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The Effectiveness of Social Media Utilization in Marketing Success of e-Pharmacies in Saudi Arabia

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Abstract

This study examines the effectiveness of social media utilization in the marketing success of e-pharmacies in Saudi Arabia, focusing on disease awareness campaigns, product promotion, social media marketing, and corporate social responsibility (CSR). Using a quantitative research design, data were collected from 240 licensed pharmacists and social media users in Saudi Arabia through a structured survey. SPSS software was used for descriptive statistics, multiple regression analysis, and reliability testing. The findings indicate that social media marketing ($B=0.422$, $p<0.001$) had the strongest impact on e-pharmacy success, followed by disease awareness campaigns ($B=0.274$, $p<0.001$) and product promotion ($B=0.168$, $p=0.007$). However, CSR ($B=0.081$, $p=0.083$) did not show a statistically significant impact. The model explained 77% of the variance ($R^2=0.77$) in e-pharmacy marketing success. The study highlights the growing role of social media in enhancing brand visibility, consumer trust, and engagement. Findings suggest that optimizing digital marketing strategies, increasing disease awareness, and leveraging targeted product promotion can significantly improve e-pharmacy adoption and consumer satisfaction. This research contributes to the academic discourse on digital marketing in healthcare and provides actionable insights for pharmaceutical companies, policymakers, and marketers seeking to enhance online engagement and consumer confidence in the Saudi e-pharmacy sector.

Keywords: Social Media Marketing, E-Pharmacies, Digital Marketing, Consumer Trust, Disease Awareness, Product Promotion, Corporate Social Responsibility (CSR).

Introduction

The rapid advancement of technology and widespread use of social media have significantly altered consumer behavior especially in industries like pharmaceuticals. Social media platforms, with their ability to target and engage users directly, have become a pivotal tool for marketing pharmaceutical products, influencing consumer purchasing patterns and preferences. In Saudi Arabia where online platforms are experiencing widespread adoption the pharmaceutical sector is witnessing a transformation in how products and services are marketed and consumed, Abanmy (2017) emphasized the increasing utilization of online pharmacies in Saudi Arabia, noting that while the convenience and accessibility of these platforms appeal to consumers, there is still a lack of trust in e-pharmacy services, This issue underscores the importance of

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understanding the role of social media in bridging trust gaps and shaping consumer attitudes, Similarly Ben Said et al. (2020) found that pharmaceutical digital marketing is becoming increasingly prevalent among community pharmacies in Saudi Arabia with many perceiving it as effective in reaching broader audiences , Globally, the shift towards e-pharmacies is evident. Soboleva et al. (2022) emphasized that "the growing popularity of e-pharmacies among the population reflects changing consumer preferences driven by the need for convenience and accessibility." However, the authors also noted challenges, such as consumer skepticism and regulatory concerns, which demand attention, Adebo et al. (2024) explored e-pharmacy adoption among young users and found that social influence plays a critical role in shaping behavior, This finding suggests that social media, as a primary driver of social influence, could be instrumental in transforming the e-pharmacy landscape, Despite these advancements there are still gaps in understanding how social media impacts consumer behavior specifically in Saudi Arabia's pharmaceutical sector, As Masram et al. (2021) stated "E-marketing strategies are essential for the pharmaceutical sector to remain competitive in a digitally driven market." Furthermore, Atsbeha and Wodaje (2024) identified social media as a significant factor in marketing among healthcare professionals indicating its untapped potential for influencing consumer behavior, this study addresses the pressing need to examine the effectiveness of social media utilization in marketing for e-pharmacies in Saudi Arabia. Given the shifting behaviors and the increasing reliance on digital platforms, understanding these dynamics is essential to develop strategies that enhance trust, engagement, and consumer satisfaction.

