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DIGITAL TRANSFORMATION: IS THERE ANY LINK WITH MARKET PERFORMANCE OF PHARMACEUTICAL MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES IN KENYA

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ABSTRACT

The business-operating environment in Kenya and especially in the City County of Nairobi has caused a large number of pharmaceutical Micro, Small, and Medium-Sized Enterprises report profit warnings and thus experience performance issues. Data from the World Bank for the previous two years indicate pharmaceutical MSMEs operating in Kenya have seen a decline in profits and stagnation. The study therefore sought to establish the effect of digital transformation elements including e-procurement, e-marketing, e-payment, and telemedicine, on the market performance of pharmaceutical Micro, Small, and Medium Enterprises (MSMEs) in Nairobi City County, Kenya. The research examines the limited understanding of how these digital technologies influence market performance, particularly in the pharmaceutical MSME sector. The study employs a cross-sectional descriptive research design, surveying 122 MSMEs from an initial target population of 175, selected through proportionate and simple random sampling. The questionnaire was tested for validity and reliability using Cronbach's alpha with a threshold of 0.7. Quantitative data were analyzed through multiple regression and correlation analysis to determine the strength of the relationships between variables. The results reveal that e-procurement, e-marketing, e-payment, and telemedicine significantly and positively affect market performance. The findings suggest that these digital strategies enhance procurement efficiency, marketing outreach, financial transactions, and healthcare service delivery, ultimately improving the market performance of pharmaceutical MSMEs.

INTRODUCTION

The pharmaceutical industry in Kenya, particularly micro, small, and medium enterprises (MSMEs), plays a crucial role in the nation's economy. Despite their potential, many pharmaceutical MSMEs struggle to adapt to the fast-paced digital transformation, which includes innovations such as e-procurement, e-marketing, e-payment, and telemedicine. This slow adoption limits their competitiveness and market performance, highlighting a significant scientific problem: understanding the relationship between digital transformation and market performance in this sector.

This research aims to examine how these digital strategies influence the market performance of pharmaceutical MSMEs in Nairobi City County. Addressing several intermediate challenges, such as identifying barriers to digital adoption and evaluating the effectiveness of existing digital tools, will help achieve this goal. Previous studies have shown that digital transformation is critical for enhancing operational efficiency and market outreach (Bouncken et al., 2018, Kalei, 2020; Leão & Silva, 2021).

Using a cross-sectional descriptive research design, the study surveys 122 MSMEs to gather data on their experiences with digital technologies and their perceived impacts on market performance. This research is timely and relevant, as the findings will contribute to the understanding of how digital transformation can enhance the performance of pharmaceutical MSMEs, providing insights for stakeholders in the industry.

In the subsequent sections, the paper will detail the methodology employed, present the results of the study, and discuss the implications of the findings for the pharmaceutical MSME sector in Kenya.

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LITERATURE REVIEW

Theoretical Literature Review

Dynamic Capabilities Theory

Teece and Pisano (1994) developed their dynamic capabilities theory, which extended the resource-based view (RBV) of the firm. It is posited that RBV, being static in nature, is insufficient in elucidating the firm's competitive advantage in a dynamic market. Conversely, due to varying types of resources and capabilities possessed, businesses within the same industry exhibit disparate performances based on RBV. The significance of dynamic capabilities in facilitating digital services and strategic alteration within a competitive, digital, and customer-centric business environment is underscored by Coreynen et al. (2020). They exemplify how dynamic capabilities are indispensable at each of the three stages they identified— Digitalization of business processes, goods and services, and business models. This theory supports digital transformation variable and market performance variable of the study.

Resource Based View

According to the theory, an organization's resource profile determines its performance, and the possession and use of unique resources that the company possesses is what gives an organization its superior performance (Barney, 1986). According to Grant (1991), the extent to which durability, transparency, transferability, and replicability affect the Resource-Based Theory (RBT) is substantial. According to the RBT, companies can gain a competitive edge if they possess rare, valuable, and distinctive resources that result in higher performance. However, detractors of the theory point out that it omits information about how resources can be created and used to gain a competitive advantage (Priem & Butler, 2001). The dependent variable, or the study's market performance, is supported by the theory.

Diffusion of Innovations Theory

The process by which innovations are embraced by users is explained by the Diffusion of Innovations Theory (DIT). Rogers (1995) defined diffusion as the process by which novel concepts disseminate among memberships of a social system over an extended time and via a variety of networks. According to Schiffman et al. (2010), not all innovations have the same chance of being adopted by consumers; some are quickly embraced, while others take longer, and still others are completely rejected. Marketers might not be able to predict with absolute certainty whether innovations were adopted. The E-marketing innovation variable is supported by this theory.

Resource Dependence Theory

Pfeffer and Salancik put the theory forth in 1978. Resource Dependency Theory (RDT) states that an organization succeeds when it makes the most use of its resources (Pfeffer, 1981). Weber's 1947 study of the foundations of power in organizations incorporated ample of the initial research of social exchange theorists and political scientists. The first person to extend power-based arguments from intra-organizational relations to relationships between organizations was Selznick (1949). According to RDT, the relationships between organizations are based on a system of power dynamics and resource exchange. Academics contend that as the nonprofit sector becomes more commercialized, the caliber of services offered by nonprofit organizations will decline (Adams & Perlmutter, 1991). The goal of competitive strategies is to give SMEs a stronger foothold in the increasingly competitive and expanding business environment (Ogunyemi, 2020).

