

**E-MARKETING FRAMEWORK AMONG FARMER-TRADERS: AN APPLICATION OF EXPLORATORY FACTOR ANALYSIS****Noel V. Mausisa**

ORCID Number: 0009-0002-3700-6863

**Jay-ar Ahon**

ORCID Number: 0009-0002-2734-149X

**Joanna Mae E. Padua**

ORCID Number: 0009-0004-1718-9302

**Joan G. Lumasag**

ORCID Number: 009-0002-2047-0547

**Gaudencio G. Abellanosa**

ORCID Number: 0000-0003-1648-5797

**Cherrelyn P. Campaña**

ORCID Number: 0000-0003-4885-2360

Graduate School of College of Development Management, University of Southeastern Philippines,  
Philippines

---

**ABSTRACT**

Digital marketing, also known as e-marketing, has become a norm rather than a trend in the digital age, and it has revolutionized the way businesses operate worldwide, including in the agriculture industry. This study investigates the factors that contribute to the successful implementation of an e-marketing framework among farmer-traders. Using convenience sampling, data were collected from 150 farmer-traders who have implemented e-marketing strategies in their businesses. By applying Exploratory Factor Analysis (EFA), the results identified key factors of the e-marketing framework, such as the significance of establishing a strong online presence, optimizing the online customer experience, engaging and adapting to customers' needs, differentiating oneself from competitors through digital marketing, and advancing customer convenience and business growth. The findings emphasize the significance of utilizing e-marketing to enhance farmers' marketing efforts, increase customer engagement and relationships, and achieve business growth in a competitive digital marketplace. Furthermore, this study's findings provide a beneficial framework for farmers seeking to develop their e-marketing strategies and enhance their business performance.

**Keywords:**

E-Marketing, Farmer-Traders, Exploratory Factor Analysis, Online Presence, Customer Experience, Customer Engagement, Customer Relationships, Competitiveness, Business Growth

---

**INTRODUCTION**

Digital transformation has made e-marketing a vital tool for businesses to connect with customers, promote their products or services, and build a competitive advantage in the marketplace. E-marketing has emerged as one of the most significant factors in maintaining a competitive advantage for any business, regardless of its size. (Sheikh, Shahzad, & Ishak, 2016). Hence, Jones-Garcia and Touboulis (2022) stressed the adoption of new Internet-related technologies becomes essential for the survival and success of every industry in the current digital age. In the agricultural sector, Lilavanichakul (2020); Rameshkumar (2022) argued that the relevance of digital marketing has increased significantly in recent times. It has opened new avenues for farmers to connect with consumers, establish better connections between buyers and sellers, expand their businesses, and empower agricultural startups.

E-marketing of agricultural products refers to the use of digital channels and online platforms for promoting and selling farm produce directly from producers to end-consumers or businesses, thereby eliminating the need for intermediaries and enhancing the accessibility, convenience, and profitability of the agricultural sector (Bhosage, 2018). E-commerce has become a valuable tool for agribusiness, helping farmers to sell their products online and benefiting from cost savings, improved efficiency, and increased access to information, more choices, and value for consumers, while requiring them to keep well-informed of the latest farming technologies to succeed (Sengar, Gharewal, Patidar, & Jain, 2020). The utilization of e-commerce technologies in agriculture is revolutionizing the distribution of food by small and medium-sized producers, enhancing consumer access to local food, and facilitating sales negotiations among market vendors (Glaros, Thomas, Nost, Nelson, & Schumilas, 2023). Thus, FAO (2020) has recognized that digital technologies offer unique opportunities to enhance food production and trade, particularly for smallholder farmers, and to contribute to the attainment of the Sustainable Development Goals (SDGs).

Additionally, the Internet has become a game-changer in marketing because it enables users to reach wider audiences more effectively and cost-efficiently (Grabowska and Schwarzl, 2015), offers flexibility and speed (Jayarani and Kishor, 2022), and maximizes product sales (Dwivedi et al., 2021). The acceptance of e-marketing or digital marketing for agricultural products is increasing worldwide due to its ability to address major challenges throughout the agricultural supply chain, from production to consumption (Bose & Kiran, 2021). Due to the COVID-19 pandemic, many businesses have also been compelled to adopt e-commerce to maintain their financial performance and sustain their businesses by adopting various technological platforms and digital marketing strategies to reach their customers (Gao et al., 2023). The pace of adoption of e-commerce increased significantly because of COVID-19 restrictions, (Galanakis, 2020). There has been a shift in demand from traditional retail to digital or e-commerce transactions (OECD, 2020).

However, despite marketing opportunities provided by the Internet, the adoption of technology by smallholder farmers can be challenging, particularly for those who are elderly and have less formal education, and in some countries, the accessibility and availability of Internet infrastructure may serve as a potential barrier (Galanakis, 2020). While e-marketing still seems to be a challenge for some farmers because of their lack of knowledge about the methodology, indifference to using and accepting new methods, and inaccessibility to various tools to implement it (Rameshkumar, 2022). In the Philippines, the use of digital technologies remains below its potential, with the country's digital adoption generally lagging behind its neighboring middle-income countries, wherein nearly 60 percent of households in the country do not have access to the internet and are therefore unable to gain the benefits of digitalization (World Bank, 2020). It has been acknowledged that reliable internet speed is a "prerequisite" for any plan to boost the digital economy (PwC Philippines, 2020).

