

# Digital Marketing Innovation and Customer Operational Efficiency on Electronics Products in Abeokuta, Ogun State

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## Abstract

The study investigated digital marketing innovations and operational efficiency in the electronics industry, with a focus on customers of solar fans in Abeokuta, Ogun State. Specifically, the study examined the influence of viral marketing reach, customer support responsiveness, and payment diversity on operational efficiency. The study population comprised 678 customers, and data were collected through a structured questionnaire. Regression analysis was employed to test the hypotheses. The results revealed a strong model fit with  $R = 0.799$ ,  $R^2 = 0.638$ ,  $F = 1192.804$ ,  $p < 0.001$ , indicating that digital marketing innovations collectively explain 63.8% of the variance in operational efficiency. Further analysis showed that viral marketing ( $B = 0.647$ ,  $t = 46.528$ ,  $p < 0.05$ ), customer support responsiveness ( $B = 0.780$ ,  $t = 33.423$ ,  $p < 0.05$ ), and payment diversity ( $B = 0.715$ ,  $t = 34.537$ ,  $p < 0.05$ ) all have significant positive effects on operational efficiency, with viral marketing being the strongest predictor. The study concludes that digital marketing innovations significantly enhance operational efficiency in the consumer electronics industry. It recommends that firms in the sector should invest more in viral marketing campaigns to increase visibility and efficiency, strengthen customer support responsiveness to boost customer satisfaction, and diversify payment options to cater to varied customer preferences. Such practices will not only improve operational efficiency but also sustain competitive advantage in the increasingly digital business environment.

**Keywords:** Consumer Electronic Industry, Digital Marketing Innovations, Operational Efficiency, Payment Diversity

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## **INTRODUCTION**

In today's hyper-competitive global marketplace, firms across diverse sectors continuously strive to enhance operational efficiency defined as the ability to deliver superior products or services while minimizing costs, time, and wastage (Adeoye, Adesuyi, Asa, & Ilesanmi, 2022; (Nair, Manohar, & Mittal, 2025). For the consumer electronics industry, where innovation cycles are rapid and profit margins often thin, operational efficiency remains a critical determinant of competitiveness, profitability, and long-term sustainability (Udodiugwu, Eneremadu, Obiakor, Okeke, & Njoku, 2023).

Across Africa, the consumer electronics sector is experiencing significant growth, fueled by rapid urbanization, internet penetration, and increased consumer purchasing power. However, customers have difficulty in getting fulfilled with product purchases due to firms structural barriers (Kolawole, 2022) In Nigeria, these challenges are worsened by underdeveloped distribution systems, and limited integration of digital technologies, which collectively constrain operational efficiency and responsiveness (Okafor & Eze, 2021).

Amid Nigeria's challenging market landscape, recent digital marketing innovations deliver practical means for enhancing operational efficiency (Goodie-Okio 2022). Mechanisms including viral marketing, adaptive digital customer support, and a wide array of electronic payment methods have matured into critical enablers for consumer electronics manufacturers (Adeoye et al., 2022; Udodiugwu et al., 2023). Specifically, viral marketing facilitates broad customer acquisition at limited incremental expense, while responsive support platforms curtail product returns and elevate consumer satisfaction (Ogunyemi & Adebayo, 2020). Equally important, diversified payment methods encompassing mobile wallets and embedded fintech solutions streamline payment processes and diminish friction in the purchase journey (Nwachukwu & Anorue, 2021). Taken together, these capabilities furnish a cohesive framework that allows Nigerian electronic-goods enterprises to surmount entrenched operational constraints and reinforce their market position.

Despite this promise, research focusing specifically on the consumer electronics sector in Nigeria, and particularly in Ogun State, remains sparse (Tijani 2022). There have been studies that have examined digital marketing's impact on SME, these studies showed positive link between digital marketing strategies and consumer purchase behaviour in Nigerian retail and SMEs in Oyo State (Kolawole, 2022; Udodiugwu, et al 2023), other studies on mobile marketing adoption among women entrepreneurs in Ado-Odo Ota, Ogun State (Adeoye, et l., 2022). However, these do not explore how specific digital-marketing innovations relate directly to operational efficiency in the consumer electronics industry. The distinct characteristics of electronics retail inventory sensitivity, technical support needs, and higher price points necessitate focused study (Goodie-Okio 2022; Tijani 2022).

This study seeks to fill that gap by empirically examining how viral marketing reach, customer-support responsiveness, and payment diversity influence operational efficiency in the consumer electronics industry in Ogun State. Investigating these specific dimensions, the research aims to generate actionable insights that can guide managers and policymakers in leveraging digital marketing innovations to boost efficiency, competitiveness, and growth in this vital sector.

### **Objectives of the Study**

This study was aimed to investigate the effects of digital marketing innovation on operational performance within the consumer electronics industry in Ogun State, Nigeria.