Electronic Marketing Theory (EMT)

It is the submission of electronic technologies to the components of the marketing synthesis – Electronic Marketing Theory (Dann & Dann, 2011). Building upon the principles of marketing theory, Electronic Marketing Theory contends that managers can now use electronic technologies to inform decisions related to the Ps of marketing due to technological advancements and variations in the marketing environment (Harridge-March, 2004). According to the theory, businesses can more successfully achieve their marketing goals when they manage the components of the marketing mix using both online and offline tactics (Harridge-March, 2004). Electronic Marketing Theory is pertinent to the present investigation because it facilitates comprehension of the advantages that organizations can derive from implementing electronic marketing strategies.

Upper Echelon Theory

Upper Echelons Theory Donald Hambrick and Phyllis Mason developed and published the upper echelons hypothesis in 1984. They claimed that focusing on the dominant coalition, especially senior managers, was critical to understanding why organizations operated the way they did. According to Hambrick and Mason (1984), the upper echelons' qualities influenced the organization's strategic decisions, which in turn influenced its performance. As a result, they came to the conclusion that organizational performance levels are determined by the interplay of the situation, upper echelon traits, and strategic decisions. This theory supports the telemedicine variable and dependent variable

Empirical Review

E- Procurement and Market Performance

Mutunga (2020) carried out a study to investigate the effectiveness of e-procurement in state corporations in Kenya. The study's conclusions showed that state corporations have improved their procurement performance by implementing a variety of e-procurement strategies. The findings of the regression analysis showed that state corporations' e-procurement initiatives have had a major impact on their procurement strategies.

Barasa et al. (2017) looked into how E-Procurement affected public organizations' organizational performance, with a particular emphasis on the Bungoma County Government. The study's conclusions show that the performance of SMEs is significantly impacted by e-tending, e-ordering, e-purchasing, organizational performance, and use of digital procurement systems.

E-Marketing and Market Performance

Kawira, Mukulu, and Odhiambo (2019) examined how e-marketing affected the performance of Micro, Small and Medium Enterprises (MSMEs) in Kenya. The study was conducted with adherence to the positivist research philosophy by the researchers. According to the results of the bivariate regression, digital marketing significantly improved MSMEs' performance. According to this study, digital marketing should be adopted by MSMEs' owners and managers in Kenya as a means of achieving higher performance. Due to Kenya's high mobile phone penetration rate, better internet access, and dynamic, user-friendly social media platforms, business owners there should utilize these tools for marketing. One philosophical gap in the study is that, although the present version does not use positivism theory, the previous one did. The present gap was filled by research questions, whereas the second gap was conceptual in nature and relied on hypotheses. The third gap is contextual; whereas the previous study covered all Micro, Small and Medium-sized Enterprises in Nairobi City County in Kenya, the present one only concentrated on Nairobi County.

E-Payment and Market Performance

Kwabena and Daria (2019) investigated how the performance of MSMEs in developing nations was impacted by digital payment systems. This study looked into the effects of the digital payment system using an organizational, technological, and environmental framework. Data for this study was gathered via a self-administered, closed-ended questionnaire. The study's participants comprised of MSMEs' owners and executives. Partial least squares structural equation modeling was used to analyze the data. The study's conclusions highlight the important impacts that technology, organizations, the environment, and the usage of digital payment systems have on MSME performance. The present study investigated the performance of pharmaceutical Micro, Small and Medium-sized Enterprises' in Nairobi City County, whereas the previous study's context was different because it was conducted in Ghana and concentrated on small businesses.

Telemedicine and Market Performance

Samar (2022) examined the factors that impact individuals' decision-making regarding the utilization of telemedicine applications amidst the COVID-19 pandemic. In order to study individual behavior in connection to the adoption of telemedicine applications, the research model integrated the well-established theories of the DeLone and McLean information success model and the extended unified theory of acceptance and use of technology (UTAUT2). The results revealed a robust positive correlation between usage behavior and the intention to embrace telemedicine health applications when perceived severity is elevated. A theoretical gap is highlighted by this study's exclusion of the DeLone and McLean information success model and the extended unified theory of acceptance and use of technology (UTAUT2).

MATERIALS AND METHODS

This study uses a descriptive cross-sectional design. Data regarding respondents' opinions regarding digital transformation and the market performance of pharmaceutical MSMEs in Nairobi City County, Kenya, was gathered for the present study. The target group was selected in this study from the workforces of the three MSMEs categories—Micro (100), Small (50), and Medium (25)—bringing the total to 175. The research employed a proportionate stratified random sampling method to guarantee that each subgroup of the population is adequately represented. Employees from three pharmaceutical MSME categories Micro, Small, and Medium comprised the study's strata. A basic random sampling technique was employed to select participants from every category. This made it possible to represent every subgroup within the target population.
The sample size needed for employees to take part in the study was estimated using the Yamane (1967) formula.

$$n=\frac{N)}{1+N(e^2)}$$

$$n=\frac{175}{1+175(0.05)^2}=122$$

Using the Yamane (1967) formula the sample size was 122 respondents fro the target population of 175, this translates to 69.7% of the total population. This study made use of primary data. In order to gather the data, a semi-structured questionnaire was employed. In the pilot study, ten respondents, or 10% of the research sample, were used to validate the questionnaire. Internal consistency was evaluated by measuring the reliability of the questionnaire with Cronbach's alpha, a statistical measure of internal consistency.

The researcher has obtained authorization from NACOSTI to conduct the study. Each participant in the study was provided with a distinct questionnaire by the researcher. For ease of analysing and record qualitative data in the Social Sciences Statistical Package (SPSS Version 23), coding was done. Quantitative data was examined, both descriptive and inferential statistics. Correlation and multiple regression analysis on frequencies, Std.dev, and percentages were used for descriptive analysis, and correlation coefficients were used for inferential analysis.

DISCUSSIONS

Response Rate

A total of 122 questionnaires were administered to the respondents who were drawn micro enterprises, small enterprises and medium enterprises. The following Table 1 presents the finding of response rate.

