Impact Factor: 4.44

INTERDISCIPLINARY JOURNAL OF MEDIA, COMMUNICATION, AND CULTURE
11(1) 2024 IJMCC

ISSN: 3067-2929

THE ROLE OF TECHNOWARE IN DRIVING CUSTOMER RETENTION IN SOUTH-SOUTH NIGERIA'S MANUFACTURING SECTOR

Dr. Samuel Ugochukwu Okafor
Department of Marketing, Faculty of Management Sciences, University of Uyo, Uyo Nigeria

Abstract: This study examined the effect of technoware deployment on customer retention of manufacturing firms in South-South, Nigeria. The study employed the simple random sampling technique. A sample size of 149 was determined from a population of 238 staff of the studied manufacturing firms in South- South, Nigeria using the Taro Yamane formula. The Ordinary Least Square regression analysis was used to test the effect of the relationship between the two variables. Result shows that the deployment of customer relation management software and cloud computing webapplication had significant effects on customer retention manufacturing firms in South- South, Nigeria. It was concluded that customer relation management software deployment and cloud computing web-application deployment have significant positive effects on customer retention of manufacturing firms in South-South, Nigeria. The researchers recommended among others that service organizations should provide customer relation management software training to all employees to be able to consistently utilize the system for maximum result.
Keywords: Technoware, Software, Management, Cloud, Computing, Retention

Introduction

Businesses are developing strategies to leverage customer retention technologies to enhance customer experience and prevent losing customers to competitors. Competition in today's business world is fierce, yet new startups are established on daily basis. Businesses are applying various strategies to get a competitive advantage over others in this fierce competition. No matter what strategy they apply, the core focus of all of these efforts will be to attract new customers and retain the current ones (Scott, 2011). Retaining existing customers seems to be more valuable than acquiring new ones. That's because retaining customers is cost-effective and provides greater profits. Hence, businesses in today's digital era are making various customer retention technologies a part of their strategies to retain more customers and generate more revenue (Micallef, 2022).

In a global and dynamic competitive environment, organizations are leveraging on technology to innovate, improve efficiency, effectively reduce cost, and deliver high quality goods and services to customers (Allen and Morton, 2014). Information and communication technology innovation is becoming more and more relevant, probably as a result of three major trends which include, intense international competition, fragmented and demanding markets and diverse and rapidly changing technologies (Galletta et al, 2018).

Technoware which is the focus of this study has its targeted effect on automation and retention of customers which consists of tools, equipment, machines, vehicles, and physical facilities, among others.The dimensions of Technoware used as proxies in this study are customer relationship management (CRM) software and cloud

computing assets. Technology has become an essential part of how customer retention is achieved. By using tools such as artificial intelligence (AI), online communication tools such as live chat, and data analytics, businesses can provide customers with more relevant and personalized experiences that keep them retained, loyal, engaged and satisfied (Shiraj, 2015). Thus, by offering customers online and mobile capabilities for browsing, purchases, payments, livechats, customer queries, and other business services, companies can now gather data and insights and gain critical intelligence on customer preferences and behaviours (Galletta et al, 2018).

Technology can streamline and reduce the amount of time it takes to onboard an employee. This allows the employee to quickly become productive and feel like they are making an impact sooner. Technology can also facilitate personalized learning experiences for long-time team members (Chandan, 2020). Customer relationship management (CRM) is a technology for managing a company's relationships and interactions with all of its potential customers. Cloud-based software refers to programs accessible via any internet-connected device like a computer, laptop, tablet, or mobile phone (Jain and Yadav, 2017). Customer Retention is concerned with upholding the relationship established between the organization and the customer which can help companies of all sizes drive business growth (Rabin, 2018).

