**THE ROLE OF SOCIAL MEDIA IN MARKETING VALUE-ADDED PRODUCTS: AN AGRIPRENEUR PERSPECTIVE**

**ABSTRACT**

In recent years, social media has significantly impacted the marketing of value-added products, prompting agripreneurs to focus on value added products. The study was conducted among agripreneurs in India, aiming to assess the influence of agripreneurs on social media marketing. Through bibliometric analysis, the need for the study has been proved. Further, the study examined factors that affect social media use for marketing value-added products, applying the Technology Acceptance Model (TAM) and measuring its impact using Heckman analysis. The study identifies perceived usefulness, compatibility, and attitude as key drivers that shape agripreneurs' intention to use social media for marketing, ultimately influencing their adoption of these platforms. Furthermore, the findings reveal that while Instagram and YouTube are gaining popularity, WhatsApp and Facebook remain the most effective platforms for marketing value-added products, particularly across different age groups.

**Keywords:** Agripreneurs, Business, Engagement rate, Facebook, WhatsApp, Value-added products, Time spent

**INTRODUCTION**

Social media marketing involves developing content for different social platforms to advertise products and connect with target audiences, and boost traffic to business. As new features and platforms continuously arise, social media marketing is in a state of constant evolution. In 2023, 82 per cent of social media marketers found that social media marketing was effective for their brand (Statistica, 2024). Over the past decade, social media platforms like WhatsApp, Instagram, and Facebook have grown tremendously (Chen & Qasim, 2021). Businesses can significantly extend their reach, enhance their visibility, and build a robust brand presence globally through social media platforms. These platforms enable companies to engage with customers, boost brand awareness, shape consumer attitudes, gather feedback, refine their products and services, and drive sales (Algharabat *et al.,* 2018; Kaur *et al.,* 2018; Lal *et al.,* 2020). Globally, 16.8% of social media users are active on Instagram, followed by 15.9% on WhatsApp. Facebook accounts for 13.6% of users, while Twitter has a smaller share with 3.1% and 2.4% of global users in Telegram (Data Reportal, 2024). Social media platforms like Facebook and Twitter enable users to follow their favorite brands and engage by commenting or posting questions about related products or services. These platforms allow businesses to monitor conversations about their brands and directly interact with consumers (Reyneke *et al.,* 2011). These platforms can influence consumer perceptions of the products and offered by business organizations (Woodcock *et al.,* 2011). WhatsApp and Instagram were the most favorite platforms for internet users. According to Data Reportal (2024), the total potential reach of ads on Facebook is 2.25 billion users. This means that marketers have the opportunity to engage with a global audience of 2.249 billion users through Facebook advertising, demonstrating the platform's extensive reach for marketing campaigns.

The present study identifies the influencing factors of social media adoption for marketing value added products by using the Technology Acceptance Model (TAM). The impact of various social media like WhatsApp, Facebook, Instagram, Twitter, Telegram, LinkedIn and so on has been analyzed. This paper helps to evoke better practices of adopting social media for marketing value added products by Agripreneurs and improve the brand of the products.

**Objectives for the Study:**

Keeping the above, the following objectives have been framed:

1. To assess the importance of social media marketing research across countries.
2. To analyze the need for social media marketing on value added products in the agribusiness sector.
3. To examine the factors driving the adoption of social media marketing on value added products by agripreneurs.
4. To evaluate the impact of social media on marketing value added products by agripreneurs.

**Model of research and hypothesis development**

The Technology Acceptance Model (TAM), developed by Davis in 1989, is a widely recognized framework for studying consumer behavior patterns in adopting new technology. TAM is a dependable and valid model frequently employed to evaluate the acceptance of various technologies. It has been utilized in numerous studies to investigate the adoption of diverse technologies, including e-learning and e-government. Many prior studies have employed TAM to explore technology adoption and usage behavior (Abdullah *et al.,* 2016; Ashraf *et al.,* 2014), yet only a few have examined how moderating variables influence the TAM framework. This model is particularly relevant to the SME context, which is characterized by fewer hierarchical management levels and, consequently, a more direct decision-making process (Thrassou & Vrontis, 2008). The current studies regard it as one of the most accepted models for understanding the adoption of new technologies (Lee *et al.,* 2003; de Graaf *et al.,* 2019).