Table 1. Response Rate

Category	Questionnaires administered	Questionnaires returned	Percentage
Macro enterprises	70	65	92.9
Small enterprises	35	32	91.4
Medium enterprises	17	15	88.2
Total	**122**	**112**	**91.8**

The results obtained on response and presented in Table 1 indicate that the respondents from the macro enterprises had a response rate of 92.9%, small enterprises accounted for 91.4% response rate and those from medium enterprises had a response rate of 88.2%. In addition, the overall response rate was 91.8%. Therefore, the data analysis was conducted by considering the obtained response rate, as suggested by Saunders et al. (2011), who recommended a minimum response rate of 70% to justify the analysis.

General Information of the Respondent

This section presents the general information of the respondents in terms gender, age bracket, academic qualification, department they worked with, status of employment and number of years in employment. These are presented as follows;

Gender

The respondents' gender distribution is outlined in Figure 1, highlighting the proportion of male and female individuals involved in the study.

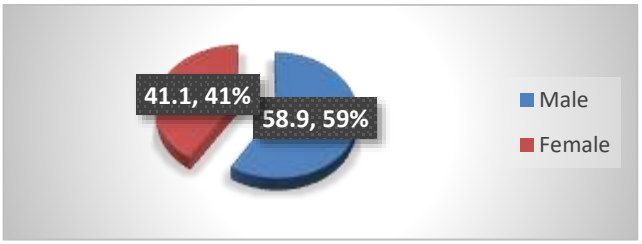

Figure 1. Gender

The findings on gender representation in the study as presented in Figure 1 indicate that male respondent's accounted majority as represented by 58.9% while female respondents were represented by 41.1%. This breakdown of gender representation allows for an analysis of any potential gender-related patterns or differences that may arise during the research.

Age Bracket

The age range of the participants is presented in Table 2 indicating the minimum and maximum ages observed within the sample.

Table 2. Age Bracket

Age bracket	Frequency	Percentage
Less than 24 years	11	9.8
24 to 33	38	33.9
34 to 44 years	42	37.5
45 years or more	21	18.8
Total	**112**	**100**

The findings on age bracket representation in the study as presented in Table 2 indicate that most of the respondents' age bracket ranged from 34 to 44 years as represented by 37.5%, 33.9% represented respondents whose age bracket was between 24 years to 33 years, 18.8% aged 45 years and above and 9.8% aged less than 24 years. Determining the age bracket of the respondents was important because the information provides insights into the age diversity of the participants and allows for the identification of any potential age-related trends or variations.

Academic Qualification

The educational background of the respondents is detailed in Figure 2, showcasing the various levels of education attained by the individuals involved in the study.

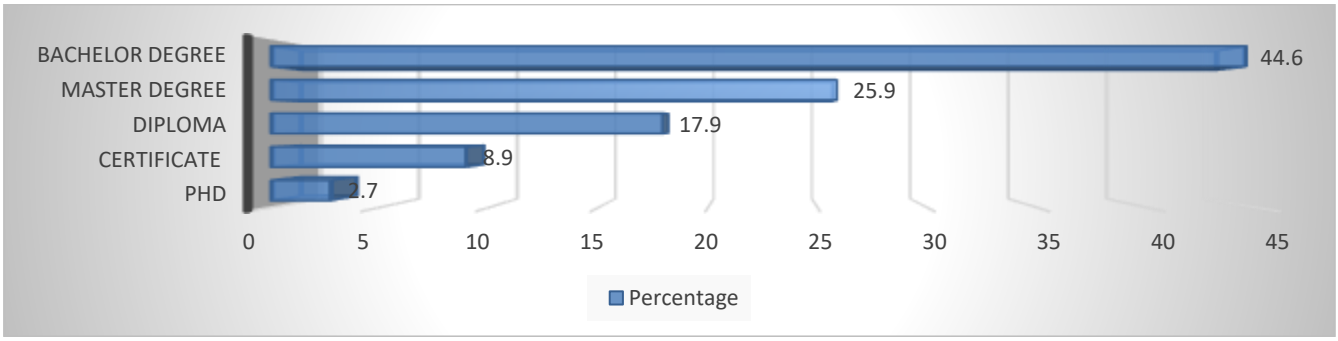

Figure 2. Academic Qualification

The results presented in Figure 2 indicate that those respondents who had attained a Bachelor's degree level of education were majority as represented by 44.6%, followed by the respondents with Master degree level of education at 25.9%, 17.9% representing those respondents with diploma, 8.9% had certificate and 2.7% had PhD level of education. Education level is a crucial factor that can significantly influence an individual's understanding, perception, and adoption of digital technologies. In addition, persons having higher levels of education are more likely to hold the essential knowledge and skills to effectively navigate and utilize digital tools and platforms.

Department

The department affiliation of the participants is outlined in Table 3, indicating the specific department or area of expertise to which each individual belongs.

Table 3. Department

Age bracket	Frequency	Percentage
Production	29	25.9
Sales	18	16.1
Quality control	26	23.2
Operations	24	21.4
Procurement	15	13.4
General clerks	29	25.9
Total	**112**	**100**

The results presented in Table 3 indicate that those respondents obtained from production and general clerks departments were majority at 25.9% respectively, followed by those from quality control department at 23.2%, 21.4% from operations department, 16.1% from sales department and 13.4% from procurement department. This information would help to understand the distribution of participants across different departments and may be relevant for analyzing any department-specific trends or perspectives that may emerge.

Employment Status

The employment status of the participants is then presented Figure 3, distinguishing between permanent, contracted, casual and intern.