Moreover, World Bank (2021) reported that Filipino farmers faced poor earnings and limited job options for decades, due to inadequate production inputs, lack of machinery and technology, limited finance, and poor market access. OECD (2019) revealed that economic and social conditions like rural-urban divides, low income, limited access to education, and an aging population can hinder digital commerce participation due to factors like low connectivity, lack of digital skills, low trust, and limited access to online payment methods, which can be addressed by policy interventions. This means many farmers continue to rely on traditional marketing channels, such as middlemen and local markets, to sell their products.

To address these issues, there is a need for research that can identify the key factors that contribute to the successful implementation of an e-marketing framework among farmer-traders, particularly when digital marketing strategies influence the purchase intention of Filipino consumers (Astoriano et al., 2022) and almost everyone uses the Internet to buy products and services, which is why every marketer must be present online (Grabowska and Schwarzl, 2015). Therefore, it is of the utmost importance to understand what effective digital marketing strategies are used by farmers to sell their agricultural products and help boost their business growth.

### OBJECTIVES

Specifically, the study sought to identify the underlying factors that influenced the adoption and application of the successful implementation of e-marketing among farmer-traders and developed a comprehensive e-marketing framework for farmer-traders based on the identified factors.

### LITERATURE REVIEW

**Strong Online Presence.** In the agricultural sector, Bhosage (2018) recognized that e-marketing holds great potential for farmers and agricultural businesses, offering them numerous benefits due to its 24/7 availability, global reach, and low-cost strategies, making it a highly useful tool for selling agricultural products. E-marketing in the agriculture industry aims to reach a large audience cost-effectively and measurably (Sharma, 2021). The emergence of e-commerce has brought forth a new era that disrupts traditional modes of operation and significantly impacts business production, operations, and marketing strategies (Huang & Benyoucef, 2013). Social media and digital marketing offer significant opportunities to businesses by reducing costs, enhancing brand awareness, and increasing sales (Dwivedi et al., 2021). Similarly, online platforms provide enormous opportunities for businesses to accomplish their marketing goals at comparatively low costs (Ajina, 2019). Thus, a study by Reddy (2021) found that by utilizing digital marketing platforms, producers can increase their selling prices and decrease their marketing expenses. He added that Internet services like digital marketing are gaining popularity among producers as a means of expanding their consumer base, which is more cost-effective and efficient than conventional marketing, hence, farmers can benefit greatly from e-marketing.

**Optimizing the Online Customer Experience.** E-marketers should prioritize consumer perception of value in addition to improving the quality of electronic services (Chang, Wang, et al., 2009) and understand consumer behavior (Grabowska and Schwarzl, 2015) to properly utilize e-marketing. Alavion, et al. (2016) recommends highlighting user-friendliness and advantages to the users to encourage people to use e-marketing strategies and thereby accelerate the adoption of e-marketing. To ensure the success of digital marketing, (Bala & Verma, 2018) stressed the importance of understanding which social media sites are preferred by the target audience of the business. Moreover, according to a global survey conducted by Visa in July 2020, 70% of Filipino respondents would continue to use digital payment platforms even after the pandemic has passed (BusinessMirror, 2020). Thus, to boost digital penetration in the Philippines, World Bank (2020) suggested the country needs to upgrade its digital infrastructure, make use of digital payment and online platforms, enhance the efficiency of the logistics system, and improve the business environment. To optimize customer experience, (Hafsi & Assar, 2020) suggests business owners should: (1) understand customers, (2) enable selling activities, (3) manage customer touchpoints, and (4) integrate digital technologies. Through these, customer interaction is heightened, thenceforth improving customer experience (Chatzopoulos & Weber, 2021).

**Customer Engagement and Adaptability.** Digitalization in agricultural product marketing increases consumer and producer engagement, allowing customers to make educated purchases without bias and producers to improve product quality based on feedback (Bose & Kiran, 2021). Digital technologies' constant evolution constitutes a major determinant of how consumers and businesses engage. Consumers' ability to interact socially with other customers who share their viewpoints, express their displeasure, and investigate alternative possibilities has increased (Opote, Abdullah Promise, et al. 2022). Because of the scope and diversity of online customers, online platforms continue to be significant, which means that e-marketing efforts should concentrate on a unique target market. It is about developing products and services responding to the wants of the customers (Alhider, 2018). Understanding customer online behavior is essential to making effective marketing decisions and ensuring the survival and profitability of an organization (Bheekhar, 2020). It involves comprehending the competitive market and making sure you can capitalize on significant trends to reach consumers with the ideal product at the ideal time, location, and price (Chartered Institute of Marketing, 2015). Through Digital marketing, the connection between

producers (i.e., farmers, agricultural cooperatives, and MSMEs) and consumers is closer and more accessible (Nakavachara & Sathirathai, 2021). It also strengthens the relationships of the farmers and consumers by fulfilling and satisfying their needs and wants. (Reddy, 2021). In order to boost competition based on expertise rather than price, promotion, the potential for entering new markets, and e-marketing are helpful (Arafa, 2010).