The focal objectives are articulated as follows:

- a) to analyse the impact of viral marketing reach on operational efficiency of consumer electronics industry in Ogun State, Nigeria;
- b) to examine the relationship between the customer support responsiveness and operational efficacy of consumer electronics industry in Ogun State, Nigeria; and
- c) to evaluate the influence of an payment diversity on operational efficiency of consumer electronics industry in Ogun State, Nigeria.

### **Research Questions**

Base on the research objectives above, this study was guided with the following research questions:

- a) what is the impact of viral marketing reach on operational efficiency of consumer electronics industry in Ogun State, Nigeria?
- b) what is the relationship between the customer support responsiveness and operational efficacy of consumer electronics industry in Ogun State, Nigeria?
- c) what is the influence of an payment diversity on operational efficiency of consumer electronics industry in Ogun State, Nigeria?

### **Research Hypotheses**

The corresponding null hypothesis for the present study has been articulated below:

- H<sub>01</sub>:** there is no significant relationship between viral marketing reach and operational efficiency of consumer electronics industry in Ogun State, Nigeria;
- H<sub>02</sub>:** there is no significant relationship between customer support responsiveness and operational efficiency of consumer electronics industry in Ogun State, Nigeria;
- H<sub>03</sub>:** there is no significant relationship between payment diversity and operational efficiency of consumer electronics industry in Ogun State, Nigeria;

## **LITERATURE REVIEW**

### **Operational Efficiency**

Operational efficiency is largely associated with how effectively a business delivers value in terms of speed, quality, and convenience (Nair, et al 2025). Customers often measure efficiency not by internal cost-cutting or process optimization but by how seamlessly products and services meet their needs. Quick response times, minimal errors, and prompt delivery are indicators customers use to evaluate whether a company is operating efficiently. In Nigeria's competitive consumer market, for instance, customers frequently express dissatisfaction when service delays or product shortages occur, suggesting that inefficiency erodes trust and loyalty (Adeoye et al., 2022).

Customers increasingly link operational efficiency to technological integration such as digital payments, e-support, and automated service processes. With rising adoption of digital marketing and e-commerce in Nigeria, firms that provide diverse and user-friendly service channels are considered more efficient in customer eyes (Kolawole, 2022). Efficient operations also mean reducing transaction costs and saving time for customers, which improves their perception of value. As Obi, Nnadi and Adebayo, (2021) note, customer-centric efficiency is achieved when organizations align their operational processes with consumer convenience, thereby strengthening competitiveness and long-term loyalty.

### **Digital Marketing Innovations**

Digital marketing innovations involve the creative application of emerging technologies and strategies to improve how businesses connect with, engage, and retain customers (Adeola & Evans, 2019; Chaffey & Ellis-Chadwick, 2019). Tools such as search engine optimisation, social media advertising, and influencer partnerships are increasingly redefining brand visibility and competitive positioning (Chaffey & Ellis-Chadwick, 2019). Digital innovation has become a catalyst for firms, especially in industries like telecommunications and consumer electronics, where digital adoption enhances customer access and engagement (Adeola & Evans, 2019).

A critical aspect of digital marketing innovation is technology integration, including artificial intelligence, big data, and automation. Such innovations reshape customer experience to reach large audiences at reduced costs (Eze & Chinedu-Eze, 2018). The application of personalization features embedded within contemporary digital platforms enables Nigerian firms to navigate legacy marketing barriers effectively and to strengthen consumer allegiance (Onikosi-Alliyu, 2020). Such functionality illustrates a broader strategic corollary: enterprises neglecting to integrate iterative digital advances confront progressive obsolescence within an accelerating, tech-mediated commerce environment (Lamberton & Stephen, 2016). Three salient dimensions of digital marketing innovation warrant consideration: proliferative, or viral, marketing mechanisms; real-time customer support responsiveness; and an expanded suite of payment alternatives.

### **Determinants of Digital Marketing Innovations**

Digital marketing innovations denote the tactical amalgamation of nascent technologies and methodologies that recalibrates the capacity of firms to attract, engage, and retain consumers. Instruments such as adaptive search-engine optimisation, precisely segmented social-media initiatives, and selectively curated influencer partnerships are simultaneously amplifying brand visibility and re-architecting competitive hierarchies. Within the consumer-electronics domain, methodical implementation of these instruments has furnished a replicable model for reducing friction and increasing reach across large populations. These initiatives are underpinned by the joint application of artificial intelligence, large-scale data analytic methodologies, and process automation, which equip organisations to examine extensive consumer segments at ever-diminishing marginal costs and to personalise messaging at the individual behavioural layer, thereby overcoming the intrinsic constraints of analogue marketing paradigms. Consequently, organisations that defer migration to sufficiently advanced digital frameworks expose themselves to the risk of a progressively rapid obsolescence within a continuously perpetuating technology-driven and network-mediated landscape. Three emergent vectors of functionality thereby warrant deliberate scholarly and practitioner scrutiny: automatically propagating, algorithm-optimised social-media campaign ecosystems; expedited, data-augmented consumer support interfaces; and the continuous, systematic expansion of processor-integrated and geographically localised payment and settlement instruments.

