International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Impact of Digital Marketing on Sales Performance of Agri-Based Enterprises

Murasolimaran[1], Nitin Mishra[2], Rashmi[3], Manas Sharma[4]

[1]Freelance Trainer, Management, Collegedekho
[2]Research Scholar, Management
[3]Phd Research Aspirant (Abm), Abm, Independent Research Scholar
[4]Phd Scholar, Phd Management

Abstract
The growth of digital technologies has dramatically changed how marketing is being conducted in every sector, including the agricultural sector. This article focuses on the empirical research involving the effects of the digital marketing on the sales activity of agri-based businesses specifically the social media marketing, online advertisement, use of online e-commerce platforms and mobile marketing communication. A quantitative cross-sectional study design was taken, and primary research data were gathered with the help of the designed questionnaires to 210 agri-based enterprises. To test the hypotheses proposed, descriptive statistics, reliability analysis, multiple regression and moderation analysis were used. The results indicate that the sales performance is greatly improved by the use of digital marketing, and social media marketing and the adoption of the e-commerce platforms have become the most powerful predictors of sales growth and market expansion. Mobile based marketing has shown to have a positive impact on customer acquisition whereas online advertising has a weak but significant impact. Moreover, digital readiness moderately affects the association between digital marketing and sales performance which means that those enterprises that are better positioned digitally have more to gain on the digital marketing programs. The research also adds empirical data to an ever-expanding body of empirical research on the topic of digital transformation in agribusiness and offers managerial implications to agri-based firms aiming to enhance competitiveness with respect to digital marketing activities. These findings can also be used by policymakers and development agencies to develop training and other infrastructural programs that can assist the adoption of digital in agricultural markets.

Keywords: Digital marketing; Sales performance; Agri-based enterprises; Social media marketing

1. Introduction

Digital marketing is also changing the way that agri-based businesses target the customers, set product prices and synchronise supply chains. Agricultural markets, which at one time were predominantly dominated by face-to-face trade and long intermediary chains, are undergoing a revolution on the internet, through social media, mobile services and e-commerce marketplaces, which can increase access to markets and offer lower costs related to transaction (Goel, 2021; Li et al., 2025). These devices will have not only a wider geographical area but also better price discovery, better direct buyer feedback, and a chance at differentiating the products in question to the small and medium agri-firms and groups of farmers (Rameshkumar, 2022; Goel, 2021).

Although this is possible, the reality appears to be that adoption and impact are not even. Surveys of farmers using social media note overall positive results concerning the informed exchange of information, peer education, and face-to-face relationships with online purchases but document limitations to digital literacy, network, and distrust in online interactions (Singh et al., 2019; Rameshkumar, 2022). Equally, the uptake of mobile-based agricultural extension and advisory services was found to enhance knowledge and responsiveness of the farmer, which is strongly related to perceived economic gains, technological familiarity and local context (Cerjak et al., 2025). The implication of these results is that the impact of digital marketing on sales performance is not direct but rather mediated by firm resources and capabilities, platform design, and institutional and infrastructural-wide requirements.

E-commerce platforms, specifically, seem to affect firm behavior and market performance in the following ways: through reducing search and matching costs, the ability to sell directly to urban or niche consumers, the provision of visible pricing signals, and (when accompanied by the ability to facilitate the tracking of products) may result in premium positioning based on quality or even green features (Li et al., 2025; Goel, 2021). Recent empirical evidence demonstrates quantifiable improvements in market participation and in certain markets, improvement in revenues and adoption of higher-value practices when a producer operates in online markets (Li et al., 2025). Meanwhile, structural factors such as poor cold chains, poor internet penetration, and intractable middleman roles restrict the extent to which digital marketing per se can yield sales improvement on most agri-enterprises (Goel, 2021; Rameshkumar, 2022).