Literature Review

Marketing for E-Pharmacies

The integration of digital marketing strategies into the pharmaceutical industry has transformed the way products and services are promoted and consumed, Abanmy (2017) explored the extent of online pharmacy use in Saudi Arabia, emphasizing a significant gap in consumer trust that necessitates robust marketing strategies to address concerns about product authenticity and safety, Similarly, Suleiman, & Albarq (2024) and Almeman (2024) discussed the digital transformation in pharmacy emphasizing the cosmeceutical paradigm shift and the critical role of marketing in establishing brand trust and customer engagement, Ben Said et al. (2020) investigated the prevalence and perceived effectiveness of pharmaceutical digital marketing revealing that social media platforms play a crucial role in community pharmacies outreach strategies, Alhaddad (2018) further elaborated on the use of social media among Saudi residents for accessing medicine related information underscoring its influence on consumer behavior and purchase decisions, Soboleva et al. (2022) examined the growing preference for e-pharmacies emphasizing the convenience they offer while pointing out the need for marketing to build consumer trust Padmashree and Chitra (2024) emphasized how personalization and regulatory compliance are essential in online marketing strategies to enhance consumer confidence in e-pharmacy platforms (Albarq, 2024). These studies collectively illustrate the potential of social media and digital marketing to revolutionize the e-pharmacy sector. However, they also point to challenges such as trust deficits and regulatory hurdles which need strategic interventions to optimize consumer engagement and market reach.

Social Media Utilization

Social media has emerged as a pivotal tool in transforming the marketing landscape for e-pharmacies in Saudi Arabia facilitating communication enhancing brand visibility and building customer trust, Abanmy (2017) explored the limited yet growing use of online pharmacies in

Saudi Arabia emphasizing the role of social media in bridging the gap between consumers and e-pharmacy services, Alhaddad (2018) revealed that social media platforms are increasingly used by Saudi residents to access medicine related information underscoring their influence on consumer decision making and trust-building, Ben Said et al. (2020) examined the prevalence of pharmaceutical digital marketing in Saudi Arabia identifying social media as a dominant channel for community pharmacies to engage customers, This aligns with findings by Salhab et al. (2023) who demonstrated that social media marketing positively impacts purchase intentions through the mediating roles of brand trust and image, Additionally El Kheir et al. (2021) emphasized Saudi Arabia's unique experience with health related social media use illustrating its potential to foster consumer awareness and loyalty in the pharmaceutical sector, These studies collectively indicate that social media utilization not only enhances marketing efficacy for e-pharmacies but also addresses critical challenges such as trust and consumer engagement making it an indispensable tool for the industry's growth in Saudi Arabia.

Disease Awareness Campaigns

Disease awareness campaigns are vital in educating the public about health issues, promoting early detection and encouraging appropriate medical interventions. For e-pharmacies in Saudi Arabia, these campaigns help create brand awareness and build trust with consumers by demonstrating social responsibility. Through digital platforms, e-pharmacies can leverage disease awareness campaigns to engage with a broader audience, educating them about various distraught prevention methods, and available treatments. Studies such as Ben Said et al. (2020) emphasize the role of digital marketing in spreading health-related information effectively, By aligning with health initiatives, e-pharmacies in Saudi Arabia not only promote their products but also position themselves as trusted healthcare partners, These campaigns often increase consumer engagement, leading to higher trust in online pharmacies, which is a key factor for the adoption of e-pharmacy services in the region.

Product Promotion

Product promotion plays a crucial role in the success of e-pharmacies by driving visibility and increasing sales, In Saudi Arabia online pharmacies utilize various digital marketing strategies, including social media advertisements and targeted campaigns to promote pharmaceutical products, Abanmy (2017) discusses the growing use of online platforms by Saudi residents where product promotions are designed to inform consumers about product benefits and availability, Effective product promotion strategies including discounts, special offers and seasonal campaigns, can create a sense of urgency and encourage purchases, Additionally platforms like Instagram and Facebook are often used by e-pharmacies to emphasize product features and build customer loyalty, The promotional activities create an interactive environment allowing consumers to gain immediate access to essential health products while enhancing brand visibility.

Social Media Marketing

The impact of social media marketing on an essential aspect of e-pharmacy marketing is significant, particularly in Saudi Arabia where health literacy is gradually improving. Social media platforms are increasingly used by e-pharmacies to educate patients on the safe use of medications, potential side effects, dosage instructions and possible drug interactions. According to Alhaddad (2018) the rising use of social media for medical information presents an opportunity for e-pharmacies to empower patients and provide them with valuable health-related

insights, Through various digital tools such as blogs, videos, webinars and customer support e-pharmacies guide patients in understanding their treatment options, This educational approach not only enhances patient outcomes but also strengthens the credibility of e-pharmacies, By delivering valuable, evidence-based content, e-pharmacies foster trust with consumers, creating a reliable relationship that encourages repeat business—essential for sustained growth in this sector.