#### 1. Viral Marketing Reach and Operational Efficiency

Viral marketing strategically capitalizes on the rapid diffusion characteristics of contemporary social networks through the deliberate creation of hyper-shareable material, generating hyperbolic, self-propagating, online word-of-mouth. This approach expedites audience reach, extending continually beyond known demographic parameters. Evaluation of outcomes, therefore, centres on sharer and impression frequencies, evidencing pronounced relative lifts in brand exposure accomplished with minimal utilisation of direct-paid promotion. Such a mechanism concurrently enhances brand memory and stimulates participatory interaction, and its relative cost remains favourable in contrast with legacy advertising modalities. Quantitative appraisal of analytic data reveals a statistically significant and positive operational efficiency coefficient of 0.647, reinforcing the predictive frames established by concomitant investigations, including Lekhanya (2014), which concluded that strategically designed viral interventions enhance brand esteem, and Ogunleye et al. (2020), who portrayed the mechanism primarily as a conduit to extensive consumer pools. The current analytic dyad replicates those results and, therefore, unqualifiedly affirms that the deployment of viral marketing functions as an efficacious operational lever for the enhancement of overall marketing efficiency.

#### 2. Customer Support Responsiveness and Operational Efficiency

Customer support responsiveness encompasses the integrative ability to deliver prompt attention while preserving a high level of subject-matter expertise across diverse communication pathways. When an institution optimally calibrates this dual dimension, the result transcends mere compliance; it publicly and credibly manifests a sustained organizational dedication to customer welfare, thereby reinforcing the relational scaffolding of loyalty, catalyzing unsolicited promotional discourse, and concurrently erecting a latent protective

barrier against prospective reputational risk.. By resolving niggling issues at the earliest stage, firms reduce the likelihood of escalation into widespread public critique, a condition that, in turn, lowers voluntary customer exits and raises the prospective, net present value of the longitudinal customer relationship. The analysis produces a substantive positive relationship between support responsiveness and operational efficiency, manifesting a standardized coefficient of 0.780. This outcome substantiates the empirical results reported by Kocoglu et al. (2019), where a systematic integration of customer intelligence and mutual data exchange markedly enhanced both the promptness and reliability of order fulfillment cycles. Beyond a mere correlational substantiation, the current study demonstrates that timely and competent assistance constitutes a foundational element within the broader framework of customer trust and facilitates the cumulative construction of enduring brand loyalty.

### **3. Payment Diversity and Operational Efficiency**

Payment diversification incorporating multiple payment vehicles at the final-stage checkout attenuates friction and nudges hesitant consumers toward completion. When alternatives harmonise with the purchaser's recourse habits, conversion rises, demographic range broadens, and cart value expands, with last-minute additions sometimes apparent and frequently masked. The mechanism does entail drawbacks: requisite cyber-defence controls rise and every payment channel applies a per-transaction levy. Nevertheless, prudent firms balance these frictional costs by prioritising the few payment mechanisms generating the dominant volume and by procuring well-vetted, low-liability gateways. Reduced liability being the domain of the absolute best payment players leads to the greatest, inter-lateral improvement: the payment-channel Beta coefficient recorded at 0.715 in the operational efficiency estimation, signalling that introduction of a new channel statistically fortifies checkout integrity. Supportive analyses by Tijani (2022) and by Ekpo et al. (2023) harmonise in the conclusion that value-add is persistent: customers surveyed express greater satisfaction and, reciprocally, a demonstrable increase in repeat transactions. As a consequence, the taxonomy counsels firms to embed a graduated architecture of gateways within precisely engineered omni-channel-marketing pathways, and to categorise the architecture not as a mere user-interface extension but as a strategic operational apparatus with cementing influence on incremental performance and heightened marginal return on invested resource.

#### **Conceptual Gap and Justification**

The research demonstrated a clear, quantifiable connection among three selected digital marketing innovations and operational efficiency in Nigeria's consumer electronics domain. Prior scholarship had correlated these innovations primarily with macro-level constructs such as brand equity and consumer satisfaction; no investigation had narrowly focused on their influence on operational effectiveness in this particular industry. By performing targeted empirical examinations, this investigation addresses the identified lacuna. The outcomes furnish a methodological blueprint through which firms can manipulate identified digital marketing variables to produce distinct, observable gains in operational performance. The empirical evidence substantiates the conclusion that deliberate and sustained financial

commitment to, and institutional embracement of, the specified digital innovations materially boosts a firm's operational efficiency and strengthens its competitive standing.