Statement of the Problem

Technology which is perceived as an essential part on how customer retention is achieved and assist employees to quickly become productive has not been fully explored by researchers. The concept of technowares and customer retention has been studied by many, however there seems to be a discrepancy in empirical findings. For instance, the studies of Akhwani et al. (2020), found no positive relationship between information technology and customer retention while Pantano (2021), and Bakri, (2019) in their findings revealed that information technology deployment in Malaysia using technological change, IT knowledge management, and IT infrastructure positively affects a firm's business performance. It is based on the above gaps in literature that this study investigated the influence of Technoware deployment on customer retention by manufacturing firms in the South-South, Nigeria in order to enhance our knowledge and improve our understanding of the role of this important technoware variables.

Objectives of the Study

The main objective of this study is to examine the influence of technoware deployment on customer retention of manufacturing firms in the South-South, Nigeria. The specific objectives are to:

1. ascertain the effect of customer relation management software deployment on customer retention of manufacturing firms in the South-South, Nigeria**.**

2. examine the influence of cloud computing web-application deployment on customer retention of manufacturing firms in the South-South, Nigeria.

Research Question

1**.**What is the effect of customer relation management software deployment on customer retention of manufacturing firms in South-South, Nigeria?

2. What is the influence of cloud computing web-application deployment on customer retention of manufacturing firms in South-South, Nigeria?

Research Hypotheses

$H0_1$**:** Customer relation management software deployment has no significant effect on customer retention of manufacturing firms in South-South, Nigeria.

$H0_2$**:** Cloud computing web-application deployment has no significant influence on customer retention of manufacturing firms in South-South, Nigeria.

Review of Related Literature Conceptual Framework Information **Technology and Customer Retention**

Technology has become an essential part on how customer retention is achieved. By using tools such as artificial intelligence (AI), online communication tools such as livechats, and data analytics, businesses can provide customers with more relevant and personalized experiences that keep them retained, loyal, engaged, and satisfied. By offering customers online and mobile capabilities for browsing, purchases, payments, livechats, customer queries, and other business services, companies can gather data, insights and gain critical intelligence on customer preferences and behaviour (Anbumani, 2017).

The role of technology in customer retention is to provide businesses with the tools and data it needs to understand customers better, track customer journeys and preferences, and automate customer service processes that help create targeted marketing campaign, tailored to specific customer's needs. Technology can also make it easier for customers to interact with a business by offering multiple options and channels of communication. This allows customers to assess information, receive support and make the decisions they want at their own time without having to wait on hold for help or visit a physical location (Rabin, 2018). Technology can help businesses to better understand their customer's preferences and needs, and to tailor their products, services, and communications accordingly. This can help increase customer retention by keeping customers engaged and interested in a brand (Chandan, 2020). With the right technology software tools in place such as having a customer engagement platform, businesses can collect data on customer preferences, demographics, and behaviour which can be used to create personalized content, offers, and communications, thus building customer loyalty and retention by making customers feel valued and understood (Pantano, 2021).

Information technology act as an enhancer of collaboration and a networking tool amongst employees, customers and partners because it removes the barriers to real-time communication and effective information sharing (Obialor, 2020). IT helps organizations innovate through fusion of new technologies with society and business, thus, enabling the creation of new knowledge and discovery. Information technology is being used by organizations to improve performance, communication, motivate employees, increase competitiveness, improve market dynamics, repositioning the company against its competitors, and facilitating entry into new markets (Obialor, 2020).

Customer Relationship Management Software

Customer relationship management software is a technology for managing a company's relationships and interactions with all of its customers and potential customers. A customer relationship management solution helps a business to focus on their relationships with individual people, including customers, service users, colleagues, or suppliers throughout the supply chain, including finding new customers, winning their business, and providing support and additional services throughout the relationship (Micallef, 2022).

Customer relationship management software can help companies of all sizes drive business growth that can be especially beneficial to small businesses, where teams often need to find ways to do more with less (Jain and Yadav, 2017). A Customer relationship management software system can give companies a clear overview of their customers. With such deployment, organizational members can see everything in one place, in a simple, and customizable dashboard that can reflects everything about a customer's previous history with the firm, the status of their orders, any outstanding customer service issues, and more (Obialor et al, 2022). The Customer relationship management software tool organizes this information to give a firm a complete record of individuals and companies overall, so a firm can better understand its relationship over time (Anbumani, 2017).