Corporate Social Responsibility (CSR)

Corporate social responsibility (CSR) is a critical component of modern marketing strategies, especially for e-pharmacies in Saudi Arabia, CSR initiatives can include supporting public health initiatives, promoting environmental sustainability and engaging in charitable activities, Almeman (2024) emphasizes the role of digital transformation in pharmacy where e-pharmacies can integrate CSR efforts into their business model by supporting local communities or engaging in health awareness campaigns, For example e-pharmacies can collaborate with NGOs to provide free or discounted medicines to underserved populations or fund programs that promote health education, Such initiatives not only strengthen the brand's reputation but also increase consumer trust and loyalty, By adopting CSR practices e-pharmacies align with consumer values, demonstrating a commitment to societal well-being while simultaneously enhancing their marketing efforts in a competitive market.

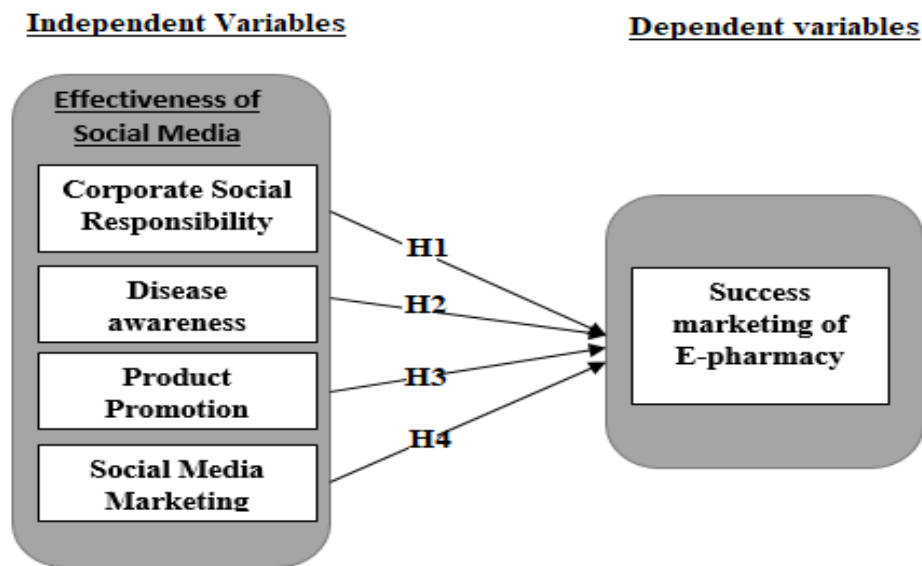


Figure 1. Research Model

Hypothesis Testing

Hypothesis testing is a statistical method used to evaluate assumptions about a population based on sample data, In this study it will assess the impact of Disease Awareness Campaigns, Product Promotion, Patient Education and Corporate Social Responsibility (CSR) on the marketing success of e-pharmacies in Saudi Arabia, guiding effective strategies.

H1: Corporate Social Responsibility positively impact the marketing success of e-pharmacies in Saudi Arabia.

H1: Disease awareness campaigns positively impact the marketing success of e-pharmacies in Saudi Arabia

H2: Product Promotion positively impact the marketing success of e-pharmacies in Saudi Arabia

H3: social media marketing positively impacts the marketing success of e-pharmacies in Saudi Arabia.

H4: Social Media Utilization positively impact the marketing success of e-pharmacies in Saudi Arabia.

Methodology

This study adopts a quantitative research design to investigate the impact of social media utilization on the marketing success of e-pharmacies in Saudi Arabia. A cross-sectional survey approach was utilized to collect data from individuals who actively engage with e-pharmacies on social media platforms such as Instagram, Twitter, Facebook, and Snapchat.

Study Design and Participants

This research follows a descriptive analytical methodology that aims to describe a current phenomenon without interfering or manipulating variables. The quantitative approach was adopted using a survey strategy to collect primary data through a pre-designed and tested questionnaire to ensure its validity and accuracy. The study was conducted in the Kingdom of Saudi Arabia during the period from February 1 to March 20, 2025. The study sample included licensed pharmacists working in community pharmacies within the Kingdom. Participation in the study was voluntary and did not pose any risks to the participants, as all potential participants provided their informed consent before starting to fill out the questionnaire.