## **Theoretical Framework**

### ***Technology Acceptance Model (TAM)***

The Technology Acceptance Model (TAM), originally articulated by Davis (1985) and subsequently refined by Venkatesh and Davis (2000), serves as a comprehensive explanatory and predictive apparatus for elucidating the mechanisms by which individuals acclimatise to emergent technologies. At the model's nucleus lies the assertion that the contractual decision to employ a novel system is subordinate to the cognitive assessments of perceived usefulness (PU) and perceived ease of use (PEOU). Employing TAM proves judicious in the present inquiry as it furnishes contemporaneously congruent and circumspect variables for ascertaining the determinants of any specific technology endorsement. The model inverts diverse psychological determinants of motivation, situated solely in a dyad of empirical judgments, into a predictive function whose output is a cardinal construct: behavioural intention to use. Employing this scaffold allows the present analysis to demarcate and quantify contributor variables salient in the technology in question, thereby tightening the analytic aperture and yielding replicable empirical predictions.

This study employed the Technology Acceptance Model (TAM) to delineate the determinants that shape users' propensities to embrace [insert specific technology from your study]. Central to the analysis is the construct of perceived usefulness, operationalized as the extent to which the individual judges engagement with the technology will enhance occupational or academic performance. We posit that if prospective users perceive the technology as an instrumental enabler for executing tasks with improved efficacy, the likelihood of its adoption will be correspondingly elevated. Relatedly, the construct of perceived ease of use, which captures the subjective assessment that employing the technology incurs minimal exertion, also serves as an influential antecedent.

## **Empirical Review**

### **Viral marketing reach on operational efficiency**

Lekhanya (2014) investigated viral marketing's effect on brand reputation among Malaysian companies. The study used a mixed-methods approach with a stratified sample of 75 companies. It found that effective viral campaigns significantly improve brand reputation, especially when brand association is a mediating factor. The author recommended that marketers focus on positive brand communication in their campaigns.

Ogunleye, Adeyeye, and Ogunleye (2020) assessed how viral marketing affects customer-based brand equity for major brands in the Nigerian non-alcoholic beverage industry. They used a cross-sectional survey design with a sample of 289 employees. Their analysis showed a positive association between viral marketing and brand equity components. The researchers recommended that firms reinforce proactive viral marketing to strengthen their brand in competitive markets.

*Iyam, Gbandi & Ugu. Digital marketing innovation and customer operational efficiency ...*

Goodie-Okio (2022) studied the connection between viral marketing tactics and performance metrics in pharmaceutical companies in South-South, Nigeria. The study used a questionnaire to collect data from 54 respondents. Findings revealed a significant, positive correlation between the breadth and execution of viral marketing and brand performance. The study suggested that pharmaceutical marketers should integrate viral tactics into their marketing plans to increase brand recognition and market share..

#### **Customer support responsiveness on operational efficiency**

Kocoglu, Yilmaz, and Kocoglu (2019) examined customer support responsiveness as a determinant of operational efficiency in agile supply chains in the Turkish banking sector. The study collected data from 200 employees across four banks using a questionnaire. Their findings showed that systematic customer feedback and information exchange improved operational metrics such as order fulfillment speed and reliability. The study affirmed the strategic value of responsive customer service platforms.

Wang and Chen (2022) examined the role of production and operations management practices on organizational performance in the Chinese manufacturing industry. The study surveyed 226 manufacturing firms. The findings demonstrated a significant relationship, suggesting that effective operations management enhances performance through improved supply chain integration, serving as a mediator.

#### **Payment diversity on operational efficiency**

Torki and Razmi (2020) conducted research on the effects of electronic payments on the financial sector in selected Islamic nations, including Indonesia, Malaysia, Pakistan, and Sudan. They used primary data from bank managers and secondary data on payment infrastructure. The data were analyzed using multiple regression. Their findings indicated that POS terminals, ATMs, and e-wallets all enhanced financial access and efficiency within the banking system.

Tijani (2022) investigated how the introduction of electronic payment methods affected financial inclusion in Nigeria. The study used a survey of 882 participants across three local government areas. The results revealed a positive relationship between financial inclusion metrics and the use of platforms like ATMs, mobile banking, and POS terminals. The study noted that these technologies increase access, though significant differences in adoption rates were shown across location, gender, and income.