**Table 1: Different factors in different research area on social media marketing**

|  |
| --- |
| **a) Consumer Behavior** |
| Perceived Ease of Use | Perceived ease of use plays a crucial role in shaping consumer behavior toward social media marketing, increasing their chances of adopting and actively participating on these platforms. | Dutot, 2014; Huang *et al.,* 2022; Malebran *et al.,* 2023; Tomar *et al.,* 2023; Anjum *et al.,* 2024; Lee & Fiore, 2024 |
| Perceived Usefulness | Perceived usefulness in social media marketing influences consumer behavior by encouraging them to interact with platforms they deem valuable and beneficial. | Dutot, 2014; Huang *et al.,* 2022; Malebran *et al.,* 2023; Tomar *et al.,* 2023; Anjum *et al.,* 2024; Lee & Fiore, 2024 |
| Intention to Use | Consumer behavior is influenced by the intention to use social media marketing on instant messaging platforms, which fosters greater engagement and responsiveness to marketing initiatives. | Huang *et al.,* 2022; Rana & Arora, 2022; Liao *et al.,* 2023; Malebran *et al.,* 2023; Lee & Fiore, 2024 |
| Attitude | Consumer attitude toward social media marketing encompasses their general assessment, emotions, and tendency to react positively or negatively to marketing efforts on social media platforms, thereby affecting their behavior and level of engagement with the content. | Dutot, 2014; Huang *et al.,* 2022; Zollo *et al.,* 2022; Liao *et al.,* 2023; Malebran *et al.,* 2023 |
| Trust | Consumers' confidence in brand credibility drives trust in social media marketing, the protection of their data, consistent platform policies, and involvement in decisions about changes, all of which are essential for their engagement and adoption of social media. | Dutot, 2014; Zollo *et al.,* 2022; Huang *et al.,* 2022 |
| Actual Usage | Actual consumer usage is crucial, as it influences decisions and interactions with brand ads.  | Dutot, 2014; Malebran *et al.,* 2023 |
| **b) Tourism and Hospitality** |
| Perceived Ease of Use | Social media marketing simplifies tourism by continuously updating advertising to meet ecotourists' information needs and support tourist product ratings, while engaging consumers to reach their destination. | Sugandin *et al.,* 2019; Theocharidis *et al.,* 2020; Ulfy *et al.,* 2021; El Archi & Benbba, 2023; Ahmad *et al.,* 2024 |
| Perceived Usefulness | Social media marketing is valuable for the tourism industry, especially during vacations, by effectively engaging travelers and promoting destinations. | Sugandin *et al.,* 2019; Theocharidis *et al.,* 2020; Ulfy *et al.,* 2021; El Archi & Benbba, 2023; Ahmad *et al.,* 2024 |
| Intention to Use | Social media marketing impacts ecotourism by quickly conveying information, which fosters the intention to use it for attracting tourists. | Leung & Tanford, 2016; El Archi & Benbba, 2023 |
| Attitude | A positive attitude toward social media marketing in hospitality, hotels, or tourism, along with support for tourist product ratings, significantly influences the adoption of social media. | Leung & Tanford, 2016; Sugandin *et al.,* 2019; Theocharidis *et al.,* 2020; Ulfy *et al.,* 2021; Ahmad *et al.,* 2024 |
| Actual Usage | Enhancing customers' intention to engage in social media marketing activities, such as booking through social media applications, leads to increased actual usage of social media in the hotel industry. | Theocharidis *et al.,* 2020 |
| Satisfaction | Adoption of social media marketing by encouraging satisfied customers to engage with and trust these platforms for future bookings and recommendations. | El Archi & Benbba, 2023 |
| **c) E-Commerce and retail marketing** |
| Perceived Ease of Use | Social media platforms streamline the creation, management, and analysis of marketing campaigns, simplifying the process for retailers and boosting their effectiveness in engaging with customers. | Arango-Botero *et al.,* 2019; Salam *et al.,* 2021 |
| Perceived Usefulness | Retailers believe that using social media platforms can enhance their marketing efforts, improve customer engagement, and drive sales. | Arango-Botero *et al.,* 2019; Salam *et al.,* 2021 |
| Trust | Trust influences the adoption of social media marketing among retailers by encouraging them to embrace these platforms for their marketing strategies. | Arango-Botero *et al.,* 2019 |
| Attitude | Retailers’ attitude influences positively towards adoption of social media marketing. | Salam *et al.,* 2021 |
| Intention to Use | The intention to use social media marketing in retailing improves customer engagement and increases sales. | Salam *et al.,* 2021 |
| Actual Usage | Retailers use social media platforms to develop content, execute advertising campaigns, interact with customers, and evaluate marketing effectiveness. | Salam *et al.,* 2021 |
| **d) Fashion industry** |
| Perceived Ease of Use | Social media like Instagram makes it easier to advertise fashion brands. | Malebran *et al.,* 2023; Mahmoud *et al.,* 2023; Lee & Fiore, 2024 |
| Perceived Usefulness | Social media marketing is extremely useful and has an indirect effect on the intention to use it for fashion brands. | Malebran *et al.,* 2023; Mahmoud *et al.,* 2023; Lee & Fiore, 2024 |
| Intention to Use | Usefulness impacts the intention to use fashion brands. | Malebran *et al.,* 2023; Mahmoud *et al.,* 2023; Lee & Fiore, 2024 |
| Attitude | Gender moderation impacts the extent to which a positive attitude towards social media marketing influences the adoption of these strategies by fashion brands. | Malebran *et al.,* 2023 |
| Actual Usage | Understanding the actual use of social media involves examining the intention to purchase clothing among these users. | Malebran *et al.,* 2023 |
| Perceived Enjoyment | The degree of enjoyment and satisfaction users experience from interacting with fashion content on social media platforms. | Mahmoud *et al.,* 2023 |
| Satisfaction | Satisfaction leads to increase sales. | Mahmoud *et al.,* 2023 |
| **e) Education** |
| Perceived Ease of Use | Social media marketing is a easy way to improve their effectiveness in connecting with and engaging potential students. | Assimakopoulos *et al.,* 2017; Wong *et al.,* 2022; Xin & Yingxi, 2022 |
| Perceived Usefulness | Usefulness impacts the intention to use social media in libraries. | Assimakopoulos *et al.,* 2017; Wong *et al.,* 2022; Xin & Yingxi, 2022 |
| Intention to Use | University marketers should increase their engagement with the Facebook group to enhance the intention to use social media marketing within universities. | Assimakopoulos et al., 2017; Xin & Yingxi, 2022 |
| Actual Usage | Social media marketing adoption increases the number of students in universities. | Assimakopoulos *et al.,* 2017 |
| Attitude | Education through social media marketing develops positive attitude towards universities. | Xin & Yingxi, 2022 |
| **f) Health** |
| Perceived Usefulness | Social media marketing is valuable for advancing health services, interacting with patients, sharing health information, and fostering a supportive online community. | Hennadige, 2023 |
| **g) Cooperatives** |
| Perceived Ease of Use | Perceived Ease of Use positively impact Social media marketing. | Sukmadewi *et al.,* 2023 |
| Perceived Usefulness | Perceived Usefulness had no effect in cooperatives. | Sukmadewi *et al.,* 2023 |
| Attitude | Attitude influences the intention to use social media in cooperative sector. | Sukmadewi *et al.,* 2023 |
| Actual Usage | Actual usage is not affected by behavioral intention of cooperatives. | Sukmadewi *et al.,* 2023 |
| **h) Sports** |
| Perceived Usefulness | Social media marketing is useful in sports clubs to promote their clubs. | Marthinus *et al.,* 2024 |
| **i) Small and Medium Enterprises (SME)** |
| Perceived Ease of Use | Social media marketing encourages SMEs’ as it easy to use and positively influences the utilitarian and hedonic values. | Alsaleh *et al.,* 2019; Febrianty & Hidayat, 2019; Chatterjee *et al.,* 2021; Wu, 2020; Sharmin *et al.,* 2021; Muflih & Ratna, 2022; Kikawa *et al.,* 2022; Tatik & Setiawan, 2024 |
| Perceived Usefulness | Social media marketing fosters sustainable growth and development in SMEs by driving adoption through its perceived usefulness, enhancing business performance and market expansion. | Febrianty &Hidayat*.,* 2019; Wu, 2020; Chatterjee *et al.,* 2021; Sharmin et al., 2021; Muflih & Ratna, 2022; Kikawa *et al.,* 2022; Tatik & Setiawan, 2024 |
| Intention to Use | Social media enhances the intention to use it for the business growth in SME. | Febrianty & Hidayat, 2019; Wu, 2020; Sharmin *et al.,* 2021; Chatterjee *et al.,* 2021; Sharmin *et al.,* 2021 |
| Perceived Risk | The perceived risk indirectly affects the intention to use social media marketing by creating hesitation or uncertainty that can influence a person's decision to adopt these platforms. | Febrianty & Hidayat, 2019 |
| Actual Usage | Social media marketing by SMEs improves their visibility, boosts customer engagement, and enhances overall business performance. | Chatterjee *et al.,* 2021 |
| Cost | When favorable conditions and lower costs interact with external variables, their combined effect enhances the adoption of social media marketing, leading to business growth. | Muflih & Ratna, 2022; Tatik & Setiawan, 2024 |
| Facilitating Conditions | Facilitating conditions in social media marketing speeds up the sustainable business growth of SMEs. | Muflih & Ratna, 2022 |
| Compatibility | Age and gender serve as positive moderating variables, with compatibility positively influencing social media marketing in SMEs. | Kikawa et al., 2022 |