Cloud Computing Technology

Cloud-based software refers to programs accessible via any internet-connected device like a computer, laptop, tablet, or mobile phone. Its examples include internet banking, G Suite (word processor, spreadsheet, email, file

storage), MYOB (accounting software), dropbox (file storage), canva (design and presentation tools and templates), sales-force (customer relationship manager), and zoom (video conferencing) (Nazanin et al, 2013 in Obialor, 2020). In recent years, cloudbased software has become the preferred method for many software companies to sell software as a service to business and personal customers (Bauer, 2018). Its benefits include ease to set up and use immediately, easy to access remotely, easy to share access with multiple staff members in the work environment and remotely, also easy to share documents and business records with your professional service providers (e.g. accounting, legal). Data needs to be accessed over the Internet, or at least needs to be synchronized with information over the Internet (Rabin, 2018). Cloud computing has 3 main elements cloud-based software, cloud-based infrastructure, cloud-based platforms (Buyya et al, 2010).

Customer Retention

It is the core and heart of the relationship marketing and is important to most of the companies because the cost of acquiring the new customers is more than the cost of retaining the existing one (Lindgreen et al, 2020). Customer retention is an effort made by companies to ensure that its customers do not switch over to competitors' products and services (Micallef, 2022). Scott (2011) defined customer retention as a strategic process of keeping existing customers and not letting them to defect to other organizations for business. Customer Retention is concerned with upholding the relationship established between the organization and the customer. Customer retention is important to a growing company as an indication of literally "withstanding the test of time" when it comes to addressing the needs of existing customers, and not just attracting new ones. When the cost of acquiring a new customer can cost five times as much as maintaining a relationship with an existing one, high retention rates are crucial to keeping your ROI in the green (Deloitte, 2019 in Pantano, 2021).

Customers who find their needs served and their loyalty rewarded are unsurprisingly more likely to leave positive testimonials and provide referrals. This means that customer retention also plays a significant role in a company's reputation.

Theoretical Review the Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the most successful measurements for computer usage effectively among practitioners and academics (Davis, 1989). Technology Acceptance Model is consistent with theory on diffusion of innovation where technology adoption is a function of a variety of factors including relative advantage and ease of use. Two particular beliefs are addressed through Technology Acceptance Model which include perceived usefulness and perceived ease of use. Perceived usefulness is the degree to which a person believes that the use of a system will improve performance. Perceived ease of use refers to the degree to which a person believes that the use of a system will be effortless.

The research theoretical framework to be applied in this study is based on the model of the organization (Leavitt, 1965). The model suggested that an organization consists of four interrelated components: structure, task (strategy), people, and technology. Organization's structure refers to systems of communication, systems of authority, and systems of workflow. Organization's strategy can be defined as the establishment of the basic long-term objectives of an enterprise, and the adoption and commitment of resources to a course of action intended to obtain these corporate objectives (Chandler, 1962 in Obialor, 2020). People are referred as the individuals working in the organization and Technology can be defined as the tools, techniques, and actions used to transform organizational inputs into outputs (Daft, 1995 in Obialor, 2020). Hence, if any of the four components changes, the other three must also change.

Empirical Review

Olanrewaju (2016) studied the effects of information technology on organizational performance in Nigerian Banking Industries. The study employed the field survey research approach. A sample of 100 respondents was

randomly selected. Chi square was the statistical analysis tool employed in testing the hypothesis. Findings revealed that technological innovation influenced banks employee's performance, customer's satisfaction and improvement in banks profitability.

Akhwani et al. (2020) investigated the impact of technology adoption on organizational productivity in Malaysia. The framework has three independent variables viz. technological change, information technology (IT) infrastructure, and IT knowledge management and the dependent variable as organizational productivity. The sample consisted of 300 IT managers and senior-level executives (production as well as service team) in leading IT companies in Malaysia selected using snowball sampling. The Structural Equation Model (SEM) and path analysis were conducted using AMOS 22. The research findings demonstrated that technological change and IT infrastructure positively and significantly impact the organization's productivity while IT knowledge management has significant but negative impact on organizational productivity of IT companies in Malaysia.