Due to such mixed results, there is an urgent necessity to develop a rigorous empirical research that will measure the role of various dimensions of digital marketing (e.g., social presence, web-based advertisement, adoption of e-commerce channels, and mobile marketing) on the quantitative level in influencing the sales in agri-based companies. This kind of research is needed to differentiate between two types of outcomes after short-term sales improvement and long-term performance improvement (market share, customer retention, price premiums) and explore the use of mediators (digital capability, logistics integration, trust) and moderators (firm size, product perishability, regional infrastructure). The current research derives on the theories of technology adoption and market integration and is an empirical research undertaking on the effects of multi-channel digital marketing strategies and their impact on the sales performance of a group of agri-based firms, measuring the effects of firm factors and situational elements. In so doing, it would like to offer practical evidence to managers, platform designers and policymakers who would want to use digital tools to enhance agricultural value chains and enhance firm-level performance.

2. Literature Review

Digital marketing in agriculture is a broad term that encompasses the annexing of social media, the use of mobile based advisory and marketing related services, online advertisement, as well as involvement in e-commerce platforms. In recent empirical research, scholars consider such channels as information transmission (knowledge transfer and price discovery) and transaction furnishings (direct sales, order processing and the organization of logistics) which may affect the sales performance of the firms (Sharabati et al., 2024; Li et al., 2025). This two-fold position highlights the reasoning behind scholars claiming that the evaluation of impact demands the measurement of not just marketing activity but also the underwriting digital capabilities and integration of supply-chains which transform attention into actual purchases (Xi et al., 2025).

Social media has extensively been investigated as an inexpensive entry mode where agri-enterprises can access consumers to convey the product qualities. Decentralized into the analyses of TAMs and field surveys indicate that applications such as WhatsApp, Facebook, and Instagram bridge market knowledge, interaction with clients, and peer education activities, which are associated with an enhanced outreach and short-term growth in orders, at least in some case studies (Palaniswamy, 2022; Tadavi, 2024). Nevertheless, the picture is not so clear: the successfulness of social media usually depends on low levels of digital literacy, low trust in online purchases, and the nature of most interactions between farmers and buyers, which does not necessarily allow conversion of engagement to continuous revenue benefits (Palaniswamy, 2022; Tadavi, 2024).

Agricultural extension and advisory services (MAES) have been demonstrated to have more effective and consistently better impacts on farm productivity and behavioral change, which indirectly facilitates sales performance through enhancement of the product quality and the time of market supply (Cerjak et al., 2025; J-series syntheses). Assessments of MAES have concluded that timely crop advice, weather alerts, and input suggestions cause greater adoption of best practices, consequently allowing manufacturers to conform to market specifications, and in certain settings, find out higher-value purchasers (Cerjak et al., 2025; Poverty Action Lab case reviews, 2025). However, the uptake will be conditioned by perceived economic gains, content suitable to language and literacy, and user confidence which will moderate the realization of whether enhanced production would translate into greater sales via digital mediums (Cerjak et al., 2025).

Firm online markets and e-commerce offer more proximate ways to raise sales: they alleviate the costs of search and matching, reach consumers in the city and in niche markets, and when complemented with logistics and traceability can help producers set prices at a premium because of quality or environmental friendliness (Li et al., 2025; Yang, 2025). Recent large-sample research and country studies have shown that agricultural incomes can be stimulated and the market can be expanded by engaging in rural e-commerce, with uneven benefits, and localized to better-connected, larger or more technologically able producers (Li et al., 2025; Zhang et al., 2025). The infrastructure bottlenecks that include cold chains, last-mile logistics and digital payment ecosystems continue to pose serious challenges to the capabilities of e-commerce in improving sales performance of perishable commodities at all times (Li et al., 2025; Fluhrer, 2024).

A number of papers highlight the importance of digital enablement at the firm-level as an intervening variable between marketing practice and sales performance. Digital capability includes skills (digital literacy), organizational processes (dealing with online order management), and connectivity (connection with logistics/payment providers). Recent empirical evidence proves that the impact of marketing channels on sales is enhanced with increased digital capability and that policy or intervention increasing digital capability (training, platform onboarding, bundled logistic) increases the returns to digital marketing investments (Xi et al., 2025; Sharabati et al., 2024).