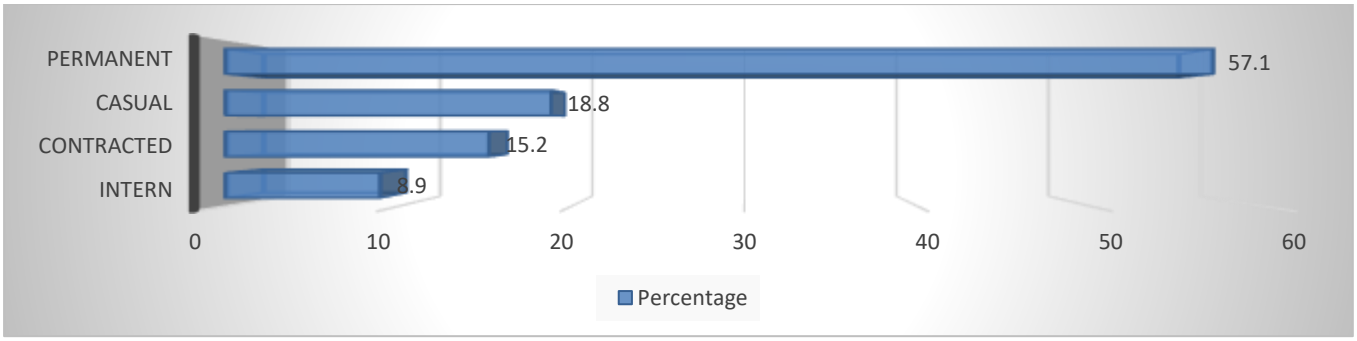

Figure 3. Employment Status

The results presented in Figure 3 indicate that permanent employees represented in the study were majority at 57.1%, followed by casual employees at 18.8%, 15.2% were contracted and 8.9% were interns. This information was necessary to the study since the employment status provides crucial information about the participants' level of involvement and experience in the industry. Different employment statuses, such as full-time employees or part-time employees can significantly influence their exposure to digital transformation and their understanding of its impact on market performance.

Length of Work

The length of work the participants is detailed in Table 4, indicating the length of years each individual has been associated with the organization under study.

Table 4. Length of Work

Length of work	Frequency	Percentage
Below 5 years	8	7.1
6 to 10 years	25	22.3
11 to 15 years	46	41.1
Above 16 years	33	29.6
Total	**112**	**100**

The results presented in Table 4 indicate that majority (41.1%) of the respondents had worked for a period ranging from 11 years to 15 years, surveyed by 29.6% of the respondents who had worked for over 16 years, 22.3% had worked for a period stretching from 6 years to 10 years and 7.1% had worked for a period below 5 years. This information was necessary because it would provide insights into the participants' level of experience and familiarity with the organization, which may influence their perspectives and responses during the research.

Descriptive Statistics Results

Descriptive statistics were utilized to analyze the quantitative data collected in the study. This involved calculating measures such as mean and std.dev to summarize the data and provide insights into the central tendency and variability of the variables under investigation. The results are presented as follows as per the study variables.

E-procurement

The descriptive results on e-procurement in terms of mean and std.dev are presented in Table 5.

Table 5. E-procurement

Statement	M	SD
Lower procurement costs are the outcome of the use of e-procurement.	3.58	1.409
Lower procurement costs are the outcome of e-procurement adoption.	4.52	0.478
The application of e-procurement has improved the efficiency of tendering processes.	4.59	0.407
The implementation of e-procurement has led to a rise in employee productivity.	4.14	0.855
The monitoring and evaluation procedures are now more efficient as a result of e-sourcing.	4.45	0.539
The e-ordering system is appropriately utilized by businesses to purchase equipment and services.	4.55	0.448
E-tendering streamlines the procurement process by doing away with needless paper work.	4.53	0.463
Bias and prejudice in supplier selection are eliminated through e-sourcing, which also streamlines the bidder evaluation process.	3.77	1.227
Aggregate mean and std.dev score	**4.27**	**0.728**

Source: Survey Data (2024)

The results in Table 5 indicate that the aggregate mean and std.dev score was 4.27 and 0.728 respectively which implies that the respondents agreed that of E-procurement influences the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on Likert scale. The finding agrees with research conducted by Mutunga in the year 2020, which focused on examining the efficacy of e-procurement in Kenyan state corporations. The study's conclusions showed that state corporations have improved their procurement performance by implementing a variety of e-procurement strategies.

The statements strongly agreed by the respondents were; the application of e-procurement has improved the efficiency of tendering processes (M=4.59, SD=0.407), the e-ordering system is appropriately utilized by businesses to purchase equipment and services (M=4.55, SD=0.448), E-tendering streamlines the procurement process by doing away with needless paper work (M=4.53, SD=0.463), lower procurement costs are the outcome of e-procurement adoption (M=4.52, SD=0.478). The finding agree with Barasa et al. (2017) research which looked into how E-Procurement affected public organizations' organizational performance, with a particular emphasis on the Bungoma County Government. The study's conclusions show that the performance of SMEs is significantly impacted by e-tending, e-ordering, e-purchasing, organizational performance, and use of digital procurement systems.

The statements agreed by the respondents were; the monitoring and evaluation procedures are now more efficient as a result of e-sourcing (M=4.45, SD=0.539), the implementation of e-procurement has led to a rise in employee productivity (M=4.14, SD=0.855), Bias and prejudice in supplier selection are eliminated through e-sourcing, which also streamlines the bidder evaluation process (M=3.77, SD=1.227) and lower procurement costs are the outcome of the use of e-procurement (M=3.58, SD=1.409). The finding agree with the goal of Ogunyemi 's (2020) study which was to examine how E-procurement affected Kenyan parastatals' operational efficiency and according to the study's findings, parastatal performance is positively correlated with e-sourcing, e-informing, e-payments, and e-tendering.