Abdullahi et al. (2019) investigated the impact of information communication technology on organizational productivity in the Nigeria banking industry. The descriptive survey research design was employed. The study targeted 140 respondents of First Bank Plc. Kano branch using the non-probability sampling technique. The Close-ended questionnaire (primary data) served as the major research instrument. Multiple regression statistical tool was used in analyzing the data. The result indicates that hardware component, software component and network have significant impact on organizational productivity in the Nigeria banking industry.

Shiraj (2015) examined the impact of using computerized accounting systems (CAS) in financial reporting among SMEs in Sri Lanka. The methodology espoused for the study was a case study research approach for which the data were gathered from respondents in South Eastern Region part of Sri Lanka. The study established that computerized accounting system had a great impact on quality of financial reports. The findings show a strong significant relationship between the variables ($r=0.741$, $p>0.000$) which implies that computerized accounting system has significant relationship with financial reporting among SMEs in South Eastern region of Sri Lanka.

3. Methodology

The researchers adopted the survey research design and used the Taro Yamane formula to determine the sample size of 149 from a population of 238 staff of the study manufacturing firms in South- South, Nigeria. The Ordinary Least Square regression analysis was used to test the effect of the relationship between the two variables. The regression model is shown below: $Y = b_0 + b_1 x + u_1$

The researchers distributed 149 copies of the questionnaire instrument to the respondents of the study manufacturing firms, which was completely filled and returned in usable form, thereby representing a 100% return rate.

Testing of Hypotheses

Hypothesis One: Customer relation management software deployment has no significant effect on customer retention of manufacturing firms in South-South, Nigeria.

Table .1: Regression analysis showing relationship between customer relation management software deployment and customer retention of manufacturing firms in South-South, Nigeria.

Model	R	R. Square	Adjusted R Square	Std Error of the Estimate
1	0.661[a]	0.430	0.303	0.90327

a. Predictors (Constant) Cust. Reltn Mgt Dep.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.474	1	12.474	16.288	000[R]
	Residual	101.171	124	0.816		
	Total	113.645	125			

b. Dependent variable Cust Retn.

b. Predictors: (Constant), Cust. Reltn Mgt Dep.

Coefficients[R]

Model	Unstandardized		Standardized	T	Sig.
	B	Std Error	Beta		
(Constant)	2.327	0.432		5.385	0.000
1. Cust. Reltn Mgt Dep.	0.499	0.102	0.331	3.910	0.000

a. Dependent Variable: Cust Retn.

The model summary in Table1 shows an R-value of 0.661. This suggests that Customer relation management software deployment has significant effect on customer retention of manufacturing firms in South-South, Nigeria. The R square-value of 0.430 shows that 43.0% variation in customer retention of manufacturing firms is explained by variations in Customer relation management software deployment. The ANOVA table indicates that the regression model significantly predicts the dependent variable given the F-value of 15.288 and its corresponding Rvalue of 0.000. This implies that Customer relation management software deployment has a significant effect on customer retention of manufacturing firms in South-South, Nigeria. Also, the B-coefficient of 0.499 implies that holding every other thing constant, the model predicts 49.9% unit increase in Customer relation management software deployment will lead to a unit increase in customer retention of the study manufacturing firms.

Hypothesis Two: Cloud computing web-application deployment has no significant influence on customer retention of manufacturing firms in South-South, Nigeria.

Table.2: Regression analysis showing relationship between cloud computing web-application deployment and customer retention of manufacturing firms in South-South, Nigeria.

Model	R	R. Square	Adjusted R Square	Std. Error of the Estimate
1	0.577[a]	0.333	0. 069	0.72283

b. Predictors (Constant)

a. Cld Comp Web-Ap Dep.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.365	1	5.365	10.288	000[R]
	Residual	64.788	124	0.522		
	Total	70.153	125			

a. Dependent variable: Cust Retn.

b. Predictors: (Constant) Cld Comp Web-Ap Dep.