**Digital Differentiation and Customer Relationship Building.** The trend of digitalization is increasingly gaining popularity in the field of agriculture (MacPherson et al., 2022). E-marketing has emerged as one of the main forces behind sustaining an organization's competitive advantage (Eid & El-Gohary, 2013). Technology can help a business maintain its relevance in the market. It not only changes the organization's way of business, but also it can create great opportunities for marketing products. (Jones & George, 2020). With the rise of community websites, many businesses have started to find the best ways to utilize these sites in building strong relationships and communications with users and enable friendly and lasting relationships encouraging the development of online brand communities (Ibrahim and Aljarah, 2018). The practical benefits of using digital marketing should be to increase profits and sales, as well as to strengthen trusting relationships with customers. (Nabieva, 2021). An online presence, especially on social media platforms, increases a business's attraction to consumers and fosters trust between buyers and sellers (Marketing Evolution, 2022). In addition, advances in technology enable businesses to develop one-on-one relationships with customers (Nguyen, Le, Quach, Thaichon, & Ratten, 2021). Customers, both individual and business, are more demanding than ever because they can easily access an infinite number of worldwide rivals vying for their business with just one click (Frost and Strauss, 2016).

**Boosting Customer Convenience and Business Growth.** E-commerce technologies in agriculture are transforming food distribution by small and medium-sized farmers, improving consumer access to local food, and accelerating market vendor sales negotiations (Glaros et al., 2023). E-retailers must understand what constitutes service convenience in an e-commerce business environment to effectively grow a loyal customer base and increase profitability (Jiang et al, 2011). Online service quality is a consumer's evaluation of products or services sold online (Leo et. al, 2022). When the service quality criteria deemed most important are fulfilled or surpassed, customers are more likely to be satisfied with their online shopping experience (Kong & Chow, 2015). The most important step in providing more convenient e-services is identifying key convenience dimensions and their specific elements. This will assist e-retailers in understanding where they should concentrate their efforts to achieve a competitive edge (Jiang et al, 2011). Because of years of exposure to marketing tactics, consumers are now more intelligent and demanding, and marketers will only get better at providing value to customers (Strauss & Frost, 2016). Customers should be able to see the value of the processes and make sure that they have a positive effect on production and related operations that influence the business and consumer behavior (Alhider, 2018). Utilizing these digital technologies can facilitate inclusive development by expanding economic opportunities for every stakeholder (World Bank, 2020).

## METHODOLOGY

This section presents a discussion of the research methodology employed in the study, including the data collection method, data analysis method, and ethical considerations.

### Research Method

The study utilized a quantitative research design, which involved the collection and analysis of numerical data. To achieve the research objectives of this study, an exploratory factor analysis (EFA) was conducted. EFA is a statistical technique used to identify the underlying factors or dimensions that explain the variation in a set of observed variables (Stevens, 2012). In this study, EFA was used to explore the key factors that influenced the adoption and application of e-marketing tools among farmer-traders.

**Data Collection Method**

A survey was conducted to collect data from 150 farmer-traders using convenience sampling, where respondents were selected based on their availability and willingness to participate. The sample was drawn from various places, particularly in Davao region and Gensan City to ensure a diverse representation of farmer-traders. The structured survey questionnaire was designed based on a review of relevant literature on e-marketing adoption among farmer-traders who have implemented e-marketing strategies in their businesses. The questionnaire consisted of closed-ended questions that were designed to gather information on the different factors of e-marketing adoption and application, such as the types of e-marketing tools used, the perceived benefits of e-marketing, and the strategies for implementing e-marketing. The questionnaire was distributed through online platforms and in-person surveys.

**Data Analysis Method**

The data analysis method used in this study involved exploratory factor analysis (EFA) to identify and analyze the underlying factors that contribute to an effective e-marketing framework among farmer-traders. This method reduces the number of initial variables by combining correlated variables into a single factor and separating non-correlated variables into separate factors (Kim & Mueller, 1978). The Kaiser-Guttman rule was used to determine the number of factors to retain, where factors with an eigenvalue greater than 1 were retained. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were used to assess the adequacy of the sample size and the correlation between variables, respectively. Moreover, a scree plot was also generated to determine the number of factors to retain visually. The EFA was performed using a principal component analysis extraction method with a varimax rotation. The resulting factors were interpreted and labeled based on their underlying factors and contributions to the e-marketing framework. Based on the results of the EFA, a comprehensive e-marketing framework for farmer-traders was developed. The framework was designed to guide farmer-traders and other stakeholders in the effective use of e-marketing tools and strategies.

**Ethical Considerations**

This study took ethical considerations into account, including obtaining informed consent from respondents and ensuring the anonymity and confidentiality of the data collected. The study adhered to ethical guidelines during data analysis and reporting. This included refraining from disclosing any identifiable information about the respondents.

**RESULTS AND DISCUSSION**

This section presents the results of the data analysis and provides an interpretation of the findings.