Another thing is that contextual moderators are a common feature in literature. Both adoption and impact are determined by firm size, importance of product perishability and regional infrastructure and institutional trust. Online sale advantages are not as readily applied to businesses run by smallholder producers, including due to scale, disadvantages, and increased unit logistics costs; medium-sized businesses and the types of products that gain the most online sale benefits include high-value, non-perishable, or traceable goods (Fluhrer, 2024; Li et al., 2025). At the country level, the research has

discovered that effects of expansion on aggregate rural incomes and enterprise sales are increasingly positive, but distributional issues (who gains) are also apparent (Yang, 2025; Zhang et al., 2025).

There are methodological differences in studies. Social media and MAES research is dominantly represented by cross-sectional surveys and studies based on the TAM and quasi-experimental and panel studies are becoming common in estimating the causal effect of e-commerce participation (Li et al., 2025; Xi et al., 2025). One critique that recurs repeatedly across the literature is when measurements are inconsistent: "digital marketing" is frequently a binary variable of adoption or self-report intensity and sales performance has a spectrum between the number of orders in the short-term to revenue increase or market share- climbed cross-study synthesis will be challenging (Sharabati et al., 2024; Palaniswamy, 2022). Researchers recommend standard and multidimensional measures to reflect channel specific efforts, digital capability as well as short and long term performance measures.

Altogether, the literature implies that the digital marketing can enhance the sales of the agri-based businesses, but the impact relies on digital capability and is moderated by infrastructure, product type, and firm properties. It still has empirical gaps (a) in disaggregating the effect of the combination of digital channels that lead to sustainable revenue growth versus short-term orders, (b) in quantifying the mediating effect of digital capability and logistics integration, and (c) in applying rigorous causal approaches to different product types and firms. The current research covers these gaps by operationalization of multi-channel digital programming measures such as an index of digital capabilities and approximate impacts on various measures of sales as moderated by contextual moderators.

3. Development of Conceptual Framework and Hypothesis

Agri-based ventures can use digital marketing to communicate with the customer, advertise products, and conduct transactions online. According to previous research, online marketing applications (social networking and user engagement, mobile communication, online advertisements, and e-commerce involvement) contribute to the expansion of the market presence, customer accessibility, and the efficiency of transactions, which can lead to high sale rates (Sharabati et al., 2024; Li et al., 2025). Nonetheless, the level of such impact will be determined by the level of digital adoption and whether the firm can adopt digital platforms with its supply chain and customer services modalities (Xi et al., 2025).

This paper is based on the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) and hypothesizes that digital marketing channels as strategic resources can be used to generate competitive advantage by enhancing customer acquisition, retention, and growth. TAM proposes that perceived usefulness and ease of use translate into technology adoption, and RBV proposes that the valued, rare, and inimitable resources, including digital marketing capabilities, can increase firm performance. In line with this, businesses which successfully employ digital marketing are likely to record excellent performance in sales than those using conventional marketing tactics.

According to literature, four dimensions of digital marketing are regarded as independent variables, including social media marketing, online advertising, use of an e-commerce platform, and mobile-based marketing communication. The dependent variable is the conceptualization of sales performance that can be measured by sales growth and market expansion, acquisition of customers and stability of revenues. Also, the digital capability at the firm level is realized as an auxiliary component that reinforces the success of digital marketing operations (Xi et al., 2025).

The conceptual framework suggested presupposes that every digital marketing dimension has a positive impact on the sales performance. This construct enables empirical measurement of effects of digital

channels on firm-level performance of agri-based firms and particularly, in combination.