Population and Sample

Based on the number of licensed pharmacists in Saudi Arabia, the required sample size was calculated using a 5% margin of error, a 95% confidence level, and a 50% response distribution, resulting in a minimum required sample size of 240 participants. The calculation was performed using the following formula:

$$N = P \times (100 - P) \times z^2 / d^2$$

P: expected percentage (prevalence) of the phenomenon under study, here it refers to the expected percentage of pharmacists who have a certain level of knowledge, d: required level of accuracy in the results (5% in this case), z: value corresponding to the confidence level of the normal distribution (1.96 for a 95% confidence level). A 50% prevalence estimate was used because it represents the most conservative option when previous studies providing accurate proportions are not available. Choosing this estimate ensures that the sample size is sufficient to cover the maximum possible variation in responses, enhancing the accuracy and stability of the results. Accordingly, a sample size of 240 participants was considered representative and appropriate for this study. A simple random sampling technique was employed to select participants ensuring that every individual in the population had an equal chance of being included in the sample which helps reduce bias and increase the generalizability of the findings.

Data Collection

Data were collected through an online survey distributed via social media platforms (Instagram, Twitter, Snapchat) and email campaigns targeting individuals residing in Saudi Arabia, The

online format ensured broad accessibility and convenience for respondents, To enhance response rates, reminders were sent periodically and participation was incentivized with optional entry into a prize draw, All data were anonymized to maintain confidentiality and were processed for analysis using SPSS software.

Study Instrument

A structured questionnaire was developed to measure the effectiveness of social media utilization in the marketing success of e-pharmacies, The questionnaire was informed by prior studies, including Pinto (2023), Banerjee & Dash (2013) and Al-Assaf et al. (2025), to ensure validity and reliability. It was divided into the following sections: demographic Information: Age, gender, education level, and social media usage. Independent Variables: Effectiveness social media strategies (Corporate Social Responsibility, Disease awareness, Product Promotion, social media marketing, Success marketing of e-pharmacy) using 25 items. Dependent Variables: Measuring marketing success indicators using 7 items. A five-point Likert scale ranging from "Strongly Agree" (5) to "Strongly Disagree" (1) was used to collect responses. Following Subedi's (2016) approach, the category length was calculated as 1.3 using the formula $((5-1)/3)$. Based on this calculation, average scores are interpreted as follows: a low level is indicated by an average between 1 and 2.33, a medium level by an average between 2.34 and 3.67, and a high level by an average between 3.68 and 5.00.

Reliability Analysis

Reliability analysis is a crucial step in assessing the internal consistency of a measurement instrument, ensuring that the scale used in the study produces stable and consistent results, One of the most widely used reliability coefficients is Cronbach's alpha (α) which measures the degree to which items within a scale are interrelated (Tavakol & Dennick, 2011), A Cronbach's alpha value above 0.70 is generally considered acceptable while values exceeding 0.80 indicate good reliability and values above 0.90 suggest excellent internal consistency (Nunnally & Bernstein, 1994), Table 1 presents the reliability analysis results for the study variables using Cronbach's alpha, The findings indicate that all constructs demonstrate high internal consistency with Cronbach's alpha values ranging from 0.878 to 0.924, The overall reliability for the entire scale encompassing all 32 items, is 0.924 confirming the robustness of the measurement instrument, These results suggest that the questionnaire is reliable for assessing corporate social responsibility, disease awareness, product promotion, social media marketing and the success of e-pharmacy marketing.

	Cronbach's Alpha	N of Items
Corporate Social Responsibility	0.88	4
Disease awareness	0.908	9
Product Promotion	0.878	5
social media marketing	0.903	7
Success marketing of e-pharmacy	0.895	7
All	0.924	32

Table 1. Reliability Analysis Using Cronbach's Alpha

Results

This section presents the findings obtained from analyzing the study data using SPSS 28, The first part summarize the descriptive statistics related to the respondents' demographic characteristics while the second part evaluates the study hypotheses through multiple linear regression analysis.