**Hypotheses formation:**

The study utilized the Technology Acceptance Model (TAM) to evaluate the factors influencing the adoption of social media marketing across different sectors. The conceptual framework and hypotheses were developed based on factors identified in various literature sources. Perceived ease of use (Deb *et al.,* 2024; Lee & Fiore, 2024; Khaki & Khan, 2024), Perceived Usefulness (Deb *et al.,* 2024; Tarigan, 2024; Lee & Fiore, 2024), Attitude (Shen *et al.,* 2024; Armutcu *et al.,* 2024), Compatibility (Kikawa *et al.,* 2022; Zhang *et al.,* 2023), Intention to Use (Alnajim & Fakieh, 2023; Hu *et al.,* 2024; Ilieva *et al.,* 2024) were the factors taken for the study. These are the factors that have been taken to evaluate the adoption of social media marketing. The study focused on: what factors drive the adoption of social media marketing on value added products by agripreneurs and which social media impacted the marketing value added products by agripreneurs. To measure the above objectives and answer the research questions, the following Hypotheses were framed to highlight the theoretical framework based on which the Hypotheses were framed.

*Ha0: Perceived Ease of Use does not influence the intention to use social media for marketing.*

*Ha1: Perceived Ease of Use influences the intention to use social media for marketing.*

*Hb0: Perceived Usefulness does not impact the intention to use social media for marketing.*

*Hb1: Perceived Usefulness impacts the intention to use social media for marketing.*

*Hc0: Attitude does not influence the intention to use social media for marketing*

*Hc1: Attitude influences the intention to use social media for marketing*

*Hd0: Compatibility does not influence the intention to use social media for marketing*

*Hd1: Compatibility influences the intention to use social media for marketing*

*He0:* *Intention to use does not influence the adoption of social media marketing*

*He1:* *Intention to use influences the adoption of social media marketing*

(ATT 1-5: Attitude; A 1-4: Adoption; PEOU 1-3: Perceived Ease of Use; PU 1-3: Perceived Usefulness; CP 1-3: Compatibility; IU 1-4: Intention to Use.)

**Figure 1: Proposed model from the developed hypothesis**

**Methodology for the study**

The research was carried out in all over the districts of Tamil Nadu, India. Agripreneurs who are marketing value added products were taken as samples. Snowball Sampling technique for selecting samples from Tamil Nadu, India as it is difficult to identify the agripreneurs who are using social media marketing. Data were received from 149 respondents from April 2024 to June 2024. A well-structured and tested interview schedule was used to collect the data from the respondents. Bibliometric analysis is a research approach that is gaining increasing attention due to its use of scientific methods to gather existing literature on a specific topic, allowing researchers to identify gaps in the field. The collaboration network between countries and keywords network was given through the VOSviewer software. Bibliometric analysis was used to analyze the importance of social media marketing and the need for the current study. The collected data were analyzed using statistical tools like Partial Least Squares Path Modeling (PLS-PM) for the factors driving adoption of social media using the TAM.