E-marketing

The descriptive results on e-marketing in terms of mean and std.dev are presented in Table 6.

Table 6. E-marketing

Statement	M	SD
Through the use of internet marketing, pharmaceutical MSME sales volumes and profitability have increased.	4.61	0.389
Mobile phones are essential for helping MSME's penetrate new markets.	3.64	1.355
Through marketing, Micro, Small and Medium-sized Enterprise owners who use mobile phones can boost their profitability.	3.23	1.770
Using social media can help Micro, Small and Medium-sized Enterprises' increase their market share.	3.11	0.886
Email is typically used to get feedback on customer satisfaction.	3.91	1.089
Micro, Small and Medium-sized Enterprises that use social media sites like Facebook and WhatsApp as marketing tools see increases in sales	4.51	0.489
The internet has increased the sales volume and profitability of pharmaceuticals.	4.58	0.418
Internet-based e-marketing significantly enhances pharmaceutical Micro, Small and Medium-sized Enterprises' capacity to draw in and keep clients.	4.42	0.577
Aggregate mean and std.dev score	**4.00**	**0.872**

The results in Table 6 indicate that the aggregate mean and Std.dev score was 4.00 and 0.872 respectively which implies that the respondents agreed that of E-marketing influences the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on Likert scale. The finding agrees with Kawira et al. (2019) research which examined how e-marketing affected the performance of Micro, Small and Medium-sized Enterprises (MSMEs) in Kenya. According to the results of the bivariate regression, digital marketing significantly improved Micro, Small and Medium-sized Enterprises' performance.

The statements strongly agreed by the respondents were; through the use of internet marketing, pharmaceutical Micro, Small and Medium-sized Enterprises sales volumes and profitability have increased (M=4.61, SD=0.389), Micro, Small and Medium-sized Enterprises that use social media sites like Facebook, The internet has increased the sales volume and profitability of pharmaceuticals (M=4.58, SD=0.418) and WhatsApp as marketing tools see increases in sales (M=4.51, SD=0.489). The finding concurs with Lin (2021) research on complementary e-marketing strategy for small- and medium-sized enterprises in Taiwan that are in the growth stage which discovered that sales potential, online purchases, and brand awareness rank highest among local weights for marketing objectives for SMEs in the growth phase. Facebook, PIXNET, Twitter, Instagram, and YouTube were the global weights in order for complementary social media to meet the aforementioned marketing goals.

The statements agreed by the respondents were; Internet-based e-marketing significantly enhances pharmaceutical Micro, Small and Medium-sized Enterprises' capacity to draw in and keep clients (M=4.42, SD=0.577), Email is typically used to get feedback on customer satisfaction (M=3.91, SD=1.089), mobile phones are essential for helping Micro, Small and Medium-sized Enterprise's penetrate new markets (M=3.64, SD=1.355). The finding concurs with Bala and Verma (2018) research which observed that digital marketing plays a crucial role in helping marketers identify their target audience, set goals, and create the most effective plan for reaching the greatest number of customers.

The statements moderately agreed by the respondents were; through marketing, Micro, Small and Medium-sized Enterprises owners who use mobile phones can boost their profitability (M=3.23, SD=1.770) and using social media can help Micro, Small and Medium-sized Enterprisese's increase their market share (M=3.11, SD=0.886). The findings are contrary to Khaled and Taher (2022) research which examined the relationship and effects of electronic payment methods on sales growth and the mediating role of online shopping with an emphasis on the banking industry in the United Arab Emirates. This study showed a strong correlation and direct relationship between the increase in sales and the increase in online shopping.

E-Payment

The descriptive results on e-payment in terms of mean and std.dev are presented in Table 7.

Table 7. E-payment

Statement	M	SD
Since e-payments are more difficult to falsify, pharmaceutical Micro, Small and Medium-sized Enterprises experience fewer financial irregularities.	4.53	0.469
Pharmaceutical Micro, Small and Medium-sized Enterprises can save money on procurement costs by using electronic payments.	3.55	1.448
The pharmaceutical Micro, Small and Medium-sized Enterprises use of electronic payments has made it easier to settle their debts for supplies.	4.52	0.480
The business has started accepting digital currency as payment for some of its goods.	3.90	1.090
The company processed its financial transactions primarily through mobile banking.	4.58	0.419
Aggregate mean and std.dev score	**4.22**	**0.781**

The results in Table 7 indicate that the aggregate mean and std.dev score was 4.22 and 0.781 respectively which implies that the respondents agreed that of e-payment influences the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on Likert scale. The finding agrees with Kwabena and Daria (2019) research which investigated how the performance of Micro, Small and Medium-sized Enterprises in developing nations was impacted by digital payment systems with a focus on Ghana. The study's conclusions highlight the important impacts that technology, organizations, the environment, and the usage of digital payment systems have on Micro, Small and Medium-sized Enterprises performance.

The statements strongly agreed by the respondents were; the company processed its financial transactions primarily through mobile banking (M=4.58, SD=0.419), since e-payments are more difficult to falsify, pharmaceutical Micro, Small and Medium-sized Enterprises experience fewer financial irregularities (M=4.53, SD=0.469) and the pharmaceutical Micro, Small and Medium-sized Enterprises use of electronic payments has made it easier to settle their debts for supplies (M=4.52, SD=0.480). The finding concurs with Khaled and Taher (2022) research, which examined the relationship and effects of electronic payment methods on sales growth and the mediating role of online shopping with an emphasis on the banking industry in the United Arab Emirates. This study showed a strong correlation and direct relationship between the increase in sales and the increase in online shopping.