Demographic Data for Respondents

This section provides an overview of the demographic characteristics of the study respondents, Understanding these characteristics is essential for interpreting the study results, as they offer insights into the composition of the sample, The demographic data include key variables such as gender, age, educational level, Occupation, Region of Residence and Frequency of Social Media Use which help contextualize the findings and assess the representativeness of the sample, Table 2 summarizes the demographic characteristics of the respondents. The majority were male 184(75.4%) and aged between 35–44 years 116 (47.5%). Most held a bachelor's degree 209 (85.7%), while a smaller percentage had a master's 29(11.9%) or doctorate/high school degree 3(1.2% each). In terms of occupation, private sector employees 128(52.5%) made up the largest group, followed by those in the public sector 56(23.0%), students 33(13.5%), self-employed individuals 20(8.2%), and unemployed respondents 7(2.9%). Geographically, most participants resided in the Eastern Region 144(59.0%), followed by the Western Region 37(15.2%), Southern Region 29(11.9%), Northern Region 19 (7.8%), and Central Region 15(6.1%). Regarding social media usage, the majority used it daily 155 (63.5%), while others reported using it several times a week 57(23.4%), weekly 24(9.8%), or less than once a week 8(3.3%).

	Frequency	Percent
Gender		
Female	60	24.6
Male	184	75.4
Age	1	0.4
18–24 years	26	10.7
25–34 years	84	34.4
35–44 years	116	47.5
45–54 years	17	7.0
Education Level:		
Bachelor's Degree	209	85.7
Doctorate or Higher	3	1.2
Haigh school degree	3.00	1.2
Master's Degree	29	11.9
Occupation		
Employed (Private Sector)	128	52.5
Employed (Public Sector)	56	23.0
Self-employed	20	8.2
Student	33	13.5
Unemployed	7	2.9
Region of Residence:		
Central Region	15	6.1

Eastern Region	144	59.0
Northern Region	19	7.8
Southern Region	29	11.9
Western Region	37	15.2
Frequency of Social Media Use:		
Daily	155	63.5
Less than once a week	8	3.3
Several times a week	57	23.4
Weekly	24	9.8
Total	244	100.0

Table 2. Descriptive Statistics of Demographic Data for Respondents

According figure 1 The majority of respondents preferred Snapchat (38), followed by TikTok (34) and LinkedIn (29). Other platforms, including Twitter (27), Instagram (26), and Facebook (26), had similar levels of preference, while other platforms (17) were less commonly chosen.

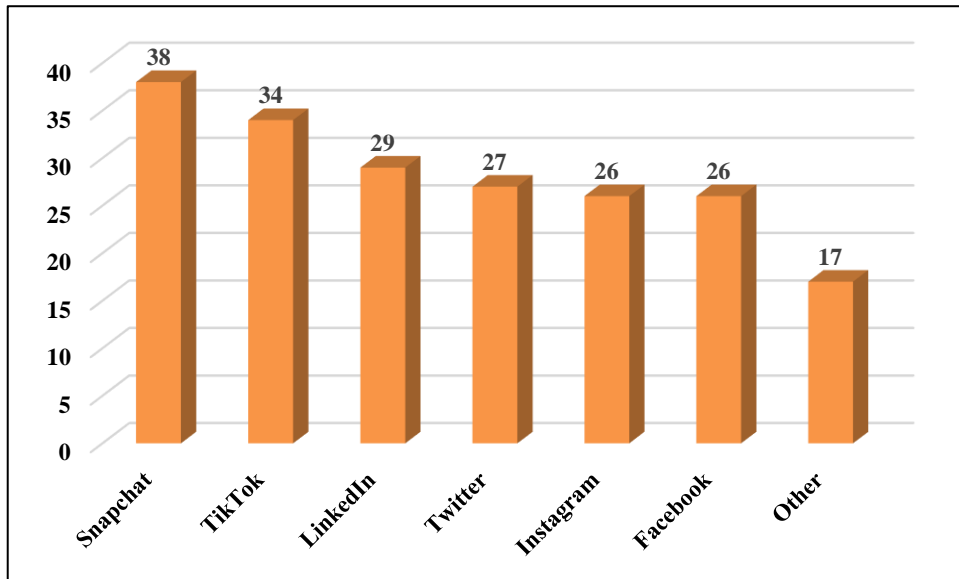


Figure 1. Preferred Social Media Platforms

In table 3 The mean score for Corporate Social Responsibility (CSR) was 3.61 (SD = 0.79), which also falls under the medium importance category. This reflects that respondents perceive CSR as moderately important, aligning it with other variables like brand image improvement and customer satisfaction. The highest mean score was for the item "Improve workers' engagement, increase customer satisfaction, and brand reputation," with a mean of 3.73 (SD = 0.90), indicating it was considered the most important among the study variables and categorized as high importance. This suggests that respondents place significant emphasis on enhancing employee engagement and improving customer satisfaction as key drivers of brand reputation. On the other hand, the lowest mean score was for the item "Improve brand image, increase customer satisfaction, increase employees' performance," with a mean of 3.52 (SD = 0.97), indicating medium importance. Although still considered important, this variable was ranked lower compared to others, suggesting it was seen as a somewhat less prioritized factor.