**Cronbach’s Alpha (α)**

Cronbach's Alpha measures the internal consistency of a set of items or indicators.

$$∝=\frac{k}{k-1}(1-\frac{\sum\_{i=1}^{k}σ\_{i}^{2}}{σ\_{x}^{2}})$$

where,

λi = Standardized factor loading for item i

θi = Measurement error variance for item i

**Average Variance Extracted (AVE)**

 AVE is determined by taking the sum of the squared standardized factor loadings and dividing it by the total of that sum plus the sum of the measurement error variances. It serves to evaluate convergent validity, with higher AVE values reflecting a stronger representation of the construct.

$$AVE= \frac{\sum\_{}^{}λ\_{i}^{2}}{\sum\_{}^{}λ\_{i}^{2}+\sum\_{}^{}ϴ\_{i}}$$

where,

λi = Standardized factor loading for item i

θi = Measurement error variance for item i

**Discriminate validity**

Discriminant validity ensures that a construct is unique and distinct from other constructs. It can be assessed using the Fornell-Larcker criterion:

 $\sqrt{AVE\_{i}}>Inter construct correlations (r\_{ij}$)

where,

$\sqrt{AVE\_{i}} $= square root of the Average Variance Extracted for construct i

Rij = correlation between constructs i and j

 The impact of social media on marketing was analyzed through Heckman analysis. The Heckman selection model (Heckman, 1976) posits that there is a latent regression relationship of the form:

$y\_{i}=x\_{j}β+u\_{1j}$ (regression equation)

However, the dependent variable yj is not always observed. Instead, it is only observed for a given observation j if:

$z\_{j}γ+u\_{2j}>0$ (selection equation)

where,

u1 follows normal distribution with mean 0 and variance σ2

u2 follows normal distribution with mean 0 and variance 1

correlation between u1 and u2 is ρ

When ρ≠0, applying standard regression methods to the regression equation results in biased estimates. The Heckman model, however, provides consistent and asymptotically efficient estimates for all the parameters in such models.

**Results and Discussion**

**Bibliometric analysis**

The bibliometric methodology is a scientific review methodology that involves applying quantitative techniques to identify key research or authors and their connections by analyzing all publications within a specific topic or fieldusing software like VOSviewer**.** In recent years, bibliometric analysis has gained significant popularity in business research (Khan *et al.,* 2021). Likewise, the study particularly emphasized the significance of social media marketing. Co-authors and countries collaboration network was developed using VOSviewer software. Social media marketing facilitates real-time communication and interaction with a worldwide audience. Effective use of these platforms allows countries to showcase their research and products on an international level, overcoming geographical limitations. Evidence from the United States (Alsaleh *et al.,* 2019), India (Tomar *et al.,* 2023), Pakistan (Anjum *et al.,* 2024) Australia (Mahmoud *et al.,* 2023), United Kingdom (Salam *et al.,* 2021), Greece (Theocharidis *et al.,* 2019), Serbia (Assimakopoulos *et al.,* 2017), Kuwait (Alsaleh *et al.,* 2019), Cyprus (Chatterjee *et al.,* 2021) highlighted the significant role of social media in broadening research impact, enabling international collaborations, and underscoring its value in engaging a global audience and fostering growth and development opportunities. Pakistan (Anjum *et al.,* 2024) and Australia (Mahmoud *et al.,* 2023) have published papers on social media marketing in recent years depicted in the timeline of Figure 2. Whereas, according to Figure 3, it is indicated that the majority of existing literature on social media marketing is concentrated in areas like consumer behavior (Lee & Fiore, 2024), fashion brands (Malebran *et al.,* 2023), e-commerce and retail marketing (Salam *et al.,* 2021), health (Hennadige, 2023), education (Xin & Yingxi, 2022), sports (Marthinus *et al.,* 2024), cooperatives (Suwandi *et al.,* 2023) and SMEs (Chatterjee *et al.,* 2021; Kikawa *et al.,* 2022; Tatik & Setiawan, 2024). However, a significant research gap exists regarding the use of social media



**Figure 2: Collaboration network of co-authors and countries**

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**Figure 3: Keywords network**

marketing on agribusiness, specifically value-added products. In identifying this gap, the study has focused on underexplored areas. Though several research on the agribusiness sector (Balkrishna & Deshmukh, 2019; Yao *et al.,* 2019; Palaniswamy & Raj, 2022; Sestomi *et al.,* 2022), there is a very low number of articles on social media marketing in value added products. Thus, the study further analyzed the factors driving social media marketing of value added products and the impact of social media on marketing value added products

**Structural Equation Modelling**

PLS-SEM is preferred when the structural model includes formative constructs (Hair *et al.,* 2020). Formative measurement models are assessed based on convergent validity, indicator collinearity, and the statistical significance and relevance of the indicator weights (Hair *et al.,* 2017). The indicator reliability is indicated in Table 2.