The statements agreed by the respondents were; the business has started accepting digital currency as payment for some of its goods (M=3.90, SD=1.090) and pharmaceutical MSMEs can save money on procurement costs by using electronic payments (M=3.55, SD=1.448). The finding concurs with the study conducted by Awwad (2021) which looked at how e-payments can improve financial performance through a case study of the Bank of Palestine. The findings show that the bank's financial performance, as indicated by the equity and return on assets indicators, is significantly impacted by the use of electronic payment methods, which contribute to lower expenses and higher profits.

Telemedicine

The descriptive results on telemedicine in terms of mean and std.dev are presented in Table 8.

Table 8. Telemedicine

Statement	M	SD
The effectiveness of healthcare at the pharmaceuticals is significantly impacted by telemedicine Micro, Small and Medium-sized Enterprises	3.67	1.329
Telemedicine in pharmaceutical Micro, Small and Medium-sized Enterprises is simple and practical.	4.01	0.899
Telemedicine enhances performance and speed, making text messaging more effective.	4.50	0.500
Telemedicine raises the standard of care.	4.56	0.438
Telemedicine provides relief from the shortage of doctors.	4.09	0.887
Video communication and performance surgery are made possible by telemedicine.	4.57	0.428
Video communication is used for patient monitoring and assessment.	4.22	0.776
Aggregate mean and std.dev score	**4.23**	**0.751**

The results in Table 8 indicate that the aggregate mean and std.dev score was 4.23 and 0.751 respectively which implies that the respondents agreed that of telemedicine influences the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on Likert scale. The finding agrees with Samar (2022) research which examined the factors that impact individuals' decision-making regarding the utilization of telemedicine applications amidst the COVID-19 pandemic. The results revealed a robust positive correlation between usage behavior and the intention to embrace telemedicine health applications when perceived severity is elevated.

The statements that were strongly agreed by the respondents were; telemedicine raises the standard of care (M=4.56, SD=0.438), video communication and performance surgery are made possible by telemedicine (M=4.57, SD=0.438), telemedicine enhances performance and speed, making text messaging more effective (M=4.50, SD=0.500). The finding agree with Zailani et al. (2014) research which investigated the determinants that affect the acceptance of telemedicine and how the health culture influences the connection between these determinants and the acceptance of telemedicine in a particular subset of public hospitals in Malaysia. The results showed that the government policies, senior management support, utility perceptions, and computer self-efficacy has positively and significantly influenced telemedicine adoption in Malaysian public hospitals.

The statements that were agreed by the respondents were; Video communication is used for patient monitoring and assessment (M=4.22, SD=0.776), telemedicine provides relief from the shortage of doctors (M=4.09, SD=0.887), telemedicine in pharmaceutical Micro, Small and Medium-sized Enterprises is simple and practical (M=4.01, SD=0.899) and the effectiveness of healthcare at the pharmaceuticals is significantly impacted by telemedicine. MSMEs (M=3.67, SD=1.329). The finding agrees with Crowling, Uscher-Pines et al. (2016) research that focused on an examination of the accessibility of care for both Teladoc users and nonusers, as well as the quality of care provided by the prominent direct-to-consumer (DTC) telemedicine company, Teladoc, in comparison to that provided in traditional doctor's offices. The performance of Teladoc was found to be inferior to that of physician offices in the context of the pharyngitis performance measure.

Market Performance

The descriptive results on market performance in terms of mean and std.dev are presented in Table 9.

Table 9. Market Performance

Statement	M	SD
E-marketing techniques, such as the internet, social media, and emails, are used to increase market share.	4.22	0.780
Staff productivity has increased in pharmaceutical Micro, Small and Medium-sized Enterprises as a result of e-procurement.	4.16	0.836

E-payments have increased procurement payments' accountability and, consequently, their profitability.	3.94	1.060
Telemedicine raises the standard of care.	3.87	1.135
Customer feedback indicates that telemedicine is advantageous for pharmaceutical Micro, Small and Medium-sized Enterprises.	4.11	0.809
By implementing e-procurement, Micro, Small and Medium-sized Enterprises can boost their revenue and profitability.	4.09	0.809

The results in Table 9 indicate that the respondents agreed on statements that; E-marketing techniques, such as the internet, social media, and emails, are used to increase market share (M=4.22, SD=0.780), staff productivity has increased in pharmaceutical MSMEs as a result of e-procurement (M=4.16, SD=0.836), customer feedback indicates that telemedicine is advantageous for pharmaceutical Micro, Small and Medium-sized Enterprises (M=4.11, SD=0.809), by implementing e-procurement, Micro, Small and Medium-sized Enterprises can boost their revenue and profitability (M=4.09, SD=0.809), e-payments have increased procurement payments' accountability and, consequently, their profitability (M=3.94, SD=1.060) and telemedicine raises the standard of care (M=3.87, SD=1.135). According to Godke and McCahery (2019). Micro, Small and Medium-sized Enterprises can be assessed according to their size, workforce count, working capital, and profitability. Market performance is defined as a company's capacity to adjust to the business environment and formulate a sound plan that supports management's ability to foster harmony within the organization and the surrounding environment.

Inferential Statistics Results

The inferential statistics were conducted using correlation analysis and multiple regressions analysis. The findings are presented as follows;

Correlation Analysis

The correlation analysis results presented in Table 10 indicate that the Pearson r value for e-procurement, e-marketing, e-payment and telemedicine against market performance is 0.770, 0.816, 0.709 and 0.799 respectively. These values are closer to 1 which signifies a perfect positive relationship between the independent variables and dependent variable. Therefore, e-procurement, e-marketing, e-payment and telemedicine were strongly correlated with market performance.