Items	Mean	SD	Rank	Importance
Improve brand image, increase customer satisfaction, increase employee's performance	3.52	0.97	4	Medium
Positive Increase employee engagement, attract potential customers, increase customer loyalty	3.57	0.94	3	Medium
Positive Improve workers' engagement, increase customer satisfaction and brand reputation	3.73	0.90	1	High
Positive Increase in financial profits, improve brand image, decrease the risk	3.64	0.88	2	Medium
Corporate Social Responsibility	3.61	0.79	3	Medium

Table 3. The Mean, SD and rank for Corporate Social Responsibility

In Table 4, the mean score for Disease Awareness was 3.63 (SD = 0.69), which falls under the medium importance category. This indicates that respondents perceive disease awareness as moderately important, aligning it with other variables like Corporate Social Responsibility (CSR). The highest mean score was for the item "by pharma companies increases unnecessary patient visits to physicians", with a mean of 3.69 (SD = 0.92), indicating it was considered the most important among the disease awareness variables and categorized as high importance. This suggests that respondents see the influence of pharmaceutical companies in increasing unnecessary visits as a key factor in disease awareness. The lowest mean score was for the item "is most effective when sponsored by a non-profit organization alone", with a mean of 3.56 (SD = 0.92), indicating medium importance. Although still considered relevant, this variable was ranked lower compared to others, suggesting it was seen as a somewhat less prioritized factor in disease awareness.

Items	Mean	SD	Rank	Importance
Disease awareness will lead to improved patients' knowledge. It results in patient recognition of genuine ailments	3.61	0.94	7	Medium
Disease awareness by pharma companies increases unnecessary patient visits to physicians	3.69	0.92	1	High
Disease awareness motivates patients to look for further information as directed by the advertisement	3.68	0.95	2	High
Disease awareness enhances patient-physician relationship by encouraging more communication	3.67	0.88	3	High
Disease awareness encourages patients to ask physicians about treatment and tests	3.62	0.90	5	Medium
Disease awareness increases physician workload	3.59	0.9	8	Medium

		0		
Disease awareness will result in increased prescriptions for promoted categories	3.63	0.91	4	Medium
Disease awareness is most effective when sponsored by a pharmaceutical company alone	3.61	0.88	6	Medium
Disease awareness is most effective when sponsored by a non-profit organization alone	3.56	0.92	9	Medium
Disease awareness	3.63	0.69		Medium

Table 4. The Mean, SD and Rank for Disease Awareness

Table 5 presents the mean scores, standard deviations (SD), ranks, and importance levels for the variables related to Product Promotion. The item "The effectiveness of promoting local pharmaceutical products increases when advanced methods are used" ranked the highest with a mean of 3.67 (SD = 0.83), indicating high importance. This suggests that respondents consider the use of advanced promotional methods as a key factor in enhancing the effectiveness of product promotion. The remaining items were ranked in the medium importance category, with mean scores ranging from 3.57 (SD = 0.88) to 3.62 (SD = 0.82). The overall mean for Product Promotion was 3.61 (SD = 0.70), reflecting its general medium importance in the study. This indicates that while product promotion is considered valuable, it is seen as moderately important in the context of the study variables.

Items	Mean	SD	Rank	Importance
1.Promoting local pharmaceutical products is crucial to introducing the quality of local pharmaceutical products	3.60	0.86	3	Medium
2.Local pharmaceutical products are being promoted effectively in the era of digital marketing	3.62	0.82	2	Medium
3.The effectiveness of promoting local pharmaceutical products increases when advanced methods are used	3.67	0.83	1	High
4.Promoting local pharmaceutical products is a responsible and ethical business practice that benefits our society	3.59	0.85	4	Medium
5.Promoting local pharmaceutical products is crucial to boosting local pharmaceutical industries	3.57	0.88	5	Medium
Product Promotion	3.61	0.70		Medium