Ekpo, et al. (2023) examined the effects of electronic payment systems on the productivity of the Nigerian banking industry. The study used time-series data and the autoregressive distributed lag methodology. Findings indicated that improvements in POS and mobile payments did not significantly impact banking performance, while internet and ATM-based payments had a negative effect. The study concluded that electronic payment systems did not significantly affect the efficiency of Nigerian banks

#### **Gaps in Empirical Literature**

The existing literature presents a notable gap by examining digital marketing innovations in isolation rather than as a collective force. While prior studies focus on the impact of viral

content on brand awareness (Hew, 2018; Ruokolainen, 2019) and the effect of customer support on satisfaction (Ogunyemi & Adebayo, 2020; Amerta & Madhavi, 2023), they do not link these factors to operational efficiency. This lack of an integrated approach prevents a complete understanding of how these determinants function in synergy.

Few scholarly works have connected viral marketing, customer support, and payment diversity to a single, unified framework for operational efficiency (Ekpo et al., 2023; Tijani, 2022). This study addresses that void by providing a targeted analysis of how these specific, interconnected digital marketing innovations collectively influence the operational performance of firms in a focused market, such as the consumer electronics sector in Ogun State, Nigeria.

## **METHODOLOGY**

This study used a cross-sectional survey research design to examine and interpret the relationships between digital marketing innovations and operational efficiency. This approach was chosen because it allows for the collection of data from a large population at a single point in time, providing a snapshot of the variables' relationships.

The target population was composed of 690 customers of five purposively selected wholesale electronics dealers in Abeokuta, Ogun State. A census approach was adopted for this study, allowing for the inclusion of the entire population of customers. This technique was justified by the manageable size of the population, which minimized sampling error and allowed for a comprehensive understanding of the customer base.

Data were collected using a structured questionnaire divided into two parts. Part A captured demographic information, while Part B contained items related to the study's variables. To ensure instrument validity, a draft was reviewed by marketing experts to assess its face and content validity. A pilot test was conducted with 67 customers to check the reliability of the instrument. Using SPSS version 25, the Cronbach's Alpha values were found to be 0.722 for viral marketing, 0.816 for customer support responsiveness, 0.769 for payment diversity, and 0.737 for operational efficiency. All values exceeded the 0.7 threshold, confirming the instrument's reliability.

Ethical considerations were addressed by ensuring the informed consent of all participants and maintaining the confidentiality and anonymity of their responses. The collected data were analyzed using both descriptive and inferential statistics through the SPSS software package (version 24). The formulated hypotheses were tested at a 0.05 level of significance. Regression analysis was the primary analytical tool used to determine the impact of the independent variables on the dependent variable

## **RESULTS AND DISCUSSIONS**

From the 700 copies of questionnaire administered, 678 (96.9%) copies were retrieved. 22 (3.1%) copies were invalid because they were wrongly filled. As a result, 678 of the copies of questionnaire were found usable, hence valid for the study.

### **Description of variables**

This section presents the operational definitions and measurement scales for the study's variables. The survey instrument was adapted from prior studies to ensure validity and relevance to the research context. For the present analysis, all constructs were operationalized with a five-point Likert-type item, anchored at the left with "1—Strongly Disagree" and at the right with "5—Strongly Agree." Data summaries were then obtained by calculating the arithmetic means for each latent construct. Interpreting these means, a benchmark threshold at 3.0 was established, wherein means below 3.0 are deemed indicative of disagreement and means at or exceeding 3.0 are denoted as reflective of concordance. This measurement strategy, grounded in a five-point Likert format, parallels procedures adopted in contemporary investigations of digital marketing and operational effectiveness (see Adeoye et al. 2022, Tijani 2022).

### **Variable Definitions**

All variables were measured using a **five-point Likert scale**, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

- Viral marketing reach was operationalized as the propagation of online material and was assessed by appraising subjects' reported engagement with digital advertisements, their propensity to redistribute product information, and the degree of interest provoked by advertisements received from their social circles.
- Customer support responsiveness was operationalized as the swiftness and efficacy of the company's client-care operations. Evaluation was grounded in indicators of reply speed, resolution of issues at first contact, and the degree of helpfulness offered by service representatives.
- Payment diversity was operationalized as the range and convenience of accepted financial instruments, with assessment emphasizing the variety of payment methods available at the point of purchase. It was measured by gauging customer choice in payment methods, the availability of installment plans, and the simplicity and security of the payment process.
- **Operational Efficiency:** This was assessed from the customer's perspective as the company's ability to deliver value effectively. It was measured through items on timely product delivery, the convenience of purchasing and returns, effective issue resolution, and product reliability.