**KMO and Bartlett's Test.** As shown in the table 1 below, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .793, indicating that the data collected was suitable for conducting factor analysis. Bartlett's Test of Sphericity yielded a significant chi-square value of 2620.142 with 435 degrees of freedom and a p-value of .000, indicating that the correlations between the variables in the dataset were sufficiently large for factor analysis. In summary, the data met the necessary requirements to perform exploratory factor analysis.

**Table 1. KMO and Bartlett's Test**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		.793
<b>Bartlett's Test of Sphericity</b>	Approx. Chi-Square	2620.142
	df	435
	Sig.	.000

**Scree Plot.** Figure 1 represented the eigenvalues of the factors extracted in exploratory factor analysis, showing a steep drop up to the fifth factor, after which the curve flattened out, and the decision was made to retain only the first five factors with eigenvalues greater than one (1), indicating that these factors accounted for most of the variability in the data and were therefore retained for further analysis.

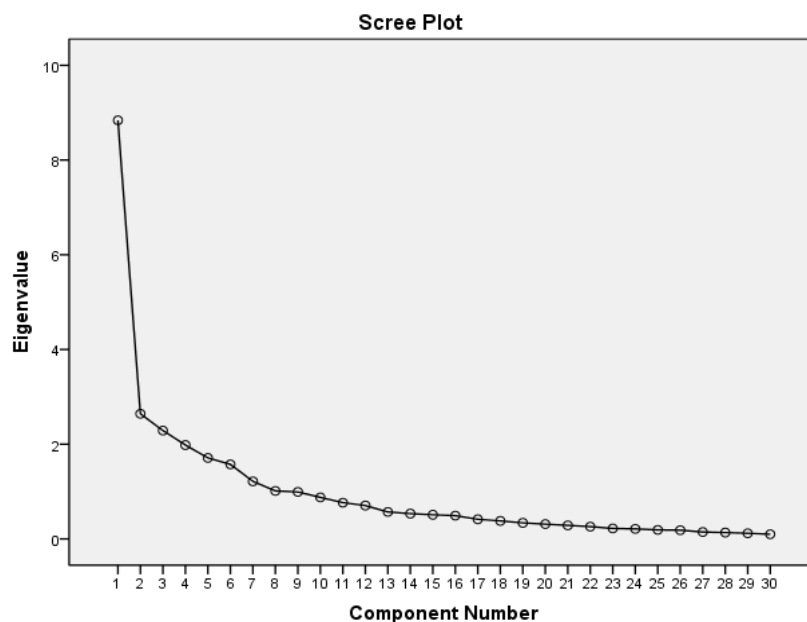


Figure 1: Scree plot

**Total Variance Explained.** The 2 table presented the results of the component extraction, indicating the variance explained by each factor. A five-factor solution was derived from the analysis. Factor 1 had the highest eigenvalue of 8.839, explaining 29.463% of the total variance. This indicated that Factor 1 captured a significant portion of the variability in the data. Factors 2, 3, and 4 also contributed substantially to the variance explained, with eigenvalues of 2.643 (8.809% of variance), 2.288 (7.627% of variance), and 1.981 (6.604% of variance), respectively. Meanwhile, Factor 5 had the lowest eigenvalue of 1.711, explaining 5.703% of the total variance. This implied that Factor 5 captured a relatively smaller amount of the underlying variation in the data compared to the other factors.

Table 2. Total Variance Explained

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	8.839	29.463	29.463
2	2.643	8.809	38.272
3	2.288	7.627	45.898
4	1.981	6.604	52.503
5	1.711	5.703	58.205

Extraction Method: Principal Component Analysis

The results found five distinct factors with their respective themes: Factor 1 - Strong Online Presence, Factor 2 - Optimizing the Online Customer Experience, Factor 3 - Customer Engagement and Adaptability, Factor 4 - Digital Differentiation and Customer Relationship Building, and Factor 5 - Boosting Customer Convenience and Business Growth.

**Factor 1 - Strong Online Presence.** Table 3 has revealed the factor loadings for five attributes that were related to a strong online presence. The attribute with the highest loading was Item 11 (selling products from home or farm without physically traveling to a market), with a loading of 0.792. Item 2 (ensuring quality and proper packaging) had a strong association with the loading of 0.710. Item 6 (creating engaging content) showed a relatively strong association with loading of 0.666. In contrast, Items 12 (considering e-marketing strategies as cost-effective) and 19 (using online marketplaces) had weaker associations with loadings of 0.512 and 0.505, respectively. This factor emphasizes the importance of farmer traders adopting e-marketing tools to establish an effective online presence, including prioritizing product quality, branding, and engaging content, and leveraging online marketplaces to connect with a wider audience. Bhosage (2018) recognized that e-marketing holds great potential for farmers and agricultural businesses, offering them numerous benefits due to its 24/7 availability, global reach, and low-cost strategies, making it a highly useful tool for selling agricultural products. Thus, a study by Reddy (2021) found that by utilizing digital marketing platforms, producers can increase their selling prices and decrease their marketing expenses. He added that Internet services like digital marketing are gaining popularity among producers as a means of expanding their consumer base, which is more cost-effective and efficient than conventional marketing, hence, farmers can benefit greatly from e-marketing.