**Table 2: Outer factor loadings (Indicator reliability)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Adoption** | **ATT** | **CP** | **IU** | **PEOU** | **PU** |
| **A1** | 0.962 |  |  |  |  |  |
| **A2** | 0.955 |  |  |  |  |  |
| **A3** | 0.946 |  |  |  |  |  |
| **A4** | 0.953 |  |  |  |  |  |
| **ATT1** |  | 0.945 |  |  |  |  |
| **ATT2** |  | 0.912 |  |  |  |  |
| **ATT3** |  | 0.923 |  |  |  |  |
| **ATT4** |  | 0.934 |  |  |  |  |
| **ATT5** |  | 0.886 |  |  |  |  |
| **CP1** |  |  | 0.922 |  |  |  |
| **CP2** |  |  | 0.937 |  |  |  |
| **CP3** |  |  | 0.933 |  |  |  |
| **IU1** |  |  |  | 0.887 |  |  |
| **IU2** |  |  |  | 0.853 |  |  |
| **IU3** |  |  |  | 0.916 |  |  |
| **IU4** |  |  |  | 0.846 |  |  |
| **PEOU1** |  |  |  |  | 0.931 |  |
| **PEOU2** |  |  |  |  | 0.925 |  |
| **PEOU3** |  |  |  |  | 0.925 |  |
| **PU1** |  |  |  |  |  | 0.87 |
| **PU2** |  |  |  |  |  | 0.956 |
| **PU3** |  |  |  |  |  | 0.951 |

The outer loadings for Adoption (A1 to A4) are notably high, ranging from 0.946 to 0.962, signifying that the associated items strongly reflect the Adoption construct. This implies that agripreneurs who have adopted social media for marketing value-added products find it highly relevant and consistent with their marketing strategies. For Attitude (ATT1 to ATT5), the loadings vary between 0.886 and 0.945, with all values surpassing the 0.7 threshold, ensuring adequate reliability. However, ATT5's lower loading of 0.886 suggests a slightly weaker connection to the Attitude construct. Compatibility (CP1 to CP3) also shows strong loadings, from 0.922 to 0.937, indicating that agripreneurs consider social media highly compatible with their marketing needs. The Intention to Use construct (IU1 to IU4) has loadings from 0.846 to 0.916, with IU4 slightly lower, though all values remain above the acceptable level. This variation reflects a strong, but somewhat differentiated, intention to use social media across agripreneurs. The Perceived Ease of Use (PEOU1 to PEOU3) loadings, ranging from 0.925 to 0.931, suggest that agripreneurs find social media user-friendly. Lastly, Perceived Usefulness (PU1 to PU3) loadings, particularly PU2 at 0.956, indicate a high perception of social media’s value for marketing. This suggests that Agripreneurs consider social media a valuable tool for enhancing their marketing efforts, underscoring the critical role of perceived usefulness in the adoption and sustained use of technology.

**Table 3: Reliability and Validity of the Factor Loadings**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cronbach's alpha** | **Composite reliability (rho\_a)** | **Composite reliability (rho\_c)** | **Average variance extracted (AVE)** |
| **ATT** | 0.955 | 0.955 | 0.965 | 0.847 |
| **CP** | 0.923 | 0.923 | 0.951 | 0.866 |
| **IU** | 0.899 | 0.904 | 0.930 | 0.767 |
| **PEOU** | 0.919 | 0.919 | 0.949 | 0.860 |
| **PU** | 0.917 | 0.940 | 0.948 | 0.858 |
| **Adoption** | 0.967 | 0.969 | 0.976 | 0.910 |

Convergent validity is assessed through factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE). Outer loadings should exceed 0.70, with values between 0.40 and 0.70 considered for removal to enhance reliability (Hair *et al.,* 2014). Cronbach's alpha and composite reliability for all factors, including PEOU, PU, ATT, CP, IU, and A, are above 0.7, indicating strong reliability (Hair *et al.,* 2013; Tavakol & Dennick, 2011; Cronbach, 1951).

Cronbach's alpha for attitude was 0.955, indicating high internal consistency, with a composite reliability of 0.965. This suggests a reliable measurement of agripreneurs' attitudes, which is vital for social media adoption (Haque, 2023). Compatibility (α = 0.923) also demonstrated high reliability, showing that social media fits well with existing practices, increasing adoption of social media for marketing. Perceived ease of use (PEOU), with α = 0.919, further supports intention by highlighting user-friendliness. Perceived usefulness (PU, α = 0.917) reinforces that agripreneurs see value in social media. Finally, intention to use (α = 0.899) reflects a strong link between intention and adoption indicated in Table 3.

An Average Value Extracted (AVE) above 0.5 signifies strong convergent validity, indicating reliable factors (Hair et al., 2013). Attitude, with an AVE of 0.847, accounts for 84.7% of the variance in agripreneurs' intention to adopt social media, highlighting its importance. Compatibility (AVE = 0.866) and perceived ease of use (AVE = 0.860) are equally valid, explaining 86.6% and 86% of variance, respectively, suggesting agripreneurs favor platforms that fit their practices and are user-friendly. Perceived usefulness (AVE = 0.858) is also highly reliable, reflecting agripreneurs’ recognition of social media’s advantages, boosting their intention to adopt it.