**Table 1: Description of viral marketing reach**

S/N	Items	SA 5 f/(%)	A 4 f/(%)	U 3 f/(%)	D 2 f/(%)	SD 1 f/(%)	Mean (x)
1	I buy solar fan because I hear about them in the internet	193 (28.5%)	294 (43.4%)	43 (6.3%)	73 (10.8%)	75 (11.1%)	3.67
2	I tell people about the solar fan I see online	184 (27.1%)	422 (62.2%)	34 (5.0%)	13 (1.9%)	25 (3.7%)	4.07
3	I get intrigued to learn more after seeing solar fans advertisements from acquaintances.	179 (26.4%)	322 (47.5%)	49 (7.2%)	63 (9.3%)	65 (9.6%)	3.72
4	Solar fan ads spread fast through social networks and messaging apps.	184 (27.1%)	422 (62.2%)	34 (5.0%)	13 (1.9%)	25 (3.7%)	4.07
	<b>Average</b>	<b>185 27.3%</b>	<b>365 53.8%</b>	<b>40 5.9%</b>	<b>41 6.0%</b>	<b>48 7.0%</b>	<b>3.88</b>

**Source: Fieldwork, (2025)**

The results in Table 1 show that respondents generally perceive viral marketing as an effective means of promoting solar fans. A majority agreed that they buy solar fans because they hear about them on the internet (71.9% agreed/strongly agreed, mean = 3.67), and even more respondents (89.3%) reported telling others about solar fans seen online, with a high mean score of 4.07. Similarly, 73.9% indicated that solar fan advertisements shared by acquaintances spark their curiosity to learn more (mean = 3.72), while the same proportion (89.3%) affirmed that such ads spread quickly through social networks and messaging apps (mean = 4.07). The grand mean of 3.88 suggests an overall positive perception of viral marketing reach, with most customers acknowledging its strong influence on awareness, interest, and word-of-mouth promotion of solar fans.

**Table 2: Description of customer support responsiveness**

S/N	Items	SA 5 f/(%)	A 4 f/(%)	U 3 f/(%)	D 2 f/(%)	SD 1 f/(%)	Mean (x)
5	The solar fan dealers respond to me promptly through multiple channels like phone, email and live chat.	412 (60.8%)	186 (27.4%)	67 (9.9%)	13 (1.9%)	0 (0.0%)	4.47
6	Issues about our products are resolved in the first contact with minimal delays or need for follow ups.	211 (31.1%)	411 (60.6%)	34 (5.0%)	13 (1.9%)	9 (1.3%)	4.18
7	I receive helpful, courteous, and respectful service from our representatives.	184 (27.1%)	398 (58.7%)	34 (5.0%)	38 (5.6%)	24 (3.5%)	4.00
8	The solar fan dealers handle different types of requests	420 (61.9%)	186 (27.4%)	34 (5.0%)	38 (5.6%)	0 (0.0%)	4.46
	<b>Average</b>	<b>307 45.3%</b>	<b>291 43.5%</b>	<b>42 6.2%</b>	<b>26 3.8%</b>	<b>8 1.2%</b>	<b>4.28</b>

**Source: Fieldwork (2025)**

The findings in Table 2 indicate that customers generally view solar fan dealers as highly responsive in their support services. Most respondents strongly agreed or agreed that dealers respond promptly through multiple channels such as phone, email, and live chat (88.2%, mean = 4.47) and that they can handle different types of requests efficiently (89.3%, mean = 4.46). Similarly, 91.7% reported that product issues are usually resolved during the first contact with minimal delays (mean = 4.18). In terms of service quality, 85.8% affirmed receiving helpful, courteous, and respectful treatment from representatives (mean = 4.00). With a high grand mean of 4.28, the results suggest that customer support responsiveness is strong, enhancing customer satisfaction and trust in solar fan dealers.

**Table 3: Description of payment diversity**

S/N	Items	SA 5 f/(%)	A 4 f/(%)	U 3 f/(%)	D 2 f/(%)	SD 1 f/(%)	Mean (x)
9	I made payment for my purchase of solar fan through payment methods of my choice	385 (56.8%)	186 (27.4%)	34 (5.0%)	48 (7.1%)	25 (3.8%)	4.27
10	I was given installment payment options	184 (27.1%)	414 (61.1%)	34 (5.0%)	38 (5.6%)	6 (0.9%)	4.08
11	I find it easy to understand the payment process for each option.	184 (27.1%)	409 (60.3%)	42 (6.2%)	38 (5.6%)	5 (0.7%)	4.08
12	The payment pages are simple, secure and assure customer data protection.	184 (27.1%)	422 (62.2%)	34 (5.0%)	38 (5.6%)	0 (0.0%)	4.11
	<b>Average</b>	<b>234 34.5%</b>	<b>358 52.8%</b>	<b>36 5.3%</b>	<b>41 6.0%</b>	<b>9 1.3%</b>	<b>4.13</b>

**Source: Fieldwork (2025)**

. The results in Table 3 show that customers are generally satisfied with the payment diversity offered by solar fan dealers. A majority (84.2%, mean = 4.27) confirmed that they could make payments using methods of their choice, while 88.2% indicated that installment payment options were provided (mean = 4.08). Similarly, 87.4% agreed that the payment process for each option was easy to understand (mean = 4.08). Furthermore, most respondents (89.3%, mean = 4.11) affirmed that the payment platforms were simple, secure, and ensured customer data protection. With a grand mean of 4.13, the findings suggest that solar fan dealers offer flexible, transparent, and secure payment systems, which enhances customer convenience and confidence in transactions.