Table 10. Correlation Analysis

		E-procurement	E-marketing	E-payment	Telemedicine	Market performance
E-procurement	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	112				
E-marketing	Pearson Correlation	.118**	1			
	Sig. (2-tailed)	.207				
	N	112	112			
E-payment	Pearson Correlation	.381**	.442**	1		
	Sig. (2-tailed)	.213	.211			
	N	112	112	112		
Telemedicine	Pearson Correlation	.406	.304	.293	1	
	Sig. (2-tailed)	.334	.107	.103		
	N	112	112	112	112	
Market performance	Pearson Correlation	.770**	.816**	.709**	.799**	1
	Sig. (2-tailed)	.002	.000	.001	.001	
	N	112	112	112	112	112

Multiple Regression Analysis

Regression analysis was done to estimate the relationship between dependent variable and independent variables. The results are presented in Table 11, 12 and 13.

Table 11. Model Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.901[a]	.812	.795	0.0542

The results in Table 11 show that the value of adjusted R square is 0.795 (79.5%) which is the extent which the market performance of pharmaceutical MSMEs in NCC varied due to the influence of e-procurement, e-marketing, e-payment and telemedicine. Therefore, the remaining 20.5% represents other variables not studied.

Table 12. Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	119.023	4	29.756	39.736	.001
	Residual	80.125	107	0.7488		
	Total	199.148	111			

The results as presented in Table 12 show that the statistical F value was 39.736 greater than the statistical mean value of 29.756. In addition, the significance value was at 0.001 which was less than the level of significance at 0.05. Thus, confirming the significance of the model.

Table 13. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.701	.125		5.608	.001
	E-procurement	.811	.217	.0521	3.737	.000
	E-marketing	.726	.310	.4016	2.342	.001
	E-payment	.770	.229	.3304	3.362	.001
	Telemedicine	.701	.330	.2160	2.124	.002

The results presented in Table 13 show that when e-procurement, e-marketing, e-payment and telemedicine are held constant, the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County would be 0.701. The regression coefficients obtained for each individual variable indicate that by improving e-procurement, e-marketing, e-payment and telemedicine would improve the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County by 0.811, 0.726, 0.770 and 0.701 respectively. Therefore, the regression equations would be as presented below;

Market performance = 0.701 + 0.811(e-procurement) + 0.726(e-marketing) + 0.770(e-payment) + 0.701(telemedicine)

The study found that there was a positive considerable connection between e-procurement and the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on β-value obtained (β=0.0521, p=0.000). The finding agrees with Barasa et al. (2017) research which looked into how E-Procurement affected public organizations' organizational performance, with a particular emphasis on the Bungoma County Government. The study's conclusions show that the performance of SMEs is significantly impacted by e-tending, e-ordering, e-purchasing, organizational performance, and use of digital procurement systems.

The study revealed that there was a positive considerable connection between e-marketing and the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on β-value obtained (β=0.4016, p=0.001). The finding agrees with Kawira et al. (2019) research which examined how e-marketing affected the performance of Micro, Small and Medium-sized Enterprises in Nairobi City County) in Kenya. According to the results of the bivariate regression, digital marketing significantly improved Micro, Small and Medium-sized Enterprises' performance.

The study established that that there was a positive considerable connection between e-payment and the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on β-value obtained (β=0.3304, p=0.001). The finding concurs with Khaled and Taher (2022) research which examined the relationship and effects of electronic payment methods on sales growth and the mediating role of online shopping with an emphasis on the banking industry in the United Arab Emirates. This study showed a strong correlation and direct relationship between the increase in sales and the increase in online shopping.

The study found that that there was a positive considerable connection between telemedicine and the market performance of pharmaceutical Micro, Small and Medium-sized Enterprises in Nairobi City County based on β-value obtained (β=0.2160, p=0.002). The finding agreess with Samar (2022) research which examined the factors that impact individuals' decision-making regarding the utilization of telemedicine applications amidst the COVID-19 pandemic. The results revealed a robust positive correlation between usage behavior and the intention to embrace telemedicine health applications when perceived severity is elevated.

CONCLUSIONS

This study aimed to investigate the impact of digital transformation elements—specifically e-procurement, e-marketing, e-payment, and telemedicine—on the market performance of pharmaceutical micro, small, and medium enterprises (MSMEs) in Nairobi City County, Kenya. The results indicate a significant positive influence of these digital strategies on the performance metrics of these enterprises, including profitability, efficiency, and market reach. The unique contribution of this research lies in its empirical assessment of how digital transformation can enhance the competitive position of pharmaceutical MSMEs, addressing a critical gap in the existing literature. The findings suggest that adopting these technologies not only streamlines operations but also improves customer engagement and satisfaction.

From a theoretical standpoint, the study enhances the understanding of the relationship between digital transformation and firm performance within the MSME context. Practically, it provides actionable insights for managers, emphasizing the importance of investing in digital technologies to improve operational efficiency and market performance. However, the research is not without limitations. The focus on a single geographic area may limit the generalizability of the findings. Future research could expand to include a broader range of MSMEs across different regions to validate and extend these results. In conclusion, this study paves the way for further exploration into the digital transformation strategies that can be leveraged by pharmaceutical MSMEs, with a focus on long-term impacts and evolving technologies.

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REFERENCES

Adams, C., & Perlmutter, F. (1991). Commercial venturing and the transformation of America's voluntary social welfare agencies. *Nonprofit and Voluntary Sector Quarterly, 20*(1), 25–38. https://doi.org/10.1177/089976409102000104

Awwad, M. (2021). The impact of e-payments on financial performance: A case study of the Bank of Palestine. *Journal of Financial Services Marketing, 26*(2), 115-126. https://doi.org/10.1057/s41264-021-00083-4

Bala, M., & Verma, D. (2018). A Critical Review of Digital Marketing. International Journal of Management, *IT & Engineering, 8*, 321-339.