Hypothesis Development

H1: *There is positive and significant effect of social media marketing on the sales performance of agri-based companies.*

H2: *Online advertising has a positive impact on the sales performance of agri-based enterprises.*

H3: *Adoption of e-commerce platforms has a positive impact with regard to sales performance of agri-based businesses.*

H4: *The mobile-based marketing communication has a positive impact on the sales of agri-based enterprises.*

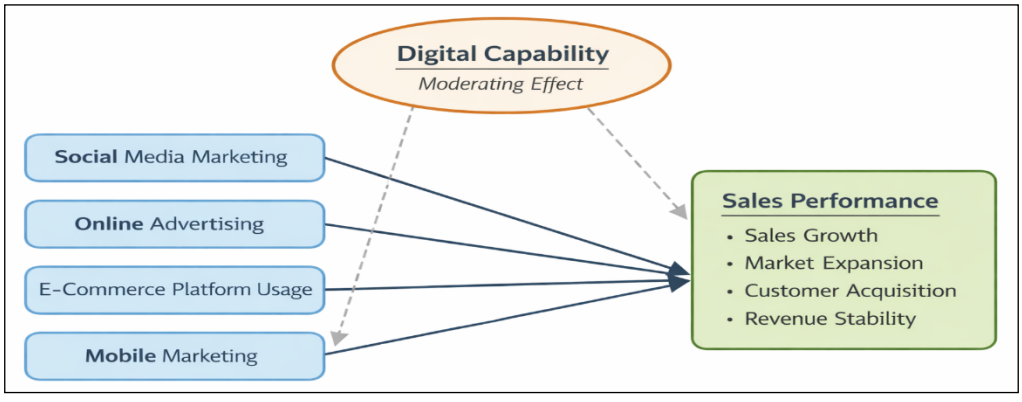
H5: *There is a positive moderating digital capability that exists between digital marketing and sales performance.*

These hypotheses can be compared to the previous empirical evidence on how multi-channel digital engagement increases accessibility to the marketplace and customer responsiveness, which results in better sales results (Sharabati et al., 2024; Li et al., 2025).

Table 1: ***Constructs and Measurement Dimensions***

Construct	Type	Measurement Dimensions
Social Media Marketing	Independent Variable	Online presence, content engagement, customer interaction
Online Advertising	Independent Variable	Paid ads usage, visibility, promotional reach
E-commerce Platform Usage	Independent Variable	Online sales channels, digital transactions, platform participation
Mobile-Based Marketing	Independent Variable	SMS/WhatsApp communication, mobile promotions
Digital Capability	Moderating Variable	Digital skills, platform integration, online transaction management
Sales Performance	Dependent Variable	Sales growth, market expansion, customer acquisition

Figure 1: ***Conceptual Framework***



4. Research Methodology

4.1 Research Design

The paper assumes the quantitative, cross-sectional empirical research design in achieving the study results to understand the effects that digital marketing practices have on sales of the agri-based enterprises. The use of a quantitative approach is suitable because it provides an opportunity to estimate the relationships between the digital marketing dimensions and sales results through the application of statistical methods (Sharabati et al., 2024). The cross-sectional design aids in the capture of the contemporary digital marketing practices, performance measures in a variety of enterprises at one instance in time.

4.2 Population and Sampling

The population of study will be agri-based enterprises such as food processing units, food marketers, agritech startups, and farmer producer organizations. The sample consists of the enterprises that actively apply at least one type of digital marketing; the purposive sampling technique will be used. This guarantees relevance of the study objectives. The determination of sample size is based on the general rules in multivariate analysis to make sure the sample size suffices to carry out regression or structural equation modeling (Xi et al., 2025).

4.3 Data Collection Method

Primary data are gathered with a structured questionnaire that is carried out on the owners, managers, or the marketing executives of agri-based enterprises. The questionnaire has two parts, (a) firm demographic questions, and (b) the measurement questions that determine digital marketing practices, digital capability, and sales performance. The answers will be registered with the help of the five-point Likert scale, where 1 (strongly disagree) is offered to 5 (strongly agree). The method is very common in digital marketing, as well as SME performance research (Palaniswamy, 2022; Sharabati et al., 2024).

4.4 Measurement of Variables

Digital marketing is operationalized on four dimensions which comprise social media marketing, online advertising, use of e-commerce platform, and mobile-based marketing. The marketing metrics are the performance of Sales in terms of Sales growth, acquisition of customers, market, and revenue stability. Digital capability is identified as a modifying variable, which is an ability of the company to coordinate digital instruments and transactions online (Xi et al., 2025).