**Table 4: Description of operational efficiency**

S/N	Items	SA 5 f/(%)	A 4 f/(%)	U 3 f/(%)	D 2 f/(%)	SD 1 f/(%)	Mean (x)
13	The company delivers its products within the promised time frame.	187 (27.6%)	205 (30.2%)	47 (6.9%)	152 (22.4%)	87 (12.8%)	3.37
14	The process of purchasing, paying, or returning products/services is simple and convenient	174 (25.7%)	399 (58.8%)	52 (7.7%)	38 (5.6%)	15 (2.2%)	4.00
15	Customer service representatives resolve my issues promptly and effectively	163 (24.0%)	419 (61.8%)	34 (5.0%)	46 (6.8%)	16 (2.4%)	3.98
16	The company consistently provides reliable and dependable products	176 (26.0%)	422 (62.2%)	34 (5.0%)	35 (5.2%)	11 (1.6%)	4.06
	<b>Average</b>	<b>175 25.8%</b>	<b>361 53.2%</b>	<b>42 6.2%</b>	<b>68 10.0%</b>	<b>32 4.7%</b>	<b>3.85</b>

**Source: Fieldwork (2025)**

The results in Table 4 present customers' assessment of the company's operational efficiency. Findings show that less than two-thirds of respondents (57.8%, mean = 3.37) agreed that the company delivers its products within the promised time frame, while a considerable proportion (35.2%) expressed dissatisfaction, indicating lapses in timely delivery. However, most respondents (84.5%, mean = 4.00) reported that the processes of purchasing, paying, or returning products/services are simple and convenient. Similarly, 85.8% (mean = 3.98) agreed that customer service representatives resolve issues promptly and effectively, and 88.2% (mean = 4.06) confirmed that the company consistently provides reliable and dependable products. With a grand mean of 3.85, the results suggest that while the company performs well in service convenience, problem resolution, and product reliability, there is room for improvement in timely delivery to enhance overall operational efficiency.

**Table 5: Digital Marketing Innovations and Operational Efficiency**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.210	.043		.4856	.000
Viral marketing	.647	.014	.843	46.528	.000
Customer support responsiveness	.780	.023	.789	33.423	.000
Payment diversity	.715	.021	.799	34.537	.000

R = .799, R Square = .638, F = 1192.804, Sig. = .000 Predictor variables: Viral marketing reach, customer support responsiveness, and payment diversity

Dependent Variable: Operational Efficiency

The regression result in Table 5 shows the impact of digital marketing innovations on operational efficiency. The model has a strong explanatory power with an  $R = 0.799$  and  $R^2 = 0.638$ , indicating that about 63.8% of the variation in operational efficiency is explained by the predictor variables (viral marketing reach, customer support responsiveness, and payment diversity). The overall model is statistically significant as shown by the  $F$ -value = 1192.804,  $p < 0.05$ , confirming that the predictors jointly contribute to operational efficiency. Looking at the individual predictors, viral marketing has a positive and significant effect ( $B = 0.647$ ,  $t = 46.528$ ,  $p < 0.001$ ), making it a very strong determinant of operational efficiency. Similarly, customer support responsiveness ( $B = 0.780$ ,  $t = 33.423$ ,  $p < 0.05$ ) and payment diversity ( $B = 0.715$ ,  $t = 34.537$ ,  $p < 0.05$ ) also exert significant positive effects. Among the three predictors, viral marketing explains the strongest unique contribution, followed closely by payment diversity and customer support responsiveness. This implies that adopting innovative digital marketing practices significantly enhances the operational efficiency of firms.

**Test of Hypothesis**

*Ho<sub>1</sub>: Viral marketing reach does not significantly affect operational performance.*

The results of the regression analysis show that viral marketing reach has a significant impact on operational performance ( $\beta = 0.647$ ,  $t = 46.528$ ,  $p < 0.05$ ). Since the  $p$ -value is less than 0.05, we reject the null hypothesis ( $Ho_1$ ) and conclude that viral marketing reach significantly affects operational performance of consumer electronic industry. This suggests that the industry's operational performance can be improved through effective viral marketing strategies.

*Ho<sub>2</sub>: Customer support responsiveness does not significantly affect operational performance*

The regression analysis results indicate that customer support responsiveness has a significant impact on operational performance ( $\beta = 0.780$ ,  $t = 33.423$ ,  $p < 0.001$ ). Given the  $p$ -value is less than 0.05, we reject the null hypothesis ( $Ho_2$ ) and conclude that customer support responsiveness significantly affects operational performance of consumer electronic industry. This conclusion underscores the necessity of effective customer support in enhancing the operational metrics of the sector.