Coefficients[R]

Model	Unstandardized	Standardized	T	Sig.

	B	Std Error	Beta		
(Constant)	3.089	0.346		8.932	.000
Cld Comp Web-Ap Dep.	0.362	0.082	0.277	3.204	.000

a. Dependent Variable: Cust Retn.

The model summary in Table 4.2 shows an R-value of 0.577. This suggests that Cloud computing web-application deployment has a strong influence on customer retention of manufacturing firms in South-South, Nigeria. The R square-value of 0.333 above shows that 33.3% variation in customer retention of manufacturing firms is explained by variations in cloud computing web-application deployment. The ANOVA table indicates that the regression model significantly predicts the dependent variable given the F-value of 10.268 and its corresponding Pvalue of 0.000. This implies that cloud computing web-application deployment has a significant influence on customer retention. Also, the B-coefficient of 0.362 implies that holding every other thing constant, the model predicts 36.2% unit increase in cloud computing web-application deployment will lead to a unit increase in customer retention.

4. Results and Discussion of Findings

From the findings and analysis above, the results are hereby discussed:

The first hypothesis which states that Customer relation management software deployment was tested and result revealed an R- value of 0.661 indicating a strong significant effect of customer relation management software deployment on customer retention of manufacturing firms in SouthSouth, Nigeria. The R- square-value of 0.430 representing a 43.0% variation in customer retention also explained the variation in customer relation management software deployment. The p-value of 0.000 is less than the significance level of 0.005%, thus lead to acceptance of the alternative hypothesis which states that customer relation management software deployment has a significant effect on customer retention of manufacturing firms in South-South, Nigeria.

The second hypothesis which states that cloud computing web-application deployment has no significant influence on customer retention was tested and result of the test shows that an Rvalue result of 0.577 which indicates a strong influence cloud computing web-application deployment has on customer retention of manufacturing firms in South-South, Nigeria. Similarly, an R square-value of 0.330 shows that 33.0% variation in customer retention of the study manufacturing firms was explained by variations in cloud computing web-application deployment. The P-value of 0.000 less than the 0.05 level of significance led to the rejection of the null hypothesis and thus conclude that cloud computing web-application deployment has a significant influence on customer retention of manufacturing firms in South-South, Nigeria.

5. Conclusion and Policy Recommendations

This paper organized in five sections include the introduction, literature review, data and methodology, results and discussions, conclusion and policy recommendations, and the references. To achieve this broad objectives, two hypotheses were formulated and tested, namely; i) Customer relation management software deployment has no significant effect on customer retention of manufacturing firms in South-South, Nigeria. ii) Cloud computing web-application has no significant influence on customer retention of manufacturing firms in South-South, Nigeria.

Result of the first hypothesis revealed an R- value of 0.661 indicating a strong significant effect of customer relation management software deployment on customer retention of manufacturing firms in South-South, Nigeria. The R- square-value of 0.430 representing a 43.0% variation in customer retention also explained the variation in customer relation management software deployment. The p-value of 0.000 is less than the significance level of

0.005%, thus lead to acceptance of the alternative hypothesis which states that customer relation management software deployment has a significant effect on customer retention of manufacturing firms in South-South, Nigeria.

The second hypothesis result which states that cloud computing web-application has no significant influence on customer retention of manufacturing firms in South-South, Nigeria shows that an R-value result of 0.577 indicates a strong influence cloud computing web-application deployment has on customer retention of manufacturing firms in South-South, Nigeria. Similarly, an R square-value of 0.330 shows that 33.0% variation in customer retention was explained by variations in cloud computing web-application deployment of manufacturing firms in SouthSouth, Nigeria. The P-value of 0.000 less than the 0.05 level of significance led to the rejection of the null hypothesis and thus conclude that Cloud computing web-application deployment has no significant influence on customer retention of manufacturing firms in South-South, Nigeria. Based on the findings of the study, the following recommendations were made:

i. Organizations should strive towards provision of basic IT infrastructures to pave way for automation of customer relation management (CRM) to ensure sustained customer retention.

ii. Manufacturing firms should continue to invest in cloud solutions IT infrastructure as this will assist them maximize applications that are cloud related in order leverage on its benefits via data security, cost reduction, and customer engagement.