**Table 3. Factor 1 - Strong Online Presence**

Factor	Attributes	Loadings
Strong Online Presence	(11) I sell my products from the comfort of my home or farm without physically traveling to a market.	.792
	(2) I make sure that my products sold online are quality and well-packaged.	.710
	(6) I create engaging content to help me establish my brand and attract more customers.	.666
	(12) I consider e-marketing strategies a more cost-effective approach to promoting and selling products than traditional marketing methods.	.512
	(19) I use online marketplaces to help me connect with more buyers and sellers.	.505

**Factor 2 - Optimizing the Online Customer Experience.** Table 4 displayed the factor loadings for six attributes that were related to optimizing the online customer experience. Items 28 and 29 showed strong associations with loadings of 0.710, indicating the importance of providing cashless payment options and ensuring a positive online transaction experience. Item 21 demonstrated a substantial association with the loading of 0.656, emphasizing the necessity of possessing the required resources for effective e-marketing implementation. Item 25 had a moderately strong association with the loading of 0.655, highlighting the significance of fast delivery processes. Items 24 and 23 exhibited weaker associations, with loadings of 0.567 and 0.547, respectively. Item 24 related to offering wholesale and retail prices, while Item 23 emphasized the importance of maintaining rapport with customers. This factor stresses the importance of creating a positive and seamless online customer experience including cashless payment options, positive transaction experiences, necessary resources for e-marketing, fast delivery processes, and customer rapport. To optimize customer experience, (Hafsi & Assar, 2020) posits that business owners should: (1) understand customers, (2) enable selling activities, (3) manage customer touchpoints, and (4) integrate digital technologies. Through these, customer interaction is heightened, thenceforth improving customer experience (Chatzopoulos & Weber, 2021).

**Table 4. Factor 2 - Optimizing the Online Customer Experience**

Factor	Attributes	Loadings
<b>Optimizing the Online Customer Experience</b>	(28) I provide cashless payment options for online customers' convenience.	.710
	(29) I make sure that customers have a good experience thru online transactions.	.710
	(21) I have the necessary resources (e.g., internet connectivity, devices, software) to implement e-marketing strategies.	.656
	(25) I take the importance of a fast delivery process.	.655
	(24) I offer wholesale and retail prices for my online customers.	.567
	(23) I maintain good rapport and connections with my online customers to build credibility.	.547

**Factor 3 - Customer Engagement and Adaptability.** Table 5 presented the factor loadings for attributes related to customer engagement and adaptability. The results showed that Item 10 had the highest loading (0.708), indicating a strong association with incorporating customer demand and feedback to enhance supply chain management and meet customer needs. Item 26 had a substantial association (0.639) and emphasized the importance of adapting and developing products based on consumer needs. Item 16 showed a moderate association (0.554) and suggested the use of video marketing to effectively showcase products and services. Item 30 exhibited a relatively weaker association (0.522) and highlighted the usefulness of online platforms for building partnerships and collaborations. Item 22 also had a weaker association (0.518) and reflected the practice of offering incentives to foster customer loyalty. This factor captures the importance of businesses engaging customers and adapting to their needs and preferences in the development and implementation of e-marketing strategies. Thus, digitalization in agricultural product marketing increases consumer and producer engagement, allowing customers to make educated purchases without bias and producers to improve product quality based on feedback (Bose & Kiran, 2021). Understanding customer online behavior is essential to making effective marketing decisions and ensuring the survival and profitability of an organization (Bheekhar, 2020). It involves comprehending the competitive market and making sure you can capitalize on significant trends to reach consumers with the ideal product at the ideal time, location, and price (Chartered Institute of Marketing, 2015). Through Digital marketing, the connection between farmers and consumers is closer and more accessible (Nakavachara & Sathirathai, 2021). It also strengthens the relationships of the farmers and consumers by fulfilling and satisfying their needs and wants. (Reddy, 2021).

**Table 5. Factor 3 - Customer Engagement and Adaptability**

Factor	Attributes	Loadings
<b>Customer Engagement and Adaptability</b>	(10) I incorporate customer demand and feedback gathered online to enhance our supply chain management processes and meet their needs.	.708
	(26) I adapt and develop my products depending on the consumer's needs.	.639
	(16) I use video marketing (e.g., vlogs, and testimonials) to help me showcase my products and services more effectively.	.554
	(30) I find online platforms helpful in building partnerships and collaborations with other businesses.	.522
	(22) I offer freebies or discounts to encourage regular online customers and develop loyalty.	.518