**Table 4: Fornell-Larker method**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **ATT** | **Adoption** | **CP** | **IU** | **PEOU** | **PU** |
| **ATT** | 0.92 |   |   |   |   |   |
| **Adoption** | 0.786 | 0.954 |   |   |   |   |
| **CP** | 0.752 | 0.752 | 0.931 |   |   |   |
| **IU** | 0.704 | 0.678 | 0.666 | 0.876 |   |   |
| **PEOU** | 0.788 | 0.671 | 0.676 | 0.587 | 0.927 |   |
| **PU** | 0.667 | 0.69 | 0.681 | 0.618 | 0.608 | 0.926 |

Cross-loadings should show that an indicator’s factor loading on its assigned construct is higher than on others, with a cut-off value of 0.70 (Hair *et al.,* 2014). Discriminant validity ensures constructs are distinct (Hair *et al.,* 2014). Table 4 uses the Fornell-Larcker method, comparing AVE square roots with latent construct correlations (Hair *et al.,* 2014; Fornell & Larcker, 1981). The diagonal value for Attitude (0.92) is significantly higher than its correlations with Adoption (0.786), Compatibility (0.752), Intention to Use (0.704), Perceived Ease of Use (0.788), and Perceived Usefulness (0.667), indicating its distinctiveness (Hair *et al.,* 2014). Similarly, Adoption (0.954) and Compatibility (0.931) have higher diagonal values compared to their correlations with other constructs, confirming their uniqueness. Intention to Use (0.876), Perceived Ease of Use (0.927), and Perceived Usefulness (0.926) also demonstrate higher diagonal values, indicating distinct constructs. These results affirm the model’s reliability and validity in measuring unique aspects of social media marketing adoption (Table 4).

Moreover, Heterotrait- Monotrait ratio (HTMT) helps the correlation between the different constructs. HTMT values near 1 indicates a lack of discriminant validity. Assessing discriminant validity with HTMT involves comparing it to a specific threshold. If the HTMT value exceeds this threshold, it suggests a lack of discriminant validity. Some researchers recommend a threshold of 0.85, while Gold *et al.*, (2001) suggest a value of 0.90. The study determines the HTMT value less than 0.9 as given in Table 5. Considering these points, the research presented here is both reliable and robust. The results of these analyses confirm the validity and reliability of this study. Each construct is adequately differentiated from the others, ensuring the model accurately captures the unique aspects of the social media adoption process for marketing value-added products by Agripreneurs. This differentiation highlights that Agripreneurs view adoption as a distinct process, separate from their attitudes, perceived ease of use, perceived usefulness, compatibility, and intention to use.

**Table 5: Heterotrait- Monotrait Ratio**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **ATT** | **Adoption** | **CP** | **IU** | **PEOU** | **PU** |
| **ATT** |   |   |   |   |   |   |
| **Adoption** | 0.818 |   |   |   |   |   |
| **CP** | 0.800 | 0.796 |   |   |   |   |
| **IU** | 0.758 | 0.723 | 0.729 |   |   |   |
| **PEOU** | 0.841 | 0.711 | 0.734 | 0.644 |   |   |
| **PU** | 0.708 | 0.726 | 0.738 | 0.669 | 0.658 |   |

**Structural Measurement**

**Figure 4: Structural model of drivers influencing intention to use and adoption of social media for marketing**

**Table 6: Path Coefficient**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Original sample (O)** | **Sample mean (M)** | **Standard deviation (STDEV)** | **T statistics (|O/STDEV|)** | **P values** |
| **ATT -> IU** | 0.403 | 0.41 | 0.107 | 3.788 | 0.000 |
| **CP -> IU** | 0.237 | 0.238 | 0.09 | 2.649 | 0.008 |
| **IU -> Adoption** | 0.678 | 0.679 | 0.039 | 17.255 | 0.000 |
| **PEOU -> IU** | -0.007 | -0.013 | 0.099 | 0.071 | 0.943 |
| **PU -> IU** | 0.191 | 0.192 | 0.072 | 2.642 | 0.008 |

From Figure 4, the structural model of influencing drivers of social media marketing on value added products. The formulated hypothesis was tested using a t-value and a p-value. The structural model determines the significance of all factors such as perceived ease of use (PEOU), perceived usefulness (PU), compatibility (CP), attitude (ATT), intention to use (IU) and adoption of social media for marketing value added products by agripreneurs. Path analysis resulted in the formation of five hypotheses. The results of the Path analysis are given in Table 6.

Perceived ease of use (PEOU) had no significant impact on intention to use (IU) social media for marketing value added products. This accepted the null hypothesis (*Ha0*) that PEOU influences the IU and not accepted the alternative Hypothesis (*Ha1*). Perceived ease of use (PEOU) had no significant impact on intention to use (IU) social media for marketing value added products. There is a lack of significance between perceived ease of use and the intention of Agripreneurs to use social media for marketing value added products like ready-to-eat, ready-to-cook items, health mixes, snacks, sweets, and so on, shows no significance with a t-value of 0.071 and a p-value of 0.943. Social media's perceived ease of use for marketing value-added products might not be substantial for various reasons. Firstly, value-added products often necessitate detailed information and personalized customer interactions, which social media platforms may not adequately provide. Secondly, businesses in certain sectors might find traditional marketing channels more effective for their specific audience, who may not rely heavily on social media for their purchasing decisions (Izogo & Mpinganjira, 2022). Moreover, ease of use does not necessarily translate to effective use; businesses might find that creating engaging content, managing interactions, and analyzing data requires significant effort which is indicated by Cheung *et al.,* (2021). Furthermore, trust and credibility are crucial in marketing value-added products, and these can be more challenging to establish solely through social media.