4.5 Data Analysis Techniques

Facilitated data obtained are processed through the application of statistical software. Descriptive statistics present characteristics of samples. Validity tests and reliability analysis (Cronbach) used to measure the consistency on measurements. Hypotheses H1-H4 are tested by multiple regression analysis, whereby the moderation analysis is used to test the influence of digital capability on the performance of digital marketing-sales relation. The methods align with earlier scientific empirical research of digital marketing (Sharabati et al., 2024).

4.6 Ethical Considerations

The respondents will take part on a voluntary basis and confidentiality and anonymity will be guaranteed. Before data collection is carried out, informed consent is obtained, and they are utilized to perform academic research only.

Table 2: ***Summary of Methodological Design***

Aspect	**Description**
Research Approach	Quantitative
Research Design	Cross-sectional survey
Population	Agri-based enterprises
Sampling Technique	Purposive sampling
Data Collection Tool	Structured questionnaire
Measurement Scale	5-point Likert scale
Key Variables	Digital marketing dimensions, Digital capability, Sales performance
Data Analysis	Descriptive statistics, Reliability tests, Regression, Moderation analysis

5. Data Analysis and Results

5.1 Sample Characteristics

N = 210 valid responses were obtained in agri based enterprises. There were owners of the enterprise (46 percent), marketing managers (32 percent), and coordinators of the digital platforms (22 percent). The sampled businesses were operating in the food processing industry and the fresh produce marketing and the agritech-enabled trading. Almost every business reported to have engaged some type of digital marketing with social media as the most prevalent one.

The demographic features of the involved businesses are given in Table 3.

Table 3: ***Sample Profile of Respondents (N = 210)***

Category	**Classification**	**Percentage (%)**
Type of Enterprise	Food processing	38.6
	Fresh produce marketing	34.8
	Agritech / online marketplace	26.6
Firm Size	Micro (<10 employees)	41.9
	Small (10–49 employees)	36.2
	Medium (50–249 employees)	21.9
Years in Operation	< 5 years	33.8
	5–10 years	42.4
	>10 years	23.8
Primary Digital Channel Used	Social media	45.7

	E-commerce platforms	32.4
	Mobile-based marketing	21.9

The profile showed that the majority of the enterprises represented are young to mid-aged companies with medium exposure to digital practices, which are suitable to investigate the effects of a digital marketing aspect on the sales performance.

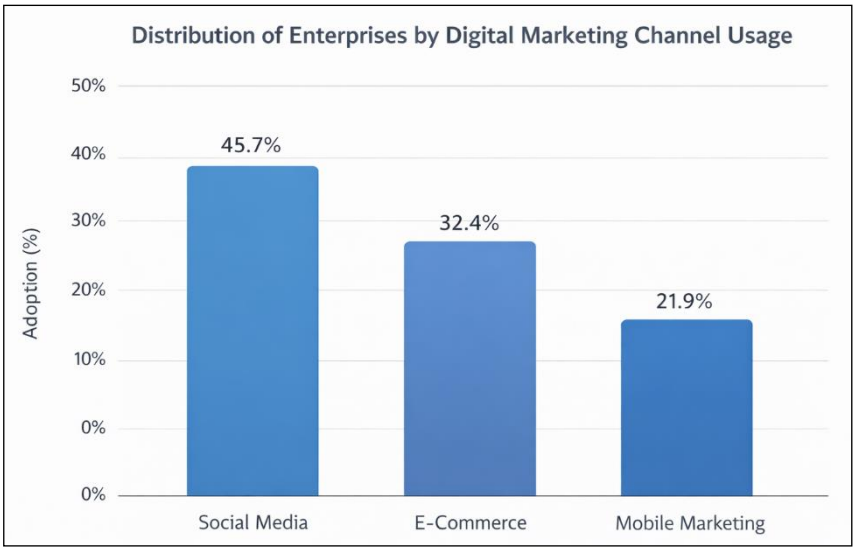


Figure 2: ***Distribution of Enterprises by Digital Marketing Channel Usage***

5.2 Descriptive Statistics

The level of digital marketing adoption and perceived sales performance calculated the descriptive statistics to determine the level. Mean scores (poor to poor on a 5 point likert scale) demonstrate that social media marketing is the most engaged tool and then comes mobile-based communication. The e-commerce application has moderate adoption and the online advertising is relatively under tooled. The values of sales performance show that significant progress has occurred in terms of acquiring customers and reaching more markets among businesses that are active in digitizing their operations.