**Factor 4 - Digital Differentiation and Customer Relationship Building.** Table 6 presented the factor loadings for attributes related to digital differentiation and customer relationship building. The results showed that Item 14 had the highest loading (0.816), indicating a strong association with using e-marketing platforms to reduce reliance on middlemen. Item 8 exhibited a substantial association (0.756), emphasizing the importance of diversifying sales channels through e-marketing. Item 15 showed a moderate association (0.684), suggesting the development of a responsive website for enhanced accessibility. Item 7 displayed a relatively weaker association (0.653), highlighting the utilization of e-marketing strategies for differentiation. Item 20 exhibited a weaker association (0.532), reflecting the practice of openly sharing production processes to build customer trust. This factor emphasizes the significance of leveraging digital platforms, diversifying channels, and maintaining transparency for successful digital differentiation and customer relationship building. Hence, e-marketing has become a valuable tool for agribusiness, helping farmers to sell their products online and benefiting from cost savings, improved efficiency, and increased access to information, more choices, and value for consumers, while requiring them to keep well-informed of the latest farming technologies to succeed (Sengar et al., 2020). With the rise of community websites, many businesses have started to find the best ways to utilize these sites in building strong relationships and communications with users and enable friendly and lasting relationships encouraging the development of online brand communities (Ibrahim and Aljarah, 2018). The practical benefits of using digital marketing should be to increase profits and sales, as well as to strengthen trusting relationships with customers. (Nabieva, 2021). An online presence, especially on social media platforms, increases a business's attraction to consumers and fosters trust between buyers and sellers (Marketing Evolution, 2022).

**Table 6. Factor 4 - Digital Differentiation and Customer Relationship Building**

Factor	Attributes	Loadings
<b>Digital Differentiation and Customer Relationship Building</b>	(14) I use e-marketing platforms to reduce our reliance on middlemen.	.816
	(8) I diversify my sales channels thru e-marketing to reduce my reliance on a single market or distribution channel.	.756
	(15) I develop a responsive website/page for my farm business to make it easily accessible to online customers.	.684
	(7) I leverage e-marketing strategies to recognize my farm business from competitors and reach a wider target audience.	.653
	(20) I openly share our production processes and practices online to build customer trust and confidence.	.532

**Factor 5 - Boosting Customer Convenience and Business Growth.** Table 7 presented the factor loadings for attributes related to boosting customer convenience and business growth. The results showed that Item 13 had a high loading of 0.758, indicating the provision of free delivery services within the local community to enhance customer convenience and satisfaction. Similarly, Item 17 exhibited a substantial loading of 0.757, highlighting the handling of shipping and delivery of products sold online as a strategy to increase sales and revenue. Item 4 showed a moderate association with a loading of 0.614, suggesting the use of mobile devices to promote products and send real-time marketing messages. Item 18 had a weaker association with the loading of 0.529, emphasizing the utilization of e-marketing to connect with other farmers and traders and expand the network reach. This factor underscores the importance of offering convenient services and leveraging digital platforms for business growth. E-retailers must understand what constitutes service convenience in an e-commerce business environment to effectively grow a loyal customer base and increase profitability (Jiang et al, 2011). Online service quality is a consumer's evaluation of products or services sold online (Leo et. al, 2022). When the service quality criteria deemed most important are fulfilled or surpassed, customers are more likely to be satisfied with their online shopping experience (Kong & Chow, 2015). Thus, the utilization of e-commerce technologies in agriculture is revolutionizing the distribution of food by small and medium-sized producers, enhancing consumer access to local food, and facilitating sales negotiations among market vendors (Glaros et al., 2023).

**Table 7. Factor 5 - Boosting Customer Convenience and Business Growth**

Factor	Attributes	Loadings
<b>Boosting Customer Convenience and Business Growth</b>	(13) I provide free delivery services within my local community to enhance customer convenience and satisfaction.	.758
	(17) I handle shipping and delivery of products sold online to increase sales and revenue.	.757
	(4) I use my mobile devices to promote my products and send real-time marketing messages.	.614
	(18) I use e-marketing to connect with other farmers and traders, which helps me expand my network reach.	.529

### STUDY FRAMEWORK

The study framework outlines five key components of an e-marketing strategy for farmer-traders: effective online presence, optimizing the online customer experience, customer engagement and adaptability, digital differentiation and customer relationship building, and boosting customer convenience and business growth. These components are intended to help farmer-traders improve their online marketing efforts and build stronger relationships with their customers in the digital space.



**Figure 2. E-marketing Framework among Farmer-Traders**

### CONCLUSION

Given the challenges currently facing the agriculture industry, it is crucial to integrate digital technology to increase productivity, enhance consumer satisfaction, and decrease transaction costs. The agriculture industry encounters various challenges, including low productivity, high transaction costs, and limited market access, which can be surmounted by incorporating digital technology into marketing practices. This study identified the fundamental factors of the e-marketing framework for farmer-traders using exploratory factor analysis. The findings of this study shed light on the essential factors for successful e-marketing in agriculture, such as a strong online presence, optimizing the online customer experience, customer engagement and adaptability, digital differentiation and customer relationship building, and boosting customer convenience and business growth.

The first factor, which is Strong Online Presence, highlights the importance of creating an effective digital presence to expand and reach a wider audience of consumers. The second factor, Optimizing the Online Customer Experience, emphasizes the need for a positive and seamless online customer experience. Customer Engagement and Adaptability, the third factor, emphasizes the significance of engaging customers and adapting to their ever-changing demands and preferences. The fourth factor, Digital Differentiation and Customer Relationship Building highlights the significance of standing out from competitors by providing distinctive digital experiences and developing strong customer relationships. Lastly, the fifth factor, Boosting Customer Convenience and Business Growth emphasizes the importance of offering customers convenient and efficient services to foster business growth.