The researchers conclude that customer relation management software deployment and cloud computing web-application deployment have significant positive effects on customer retention of manufacturing firms in South-South, Nigeria. It is believed that all things held constant, the result would be same in other environments.

References

Abdullahi. D, Shehu. E. & Usman. R. (2019). Computing and organizations: What we know and what we don't know. Communication of the ACM, 27(12), 1184-1192.

Akhwani. D, Dastane. A, Satar. & Johari. H. (2020). The Effect of Information Technology on Organizational Structure and Firm Performance: An Analysis of Consultant Engineers Firms (CEF) in Iran. *Procedia - Social and Behavioral Sciences Journal,* 81 (1), 644 – 649

Allen. T. & Morton. M. (2014). Information Technology and the Corporation of the 1990s. New York: Oxford University Press.

Anbumani. S. (2017). Digital Marketing and its Challenges. Airo International Journal. XII, ISSN:2320-3714.

Bakri. M. (2019). From Traditional to Digital Environment: An Analysis of the Evolution of Business Models and New Marketing Strategies. *Marketing Studies and Economic Systems Journal,* 4 (3), 225-240.

Buyya. D, Broberg. G, & Goscinski. E. (2010). Information technology and productivity: a review of the literature. *Journal of Advances in computers*, 43, 179-214

Chandan. K.M. (2020). Digital Marketing: Scope, Opportunities and Challenges. *Intech Open Journal,* 10 (1), 23-29.

Davis. S. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly* 13 (3): 319–340

Galletta. S, Celesti. H, & Villari. F. (2018). Technological Revolution and Productivity Decline: Computer Introduction in the Financial Industry. *Technological Forecasting and Social Change*, 31: 143-154.

Jain. E. & Yadav. A. (2017). Marketing and Technology: Role of Technology in Modern Marketing. Journal of Business and Management, 19 (5), 49-53.

Leavitt. H. J. (1965). Applied organizational change in industry: Structural, technological and humanistic approaches. In J.G March (Ed.), Handbook of Organizations. Chicago, IL: Rand McNally

Lindgreen. K, Davis. S, Brodie. G, & Buchanan-Oliver. E. (2020). Coping with information technology? How British executives perceive the key information systems management

issues in the mid-1990s. *Journal of Information Technology*, 9, 223-238

Micallef, B. (2022). The strategic use of information technology by nonprofit

organization: Increasing capacity and untapped potential. *Public Administration Review*,67(3),474487

Obialor. D.C, Agulanna. E.C, & Alugbuo. C.C (2022). Market Size Effects and Locational Decision of Selected Foreign Manufacturing Firms in South-West, Nigeria. Journal of Research in Business and Management, 10 (5), 68-79.

Obialor. D.C. (2020). Information Technology and Global Supply Chain Management. International Journal of Innovative Research and Development, 9 (8), 214-220.

Olanrewaju, B. (2016). Impact of digital transformation in measuring business performance of small & medium scale businesses in Nigeira. *International Journal of Economics, Business and Management Research*, 5(7), 1-25.

Pantano. E. (2021). Prelims. In Pantano. E. (Ed) Creativity and Marketing. The Fuel for Science. Emerald Publishing Ltd Binglsy.

Rabin. N. (2018). The Impact of Internet on the Distribution of Insurance Institutions Services. Journal of Administration and Economic Studies, 2 (4), 112-132.

Scott, W. (2011). How information gives you competitive advantage. *Harvard Business Review*, July-August, 63(4), 149-160

Shiraj, T. (2015). Factors affecting ICT diffusion: a case study of three large Australian construction contractors. *Engineering Construction and Architectural Management*, 12 (1), 21-37