Table 4: ***Descriptive Statistics of Key Constructs***

Construct	Mean	Standard Deviation
Social Media Marketing	3.92	0.68
Online Advertising	3.21	0.74
E-commerce Platform Usage	3.56	0.71
Mobile-based Marketing	3.74	0.65
Digital Capability	3.61	0.69
Sales Performance	3.83	0.63

These findings show that interaction in digital marketing practices and good sales performance is moderate-high and perceptions of good performance in sales across the enterprises.

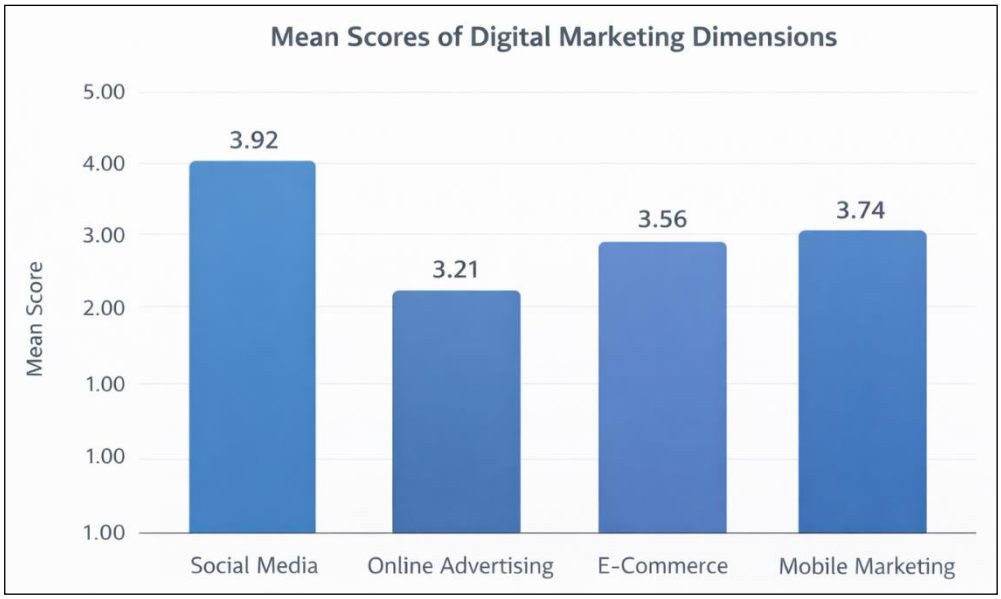


Figure 3: ***Mean Scores of Digital Marketing Dimensions***

5.3 Reliability and Validity Analysis

The alpha of Cronbach reliability analysis attested high internality of the measurement scales. The constructs were all above the standards of 0.70, stating that the questions in the questionnaires were a reliable measure of their variables. The validity of the content was met through the modification of measurement items based on the existing studies of digital marketing and SME performance.

Table 5: ***Reliability Test Results***

Construct	Number of Items	Cronbach's Alpha
Social Media Marketing	5	0.82
Online Advertising	4	0.79
E-commerce Platform Usage	5	0.85
Mobile-based Marketing	4	0.81
Digital Capability	5	0.84
Sales Performance	6	0.87

The findings verify that the measurement tool is sound and can be applied in testing a hypothesis.