Table 5. The Mean, SD and rank for Product Promotion

Table 6 presents the mean scores, standard deviations (SD), ranks, and importance levels for the variables related to Social Media Marketing (SMM). The highest mean score was for the item "

activities are effective in engaging with customers interested in local pharmaceutical products" with a mean of 3.73 (SD = 0.83), indicating medium importance. This suggests that respondents consider social media marketing an effective tool for engaging potential customers interested in local pharmaceutical products. Items such as "SMM efforts positively influence the reputation of local pharmaceutical products" (Mean = 3.68, SD = 0.87) and "platforms help share information about local pharmaceutical products" (Mean = 3.67, SD = 0.85) were categorized as high importance. These items reflect the significant role of social media in enhancing the awareness, reputation, and information sharing related to local pharmaceutical products. The overall mean for Social Media Marketing was 3.67 (SD = 0.68), reflecting its high importance in the study. This indicates that respondents perceive social media marketing as a powerful tool in promoting and improving the visibility of local pharmaceutical products.

Items	Mean	SD	Rank	Importance
platforms help share information about local pharmaceutical products	3.63	0.87	6	Medium
activities are effective engaging with customers interested in local pharmaceutical products	3.69	0.82	2	High
Social media marketing enhances the awareness of local pharmaceutical products	3.66	0.87	4	Medium
efforts positively influence the reputation of local pharmaceutical products	3.68	0.87	3	High
helps create a positive brand image for local pharmaceutical products	3.63	0.86	5	Medium
platforms help share information about local pharmaceutical products	3.67	0.85	4	High
activities are effective engaging with customers interested in local pharmaceutical products	3.73	0.83	1	Medium
Social Media Marketing	3.67	0.68		High

Table 6. The Mean, SD and rank for Social Media Marketing

Table 7 presents the mean scores, standard deviations (SD), ranks, and importance levels for the variables related to the Success Marketing of E-Pharmacy. The highest mean score was for the item "Medicines are easily available online" with a mean of 3.68 (SD = 0.90), indicating high importance. This suggests that respondents consider the availability of medicines online as a critical factor for the success of e-pharmacy marketing. Other items were ranked under medium importance, with mean scores ranging from 3.56 (SD = 0.87) to 3.66 (SD = 0.86). The overall mean for the Success Marketing of E-Pharmacy was 3.62 (SD = 0.70), reflecting its medium importance in the study. This indicates that while e-pharmacy marketing is considered important, it is viewed as moderately important compared to other variables in the study. The findings suggest that aspects such as product availability, online ordering ease, and home delivery are seen as valuable but not the highest priorities in e-pharmacy success.

Items	Mean	SD	Rank	Importance
receive attractive discounts and other offers while purchasing medicines online	3.56	0.87	7	Medium
I don't face any difficulties at the time of placing the order through the application / website	3.65	0.90	3	Medium
Medicines are easily available online	3.68	0.90	1	High
I trust the authenticity of medicinal products sold online	3.58	0.92	5	Medium
Home delivery of products makes it easy and time saving to buy medicines	3.64	0.87	4	Medium
The products sold on online pharmacy stores are 100 percent genuine	3.57	0.93	6	Medium
Online pharmacies allow me to compare different products and then make the right choice	3.66	0.86	2	Medium
Success marketing of e-pharmacy	3.62	0.70		Medium

Table 7. The Mean, SD And Rank for Success Marketing of E-Pharmacy

Multicollinearity Test

Multicollinearity occurs when independent variables are highly correlated with one another (Henseler et al., 2014). This condition can lead to distorted estimates of regression coefficients and affect the statistical significance of test results (Hair et al., 2006). As noted by Tabachnick and Fidell (2013), multicollinearity can also increase the standard error of the coefficients, potentially rendering them statistically insignificant. To assess multicollinearity issues, the study analyzed the correlation matrix, followed by evaluating the variance inflation factor (VIF) and tolerance values for the independent variables. Hair et al (2011) indicate that multicollinearity is a concern when the VIF value exceeds five and the tolerance value falls below 0.20. Table 4.19 indicates the tolerance and variance inflation factors (VIF) latent constructs.

	Tolerance	VIF
Corporate Social Responsibility	0.35	2.88
Disease awareness	0.23	4.33
Product Promotion	0.25	3.97
social media marketing	0.21	4.69

Table 8. Tolerance and Variance Inflation Factors (VIF) Latent Constructs.