The integration of digital marketing and technology has the potential to improve and expand the opportunities and performance of the agriculture industry. The findings of this study can be beneficial for individuals in the agricultural industry, policymakers, and researchers who are considering implementing digital marketing strategies.

### REFERENCES

- Ajina, A. S. (2019). The perceived value of social media marketing: An empirical study of online word-of-mouth in Saudi Arabian context. *Entrepreneurship and Sustainability Issues*, 6(3), 1512.
- Alavion, S. J., Allahyari, M. S., Al-Rimawi, A. S., & Surujlal, J. (2016). Adoption of Agricultural E-Marketing: Application of the Theory of Planned Behavior. *Journal of International Food & Agribusiness Marketing*.
- Alhider, A. (2018). The Impact of Customer Satisfaction and Loyalty on E-Marketing: Moderating Effect of Perceived Value. *marketing*, 46.
- Arafa, S. S. (2010). *Marketing Information Systems*. Dar al-Raya.
- Astoriano, L., Gerona, J. A., & Marzan, J. C. (2022). The Impact of Digital Marketing on Customer Buying Intention of Customers in the Philippines. *Journal of Business and Management Studies*.
- Bala, M., & Verma, D. (2018). A critical review of digital marketing. M. Bala, D. Verma (2018). A Critical Review of Digital Marketing. *International Journal of Management, IT & Engineering*, 8(10), 321-339.
- Bheekhar, N.D. (2020). Optimising Customer Engagement Through Digital Intelligence. In: Martínez-Bhosage, S. M. (2018). E-Marketing of Agricultural Products. *International Journal of Trend in Scientific Research and Development (ijtsrd)*(Special Issue | International Conference on Digital Economy and its Impact on Business and Industry), 70-73. doi:https://doi.org/10.31142/ijtsrd18675
- Bose, S. C., & Kiran, R. (2021). Digital marketing: a sustainable way to thrive in competition of agriculture marketing. *Bioinformatics for agriculture: High-throughput approaches*, 135-144.
- Briggeman, B. C., & Whitacre, B. E. (2008). Farming and the Internet: Factors Affecting Input Purchases Online and Reasons for Non-Adoption.
- Briones, R. M. (2021). Philippine agriculture: Current state, challenges, and ways forward.

- BusinessMirror (Producer). (2020). Post-Covid, Pinoys sticking to digital payments, says poll. Retrieved from <https://businessmirror.com.ph/2020/07/17/post-covid-pinoys-sticking-to-digital-payments-says-poll/>
- Chartered Institute of Marketing. (2015). Marketing and the 7Ps: A brief summary of marketing and how
- Chatzopoulos, C., & Weber, M. (2021). Digitization and Lean Customer Experience: success factors and conditions., *International Journal of Industrial Engineering and Management*, 73-84.
- Diaz, Analiza C., et al. Factors affecting farmers' willingness to adopt a mobile app in the marketing of bamboo products. Elsevier, 2021.
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., . . . Krishen, A. S. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168.
- FAO. (2020). Realizing the potential of digitalization to improve agri-food system: Proposing a new International Digital Council for Food and Agriculture. A concept note. Rome.
- Frost, R. D., & Strauss, J. (2016). E-marketing. Routledge.
- Galanakis, C. M. (2020). The food systems in the era of the coronavirus (COVID-19) pandemic crisis. *Foods*, 9(4), 523.
- Gao, J., Siddik, A. B., Khawar Abbas, S., Hamayun, M., Masukujjaman, M., & Alam, S. S. (2023). Impact of E-Commerce and Digital Marketing Adoption on the Financial and Sustainability Performance of MSMEs during the COVID-19 Pandemic: An Empirical Study. *Sustainability*, 15(2), 1594.
- Glaros, A., Thomas, D., Nost, E., Nelson, E., & Schumilas, T. (2023). Digital technologies in local agri-food systems: Opportunities for a more interoperable digital farmgate sector. *Frontiers in Sustainability*, 4. doi:10.3389/frsus.2023.1073873
- Hafez, L. , Elakkad, E. and Gamil, M. (2021) A Study on the Impact of Logistics Service Quality on the Satisfaction and Loyalty of E-Shoppers in Egypt. *Open Journal of Business and Management*, 9, 2464-2478. doi: 10.4236/ojbm.2021.95133.
- Hafsi, M., & Assar, S. (2020). Does Enterprise Architecture Support Customer Experience Improvement? Towards a Conceptualization in Digital Transformation Context. *Enterprise, Business-Process and Information Systems Modeling*, 387, 411-427. <https://doi.org/10.1016/j.jretai.2018.10.003>
- Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, 12(4), 246-259.
- Ibrahim, B., & Aljarah, A. (2018). Dataset of relationships among social media marketing activities, brand loyalty, revisit intention. Evidence from the hospitality industry in Northern Cyprus. *Data in brief*, 21, 1823-1828.
- Jennifer A. Jones and Sky V. Georges (2020) W. M. MARKETING STRATEGIES FOR FARMER ASSOCIATIONS. *Marketing*, 1009, 4Ps.
- Jiang, L., Jiang, N., & Liu, S. (2011). Consumer perceptions of e-service convenience: an exploratory
- Kim, J.-O., & Mueller, C. W. (1978). Factor analysis: Statistical methods and practical issues (Vol. 14): sage.
- Kong, C., & Chow, W. (2015). Journal of Air Transport Management On-Time Performance, Passenger Expectations and Satisfaction in the Chinese Airline Industry. *Journal of Air Transport Management*, 47, 39-47. <https://doi.org/10.1016/j.jairtraman.2015.04.003>
- Leo, G., Hurriyati, R., & Hendrayati, H. (2022). Online Food Delivery Service: The Role of e-Service Quality and Food Quality on Customer Loyalty. Paper presented at the 6th Global Conference on Business, Management, and Entrepreneurship (GCBME 2021).
- López, F., D'Alessandro, S. (eds) *Advances in Digital Marketing and eCommerce*. Springer Proceedings in Business and Economics. Springer, Cham.
- MacPherson, J., Voglhuber-Slavinsky, A., Olbrisch, M., Schöbel, P., Dönitz, E., Mouratiadou, I., & Helming, K. (2022). Future agricultural systems and the role of digitalization for achieving sustainability goals. A review. *Agronomy for Sustainable Development*, 42(4), 70.