Perceived usefulness was crucial in agripreneurs' intention to use social media for marketing value-added products for several reasons. There was a significant relationship between perceived usefulness and the intention to use (IU) social media for marketing value added products which shows a significant relationship with a t-value of 2.642 and a p-value of 0.008 and hence the Hypothesis (*Hb1*) is accepted and rejected the null hypothesis (*Hb0*). First, social media platforms offer Agripreneurs a cost-effective (Arora, 2024) and efficient method to reach a wider audience, including potential customers who may not be accessible via traditional marketing channels. This broader reach can result in increased sales and greater brand recognition (Jiang *et al.,* 2020; Ilieva *et al.,* 2024). Second, social media facilitates direct communication and engagement with customers, helping to build stronger relationships and customer loyalty (Duan *et al.,* 2024). Agripreneurs might receive instant feedback, address customer inquiries, and promote their products in real time. Additionally, social media provides valuable analytics and insights, allowing agripreneurs to monitor the performance of their marketing efforts, understand customer preferences (Gerlich, 2023), and make data-driven decisions. This perceived usefulness in improving marketing effectiveness and efficiency makes social media an attractive tool for Agripreneurs seeking to expand their businesses and remain competitive in the market.

Compatibility had a significant relationship with the intention of Agripreneurs to use social media for marketing value added products (*Hc1*), which shows a significance with a t-value of 2.649 and a p-value of 0.008 and hence Hypothesis (*Hc1*) is accepted and the null hypothesis (*Hc0*) was rejected. The compatibility of social media with agripreneurs' current practices significantly influences their intention to use it for marketing value-added products for several reasons. Firstly, social media platforms integrate seamlessly with digital tools and technologies that Agripreneurs already employ, such as e-commerce websites, online payment systems, and customer management software. This integration streamlines the marketing process and ensures a more efficient workflow. Secondly, social media aligns with agripreneurs' marketing goals, allowing them to visually showcase their products through photos and videos (Keerakiatwong *et al.,* 2023; Einsle *et al.,* 2024) share success stories, and educate customers about their products' unique features and benefits. Additionally, the interactive nature of social media supports the community-oriented approach of Agripreneurs, enabling them to engage with customers, receive feedback, and build a loyal customer base. Moreover, the adaptability of social media platforms allows agripreneurs to quickly adjust their marketing strategies based on real-time data and trends, ensuring their efforts remain relevant and effective. This compatibility with their needs and practices makes social media an invaluable tool for Agripreneurs in marketing value-added products.

The attitude of Agripreneurs had a significant relationship with the intention to use (IU) social media (*Hd1*), showing a significance with a t-value of 3.788 and a p-value of 0.000. This confirms the acceptance of Hypothesis (*Hd1*) and the null hypothesis (*Hd0*) was rejected that Attitude influences Intention to use social media. The attitude of Agripreneurs towards social media marketing greatly influences their intention (Shen *et al.,* 2024; Migkos *et al.,* 2023) use it for marketing value-added products for several reasons. Firstly, a positive attitude towards social media encourages Agripreneurs to explore and utilize its various features and benefits, increasing their willingness to adopt it for marketing purposes. Secondly, when Agripreneurs perceive social media as an effective marketing tool, they are more likely to invest time and resources into creating engaging content and establishing an online presence. This proactive approach can result in greater visibility (Ilieva *et al.,* 2024) and reach for their products. Moreover, a positive attitude boosts their confidence in managing social media platforms, leading to more consistent and strategic marketing efforts. Furthermore, Agripreneurs who see the value in social media are likely to keep up with the latest trends and best practices, ensuring their marketing strategies remain relevant and effective. This positive perspective toward social media marketing fosters a more innovative and adaptive approach, making it a vital factor in the successful promotion of value-added products.

The intention to use social media is closely linked to its adoption for marketing value-added products for several persuasive reasons. Hence, intention to use influences the adoption of social media marketing (*He1*) and rejected the null hypothesis (*He0*). Firstly, intention often precedes actual behavior; a strong intention to utilize social media typically leads to its integration into marketing strategies. Agripreneurs with a high intention to use social media acknowledge its potential advantages, such as reaching a wider audience, directly engaging with customers, and utilizing cost-effective marketing tools. Secondly, the intention to use social media is frequently driven by perceived benefits, including enhanced brand visibility, increased sales, and better customer relationships (Ilieva *et al.,* 2024). Agripreneurs who recognize these benefits are more inclined to adopt social media platforms (Sharma *et al.,* 2023), investing in content creation, targeted advertising, and customer interaction to achieve these outcomes (Adwan & Altrjman, 2024; Harb & Khasawneh, 2024). Moreover, a strong intention to use social media can be shaped by positive attitudes and favorable perceptions of its usefulness and ease of use. Agripreneurs who believe that social media can effectively support their marketing efforts are more motivated to incorporate it into their business practices. This proactive stance can result in greater innovation, adaptability, and competitiveness in the market. Ultimately, the significant relationship between the intention to use and the adoption of social media (Muhammad *et al.,* 2024) highlights the importance of fostering a positive perspective and understanding of social media's potential among Agripreneurs for the successful marketing of value-added products.

Researchers need to evaluate the statistical significance and relevance (i.e., size) of the indicator weights. Since PLS-SEM is a non-parametric method, bootstrapping is employed to ascertain statistical significance (Chin, 1998). The evaluation of the inner structural model using SEM PLS involves the R-squared (R²) test and the significance test through the estimation of the path coefficient. The R-squared (R²) value is used to determine the extent of the influence that independent latent variables have on the dependent latent variable. According to Ramayah *et al.*, (2017), the R2 value indicates the quality of the structural model. Likewise, Hair *et al.,* (2011) argue that the coefficient of determination and the significance level of the path coefficients (beta values) can be assessed using the R2 value.