The data in Table (8) indicates that there was no multicollinearity between the latent variables as all VIF values were less than 5, and tolerance values exceeded 0.20 Hair et al (2011). Therefore, multicollinearity is not a problem in this study.

Hypotheses Testing

The Multiple Regression Analysis results reveal that Social Media Marketing (SMM), Product Promotion, and Disease Awareness significantly impact the promotion of local pharmaceutical products. SMM showed the strongest influence with a B value of 0.422 and a p-value of 0.000, followed by product promotion with a B value of 0.168 and a p-value of 0.007, and disease awareness with a B value of 0.274 and a p-value of 0.000. Corporate Social Responsibility (CSR)

was not supported as a significant factor, with a B value of 0.081 and a p-value of 0.083. The overall regression model was highly significant with an R of 0.877 and an R^2 value of 0.77, indicating that 77% of the variance in local pharmaceutical product promotion is explained by the predictors, The F-statistic of 199.64 and a p-value of 0.00 confirm the model's statistical significance.

HYP.		B	Std. Error	t	Sig.	Decision
	(Constant)	0.206	0.140	1.467	0.144	
H1	Corporate Social Responsibility	0.081	0.047	1.741	0.083	Rejected
H2	Disease awareness	0.274	0.065	4.196	0.000	Supported
H3	Product Promotion	0.168	0.062	2.701	0.007	Supported
H4	social media marketing	0.422	0.069	6.102	0.000	Supported

Table 7. Multiple Regression Analysis Results for testing the Impact of Digital Marketing on Promoting the Local Pharmaceutical

$$R = 0.877, R^2 = 0.77 = F = 199.64, Sig. = 0.00$$

Discussion and Conclusion

The results of this study reveal important insights into the effectiveness of digital marketing strategies in promoting local pharmaceutical products, Social Media Marketing (SMM), Product Promotion and Disease Awareness were identified as significant factors influencing the promotion of these products, with SMM showing the most substantial impact, This suggests that leveraging digital platforms to engage with consumers and increase awareness is crucial for the success of local pharmaceutical products in the digital age, SMM's strong influence emphasizes the growing role of social media in reaching and engaging a broader audience, which is critical for increasing product visibility and consumer trust, Product promotion was also found to be an essential factor emphasizing that effective promotional strategies are necessary to boost sales and customer engagement, Disease awareness another key predictor, was shown to significantly impact consumer decision-making, The role of disease awareness advertising in educating consumers about health conditions and available treatments has proven to be a vital component of digital marketing in the pharmaceutical industry, These findings align with the broader understanding that digital marketing strategies, when used effectively can greatly enhance consumer knowledge and encourage informed purchasing decisions, In contrast Corporate Social Responsibility (CSR) did not show a significant impact on the promotion of local pharmaceutical products in this study, Although CSR is important for building long-term brand reputation and trust the immediate influence of CSR on marketing success appears to be less pronounced in the context of digital marketing, This suggests that while CSR practices are valuable for fostering goodwill and aligning with consumer values they may not have the same direct measurable effect on product promotion as more targeted marketing efforts, such as SMM and product promotion.

Recommendation

Enhance Disease Awareness Campaigns: Given the significant impact of disease awareness on the promotion of local pharmaceutical products pharmaceutical companies should invest in targeted disease awareness campaigns, these campaigns can motivate patients to seek more information which enhances the overall awareness and recognition of pharmaceutical products.

Utilize Advanced Methods in Product Promotion: The data suggests that the effectiveness of promoting local pharmaceutical products increases when advanced methods are used, Companies should adopt innovative and technology driven promotional strategies such as digital marketing interactive content and virtual consultations.

Strengthening Social Media Marketing: Social Media Marketing (SMM) shows a strong influence on product awareness and reputation; pharmaceutical companies should prioritize their presence on popular social media platforms to engage with their target audience.

Focus on Improving the Online Shopping Experience: As indicated by the high importance placed on the availability of medicines online e-pharmacies should focus on making the online shopping experience seamless.

Foster Positive Relationships Between Patients and Physicians: The effectiveness of marketing in enhancing patient-physician communication emphasizes the importance of creating an environment that encourages collaboration.

Leverage Attractive Offers and Discounts: Since promotions like attractive discounts and offers significantly influence purchasing decisions. e-pharmacies should consider offering exclusive discounts, bundled products and limited-time promotions.

Declaration of Conflicting Interests: The Authors declare that there is no conflict of interest.

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