- Marketing Evolution. (2022). What is a Digital Marketing Platform? July 20, 2022. Retrieved from <https://www.marketingevolution.com/marketing-essentials/what-is-a-digital-marketing-platform-marketing-evolution>
- Nabieva, N. M. (2021). DIGITAL MARKETING: CURRENT TRENDS IN DEVELOPMENT. *Theoretical & Applied Science*(2), 333-340.
- Nakavachara, V., & Sathirathai, S. (2021). Connecting locals to locals: Market discovery through e-commerce. *New Dimensions of Connectivity in the Asia-Pacific*, 157.
- Nguyen, T.-M., Le, D., Quach, S., Thaichon, P., & Ratten, V. (2021). The current trends and future direction of digital and relationship marketing: A business perspective. In *Developing digital marketing* (pp. 191-200): Emerald Publishing Limited.
- OECD. (2019). *Unpacking E-Commerce Business Models, Trends and Policies*. Paris: OECD Publishing.
- OECD. (2020). COVID-19 and the retail sector: impact and policy responses. *OECD Rep.*, 1-7.
- Opote, A. P., Kalu, K. I., Chukwuma-Nwuba, E. O., Ojra, J., & Iwu, C. G. (2022). Technology and Marketing: Understanding the Interface and Post-COVID-19 Implications. In *Critical Perspectives on Diversity, Equity, and Inclusion in Marketing* (pp. 208-220): IGI Global.
- PwC Philippines. (2020). Innovation and digital transformation: How are Philippine MSMEs performing? <https://www.pwc.com/ph/en/publications/ph-columns/business-unusual/2020/innovation-and-digital-transformation-how-are-philippine-msmes-performing.html>
- Rameshkumar, & N. (2022). Impact of Digital Marketing in Agricultural Sector. Coimbatore: EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal.
- Reddy, T. S. (2021). The impact of digital marketing on agricultural business in India. *NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal*| NVEO, 426-437.
- Revindran, M., Ragen, P. N. K., & Mahmud, B. (2020). A Study on Logistics Service Quality in E-Retailing amongst Online Shoppers in Kuala Lumpur. *IOP Conference Series: Materials Science and Engineering*, 780, Article ID: 062016. <https://doi.org/10.1088/1757-899X/780/6/062016>
- Eid, R., & El-Gohary, H. (2013). The impact of E-marketing use on small business enterprises' marketing success. *The Service Industries Journal*, 33(1), 31-50.
- Secretaria, N. (2019). THE E-COMMERCE REVOLUTION: STATUS, AWARENESS AND DEMOGRAPHICS OF FARMERS IN CEBU CITY. *Theoretical and Applied Science*.
- Sengar, M. S., Gharewal, M., Patidar, N., & Jain, R. (2020). FARMER'S E-MARKET. *International Research Journal of Modernization in Engineering Technology and Science*, 02(May 05, 2020).
- Sharma, A. (2021). E-Marketing in Agriculture Sector. *Just Agriculture*, Vol.1 (Issue-8).
- Sheikh, A. A., Shahzad, A., & Ishak, A. K. (2016). The mediating impact of e-marketing adoption on export performance of firms: A conceptual study. *Journal of Technology and Operations Management*, 11(1), 48-58.
- Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*: Routledge.
- World Bank. (2020). *Philippines Digital Economy Report 2020: A Better Normal Under COVID-19-Digitalizing the Philippine Economy Now*: World Bank.
- World Bank. (2021). *Reducing Poverty in Rural Areas: Increasing Productivity and Incomes of Farmers and Fisherfolk in the Philippines*. Retrieved from <https://www.worldbank.org/en/results/2021/03/31/reducing-poverty-in-rural-areas>