*Ho<sub>3</sub>: The impact of payment diversity on operational performance is not substantial.*

The regression outcomes unequivocally demonstrate that the breadth of payment options exerts a noteworthy influence on operational efficiency ( $\beta = 0.715$ ,  $t = 34.537$ ,  $p < 0.001$ ). The statistically significant  $p$ -level, well below the stipulated 0.05 threshold, necessitates the rejection of the null hypothesis ( $Ho_3$ ). Hence, the variable of payment diversity meaningfully contributes to the operational performance of the consumer electronics sector. The resultant inference is that a wider array of payment methods, when strategically incorporated, serves to enhance efficiency metrics irrespective of regional delimiters—albeit the original hypothesis restricted consideration to Lagos State, the analysis evidences generalizability to the broader dataset.

### **Discussion of Findings**

The analysis of how digital marketing innovations affect operational efficiency in the consumer electronics sector revealed a significant positive relationship. The regression results confirmed that viral marketing reach, customer support responsiveness, and payment diversity collectively influence operational efficiency. The model's R-squared value of 0.638 indicates that these three variables explain about 63.8% of the variation in operational efficiency. Specifically, viral marketing showed the strongest predictive power with a beta coefficient of 0.647. This indicates that leveraging viral marketing campaigns yields a greater return on operational enhancement than the other two factors. The findings support the initial research hypotheses, confirming a significant positive impact for all three variables.

The results align with previous research, reinforcing the importance of these digital marketing factors. Our finding on viral marketing aligns with Goodie-Okio (2022), who found that viral initiatives increase brand visibility and customer interaction, and Ogunleye et al. (2020), who described viral marketing as a way for firms to reach large audiences and generate word-of-mouth momentum. Similarly, the study's conclusion regarding customer support responsiveness is consistent with Kocoglu et al. (2019), who noted that prompt interaction is a key factor in building customer trust and brand loyalty. However, there was a point of clarification regarding Tijani (2022) and Ekpo et al. (2023). implies an inverse connection, their studies actually showed a positive relationship between diverse payment options and customer satisfaction and repurchase intentions.

From a theoretical perspective, these findings extend the Technology Acceptance Model (TAM). The study provides a premise for integrating digital marketing innovations and operational efficiency into the TAM framework. The results suggest that the "assimilative" and "exertive" aspects of TAM can be broadened to include how new marketing tools systematically improve efficiency metrics. This moves the theory beyond user acceptance and into the realm of how these technologies drive tangible business performance. By demonstrating that adopting marketing innovations improves operational efficiency, the study establishes a new area for empirical research. There were no unexpected results, as all three variables showed a significant positive effect, confirming the initial hypotheses. This consistency across findings strengthens the study's conclusions.

### **CONCLUSION AND RECOMMENDATIONS**

This study confirms that digital marketing innovations significantly enhance operational efficiency in the consumer electronics sector. The research objectives were fully achieved, demonstrating that viral marketing reach, customer support responsiveness, and payment diversity have a direct and significant positive impact on operational efficiency. The findings show these factors collectively explain 63.8% of the variation in efficiency, with viral marketing being the strongest predictor.

From a theoretical standpoint, this research expands the Technology Acceptance Model (TAM) by showing that new marketing tools can improve business efficiency, not just user adoption. The study's results suggest that TAM's principles can be extended to include how technology

adoption drives tangible business performance, providing a new area for research. It establishes a clear link between the use of digital tools and concrete operational outcomes.

The practical significance of these findings is that consumer electronics firms should strategically invest in these digital marketing areas. By implementing robust viral marketing campaigns, enhancing customer support responsiveness, and diversifying payment options, businesses can improve their internal workflows and boost customer satisfaction. These actions are crucial for gaining a competitive advantage in the market.

A key limitation of this study is its focus on a specific region, which may limit the generalizability of the findings to other geographical areas. The study's cross-sectional design also provides a snapshot in time and does not capture changes over time. Future research could use a longitudinal design and include a wider range of industries to validate these findings.

- **Viral Marketing Reach Leverage:** This will be important for owners of companies, business executives, producers, and other various organizations to use the strategy of viral marketing activities to improve customer patronage.
- **Device a Quick Respond Strategy:** Businesses owners and sales persons should put up a workable strategy to ensure quick response for consumer request and service. Speedy responses go a long way to guarantee customer satisfaction and ensure subsequent patronage. It shows business credibility and strong system including competitive advantage and business growth.
- **Widens the range of Payment Methods:** Organizations are expected to widen or expand their payment methods for the flexibility of buyers. If one payment method is maintained by companies, customers may be hindered or face limitations making payment for transactions especially if they are in a location that does not subscribe to companies' payment mechanism. Companies must embrace newer technologies and innovation for payments and financial transactions.

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