Barasa, W. P., Namusonge, G., & Okwaro, F. (2017). Effects of E-Procurement on the Organizational Performance of County Governments in Kenya: A Case study of Bungoma County Government. *International Journal of Recent Research in Commerce Economics and Management, 4*(4), 161-182.

Barney, J. B. (1986). Strategic factor markets: Expectations, luck, and businessstrategy. *Management Science, 32*, 1231-1241. https://doi.org/10.1287/mnsc.32.10.1231

Bouncken, R. B., Lehmann, C., & Fellnhofer, K. (2018). The role of entrepreneurial orientation and modularity for business model innovation. *International Journal of Innovation Management*, *22*(1), 1-23. https://doi.org/10.1142/S1363919618400053

Coreynen, W., Matthyssens, P., Vanderstraeten, J., & van Witteloostuijn, A. (2020). Unravelling the internal and external drivers of digital servitization: A dynamic capabilities and contingency perspective on firm strategy. *Industrial Marketing Management*, *89*, 265-277. https://doi.org/10.1016/j.indmarman.2020.02.014

Dann, S., & Dann, S. (2011). eMarketing, Palgrave MacMillian: Bassingstoke.

Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California management review*, *33*(3), 114-135. http://dx.doi.org/10.2307/41166664

Godke, V. M., & McCahery, J. A. (2019). The financing of small and medium sized enterprises: an analysis of the financing gap in Brazil. *European Business Organization Law Review, 20*, 633-664

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *The Academy of Management Review, 9*(2), 193-206.

Harridge-March, S. (2004). Electronic marketing, the new kid on the block. *Marketing Intelligence & Planning, 22*(3), 297-309. https://doi.org/10.1108/02634500410536885

Kalei, A. (2020). Digital marketing strategies and the marketing performance of top 100 small and medium enterprises (SMEs) in Kenya. *International Journal of Research in Management & Business Studies, 7*(3), 2348-6503

Kawira, M., Mukulu, E., & Odhiambo, J. (2019). E-marketing and the performance of Micro Small and Medium Enterprises in Kenya. *Journal of Marketing and Management, 10*(1), 45-60. https://doi.org/10.21511/ijmm.10(1).2019.04

Khaled, M., & Taher, H. (2022). The relationship between electronic payment methods and sales growth: Evidence from the banking sector in the UAE. *International Journal of Bank Marketing, 40*(5), 951-967. https://doi.org/10.1108/IJBM-04-2021-0160

Kwabena, O., & Daria, M. (2019). Digital payment systems and their effects on MSME performance in Ghana. *Journal of Business and Economic Development, 4*(1), 32-45. https://doi.org/10.11648/j.jbed.20190401.14

Leão, P., & Silva, M. M. (2021). Impacts of digital transformation on firms' competitive advantages: A systematic literature review. *Strategic Change, 30*(5), 421-441. https://doi.org/10.1002/jsc.2459

Lin, C.-C. (2021). Investigating Complimentary E-Marketing Strategy for Small- and Medium-Sized Enterprises at Growth Stage in Taiwan. *Information*, 12, 380.https://doi.org/10.3390/info12090380

Mutunga, J. M. (2020). E-Procurement and the Performance of Small and Medium Enterprises in Nairobi City County Kenya. Unpublished MBA project, Kenyatta University.

Pfeffer, J. (1981). Power in Organizations. Marshfield, MA: Pitman Publishing.

Pfeffer, J., & Salancik, G. (1978). The External Control of Organizations: A Resource Dependence Perspective. Harper & Row, New York.

Priem, R. L., & Butler, J. E. (2001). Is the Resource-Based "View" a Useful Perspective for Strategic Management Research? *Academy of Management, 26* (1), 22-40.

Ogunyemi, A. O. (2020). Competitive Strategies to Improve Small and Medium Enterprise Sales. Unpublished PhD Thesis. Walden University.

Rogers, E. M. (1995). Diffusion of Innovations, Fourth edition, New York, Free Press.

Samar, M. (2022). Factors influencing telemedicine adoption during the COVID-19 pandemic: An empirical investigation. *Telemedicine and e-Health, 28*(1), 1-10. https://doi.org/10.1089/tmj.2021.0189

Saunders, M., Lewis, P., & Thornhill, A. (2011). Research Methods for Business Students. 5th Edition, Pearson Education, Essex.

Schiffman, L. G., Kanuk, L. L., & Kumar, S. R. (2010). Consumer Behavior (10th ed.). New Delhi: Pearson Prentice Hall.

Selznick, P. (1949). TVA and the Grass Roots. Harper, New York.

Teece, D. J., & Pisano, G. P. (1994). The Dynamic Capabilities of Firms: An Introduction. *Industrial and Corporate Change*, 3(3), 537-556.

Uscher-Pines, L., Mulcahy, A., Cowling, D., Hunter, G., Burns, R., & Mehrotra, A. (2016). Access and quality of care in direct-to-consumer telemedicine. *Telemedicine and e-Health*, *22*(4), 282-287. https://doi.org/10.1089/tmj.2015.0079

Weber, M. (1947). The Theory of Social and Economic Organizations. New York: Free Press.

Yamane, T. (1967). Statistics: An Introductory Analysis. 2nd Edition, Harper and Row, New York.

Zailani, S., Gilani, M. S., Nikbin, D., & Iranmanesh, M. (2014). Determinants of telemedicine acceptance in selected public hospitals in Malaysia: clinical perspective. *Journal of medical systems*, *38*, 1-12. https://doi.org/10.1007/s10916-014-0111-4