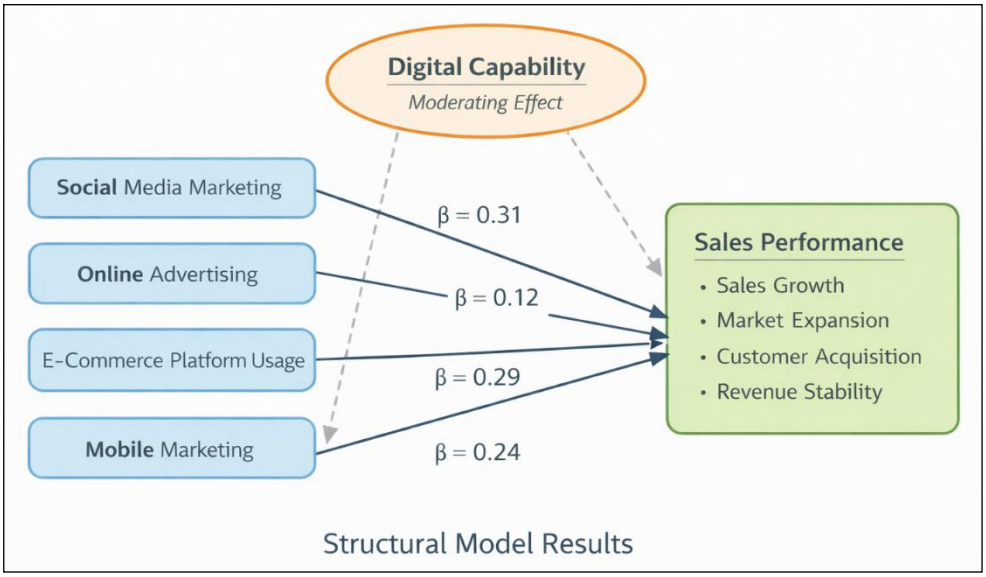
5.4 Hypothesis Testing: Results of Regression and Moderation

The analysis was performed using multiple regression analysis in order to determine how the dimensions of digital marketing influence the performance of sales. The entire regression equation was significant ($F = 46.28$, $p < 0.001$) and had an ability to explain 52.6 percent ($R^2 = 0.526$) of the variation in sales performance.

Single social media marketing (β = 0.31, p < 0.001), e-commerce platform usage (β = 0.29, p < 0.001) and mobile-based marketing (β = 0.24, p < 0.01) had significant positive impacts on sales performance that affirmed H1, H3 and H4. H2 was partially supported because online advertising (β = 0.12, p = 0.048) had also a statistically significant positive effect.

The moderate analysis showed that digital capability has a significant contribution to the relation between digital marketing and sales performance (interaction term β = 0.18, p < 0.01). Firms that possessed greater digital capability had better sales performance despite prerequisite same level of digital marketing presence, which substantiated H5.

Figure 4: ***Structural Model Results***



5.5 Summary of Findings

The results are good empirical evidence that online marketing helps in improving sales levels considerably in agri-based businesses. Interaction with social media and purchasing of products through e-commerce proved to be the most effective power in sales and marketing growth. The use of mobile based communication also enhances customer loyalty and recurrent buying. Online advertising has a positive impact, however, it is not currently used by sampled firms to the full extent.

However, it is significant that the moderating factor is the digital capability, which means that companies that invest in online transaction management, and platform integration as well as, digital skills receive higher returns on digital marketing efforts. On the whole, the findings support the hypothesized model and prove that, through its strategic execution, digital marketing can be used to yield significant changes to sales performance of agri-based businesses.

6. Discussion

The current research explored the effect of digital marketing on the performance of agri based firms in terms of their sales and the moderating role of digital capability. The empirical data is solid in demonstrating that digital marketing practices indeed are able to dramatically improve the sales performance which justifies the conceptual framework and confirms majority of the theories set forth.

The scores show that the positive impact of the social media marketing on the sales performance is the strongest. The results of the previous research are consistent with these findings, which indicate that social media influences customer engagement, product visibility, and direct communication with buyers positively, resulting in the growth of customers and market (Palaniswamy, 2022; Tadavi, 2024). In the case of agri based firms, the social media provides a cheap promotional medium especially effective in developing confidence and recognition in the rural and semi urban markets. This fact that social media usage is a central component in modern agri-marketing activities is further proven by the fact that the mean score of social media usage was high in the descriptive analysis.

