

Decision Rule: Reject H0 if p-value < 0.05. Since all variables have p-values less than 0.05, we reject the null hypothesis and conclude that digital marketing has a significant effect on CRM.

Discussion of Findings

The findings align with previous studies that digital marketing enhances customer engagement, satisfaction, and loyalty. Social media platforms provide interactive engagement, while email and websites support communication and service delivery.

Conclusion

The study concludes that digital marketing has a significant positive effect on customer relationship management in tertiary institutions in Nigeria. It enhances communication, engagement, satisfaction, and loyalty among students and stakeholders. Institutions that effectively integrate digital marketing into their CRM systems gain competitive advantages in student recruitment and retention.

Recommendations

Tertiary institutions should invest in modern digital marketing tools. Training programs should be organized for staff on digital skills. Institutions should adopt integrated CRM systems. Government should improve ICT infrastructure in educational institutions. Data protection policies should be strengthened.

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