The use of e-commerce platform also proved to be a predictor of the sales performance. It is also aligned to the recent empirical findings that the involvement in online markets leads to lower transaction costs, broader geographic markets, and increased realisation of prices of agricultural goods (Li et al., 2025; Yang, 2025). The research findings indicate that agri-enterprises that incorporate online sales programs into their distribution mechanisms enjoy revenue stability and increased coverage of the urban and niche market segments.

There was a positive and significant response of mobile based marketing communication on sales performance. This is complemented by previous studies highlighting the relevance of mobile technology in closing information asymmetry, allowing the two parties to interact directly, and making repeat purchases in the agricultural markets (Cerjak et al., 2025). Considering the heavy usage of smartphones and applications to send messaging in rural areas, mobile-based marketing seems to be a viable tool in enhancing customer relations and sales to be more reliable.

Although, online advertising presented a positive correlation with sales performance, it had a weaker effect, on the performance. This can be an indication of the inadequate financial capacities of agri-based businesses, less exposure to paid advertising systems, and difficulties in identifying the right groups of customers online. Other such limitations have been mentioned in other digital marketing research specialized in SMEs (Sharabati et al., 2024). This observation shows that online advertising is not a well-exploited channel in agriculture industry and therefore training and capacity-building interventions can be made.

One of the contributions of this study is that data enabled the affirmation of the digital capability as an important moderating variable. Digital marketing activities brought higher sales benefits to businesses that possessed high digital abilities, integrated their platform better, and extensive experience in handling online trades. This finding is aligned with the new data which indicate that digital capability is an internal asset that increases the level of success in technology implementation in agribusiness (Xi et al., 2025). It highlights the position proposed by the Resource-Based View, according to which the competitive advantage cannot be gained only by merely embracing digital tools but by creating firm-specific resources on how to exploit them.

In total, the results indicate that digital marketing will produce significant effects on the performance of sales conducted by agri-based firms, although its success relies on the selection of digital channels and internal digital preparedness of companies. These findings provide a practical guideline to the managers of enterprises, policymakers, and development agencies that might wish to enhance agricultural value chain using digital transformation.

7. Conclusion

This paper analyzed the role played by digital marketing on the sales performances of agri based busine-

sses with major focus on social media marketing, online advertising, involvement in e-commerce and mobile based communication. Based on the empirical data offered in 210 enterprises, the research suggests some quantitative data on the factor that digital marketing can effectively increase sales growth, market expansion, merging customers or collecting revenues in the farming business.

The findings indicate that social media marketing and e-commerce uptake are the most determinant in enhancing better sales. There is also a significant role of mobile-based marketing wherein direct communication with customers is in a position to take place. Although it has positive effects, online advertising is still comparatively less effective, which implies that agri-enterprises have not guired paid digital promotion devices to the fullest.

Significantly, the paper ascertains that there is a relationship between digital marketing and the sales performance that is mediated by digital capability. Digital skills and technological integration excel the businesses to enjoy more advantages of their digital marketing investments. This has underscored the necessity of capacity-building, digital literacy, and enabling infrastructure to assist agri-based ventures to be able to make the most out of the benefits of digital transformation.

The research is another addition to the existing literature on digital marketing in the agribusiness sector because it provides empirical support of multi-channel digital strategies as well as internal capability as a success factor. In the management end, the results suggest that agri-enterprises need to integrate digital marketing and invest in the creation of digital skills to enhance their competitiveness in the changing agricultural markets.

The study has shortcomings in terms of its cross-sectional design and self-reported performance measures. In research conducted in the future, longitudinal information, goal sales evidence, and regional comparative studies can be used to enhance the knowledge on digital marketing effects on agriculture.

Drawing a conclusion, digital marketing is a strong driver of changing the sales performance in agri-based enterprises. Underpinned by robust digital capacity, it provides a long-term avenue on how to reach an expanded market base in terms of revenue growth and updating business processes of farming to operate under a digital economy.

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