In this study, the R-squared (R²) value of intention to use is 0.556 and the R-squared (R²) value of adoption of social media for marketing value-added products is 0.459. The R2 value of 55.6% of the variance in intention to use can be explained by the independent variables such as perceived ease of use, perceived usefulness, compatibility, the attitude of Agripreneurs, and 45.9% of the variance in the adoption of social media for marketing value-added products by the intention to use by Agripreneurs.

In the SEM PLS model, the significance test aims to assess the impact of exogenous variables on endogenous variables. This is done through a bootstrapping process in PLS-SEM, which allows for the determination of the moderation effects between exogenous and endogenous variables in the study. In further assessing statistical significance, the current study calculated the path coefficients of the structural model and conducted a bootstrap analysis.

The hypothesis results revealed that four out of five factors significantly influenced Agripreneurs' use of social media for marketing value-added products. Attitude toward social media strongly impacts the intention to adopt it, with a path coefficient of 0.403, underlined by a high t-statistic and significant p-value. This underscores the importance of cultivating positive perceptions among Agripreneurs to enhance their willingness to embrace social media in their marketing efforts. Compatibility is another key factor, with a path coefficient of 0.237, showing that when social media aligns with existing marketing practices, the likelihood of adoption increases. Intention to use social media emerged as the most significant predictor of actual adoption, with a high path coefficient of 0.678, suggesting that Agripreneurs with a strong intent to use social media are very likely to adopt it. However, perceived ease of use did not show a significant effect, with a path coefficient close to zero (-0.007), indicating that Agripreneurs may prioritize other factors, such as compatibility and usefulness. Lastly, perceived usefulness had a significant positive effect on intention, with a path coefficient of 0.191, highlighting the importance of showcasing the tangible benefits of social media for marketing to promote higher adoption rates among Agripreneurs.

**Table 7: Heckman analysis of the impact of social media on marketing**

Heckman analysis model- two-step estimates (regression model with sample selection)

No. of observation= 149: Selected = 120; Not selected = 29; Wald chi2 = 13.10; Prob>Chi2 = 0.0415

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Coefficient** | **Std. Err** | **z** | **p>|z|** | **95% confidence interval** |
| **Increase in sales** |
| Engagement rate per post | -0.0001114 | 0.0000533 | -2.09 | 0.037 | -0.0002159 | -0.0000688 |
| Time spent | 0.0007689 | 0.0009069 | 0.85 | 0.396 | -0.0010085 | 0.0025464 |
| Age | -0.0032898 | 0.0045373 | -0.73 | 0.468 | -0.0121827 | 0.005603 |
| Education | 0.0191447 | 0.0244472 | 0.78 | 0.434 | -0.0287708 | 0.670603 |
| Enterprise scale | -0.1598999 | 0.1360206 | -1.18 | 0.240 | -0.4264954 | 0.1066956 |
| Experience | -0.0042395 | 0.0124879 | -0.34 | 0.734 | -0.0287154 | 0.0202364 |
| **\_cons** | 3.340636 | 0.2361397 | 14.15 | 0.000 | 2.877811 | 3.803462 |
| **Use of social media** |
| Engagement rate per post | 0.0005776 | 0.0003006 | 1.92 | 0.055 | -0.0000116 | 0.0011668 |
| Time spent | 0.0161007 | 0.008255 | 1.95 | 0.051 | -0.0000787 | 0.0322802 |
| Annual income | 0.0000534 | 0.0000220 | 2.42 | 0.015 | 0.0000102 | 0.0000965 |
| Facebook | 0.4641095 | 0.204643 | 2.27 | 0.023 | 0.0630165 | 0.8652025 |
| WhatsApp | 0.4222874 | 0.2062515 | 2.05 | 0.041 | 0.018042 | 0.8265328 |
| Instagram | 0.0412788 | 0.2304362 | 0.18 | 0.858 | -0.4103678 | 0.4929254 |
| YouTube | 0.0132143 | 0.2649127 | 0.05 | 0.960 | -0.5060051 | 0.5324337 |
| Twitter | -1.791165 | 1.316555 | -1.36 | 0.174 | -4.371565 | 0.7892343 |
| LinkedIn | -1.56276 | 1.457576 | -1.07 | 0.284 | -4.419557 | 1.294037 |
| Pinterest | 0.5602881 | 0.8298789 | 0.68 | 0.500 | -1.066245 | 2.186821 |
| **\_cons** | -1.017983 | 2.039827 | -0.50 | 0.618 | -5.01597 | 2.980005 |
| **Mill’s Ratios:** |
| **Lambda** | -0.3819792 | 0.1266408 | -3.02 | 0.003 | -0.6301905 | -0.1337678 |
| **Rho** | -1.00000 |  |  |  |  |  |
| **Sigma** | 0.38197916 |  |  |  |  |  |

Social media's impact on marketing value added products was discussed through the two-stage sample selection model. Table 8 shows the Heckman analysis of social media impact on marketing value added products. In the first stage, predicted probabilities of increase of sales on marketing value added products were analyzed through probit analysis. In the second stage, predicted probabilities were estimated to study the social media impact on the increase in sales of value added products. The social media impact model, apart from independent variables, included the inverse mill ratio and predicted the probability of an increase in sales on marketing value added products from the Probit model. Social media impact was the dependent variable, which impacted the increase in sales of value added products by Agripreneurs. The following table summarizes the results of the above analysis:

**Table 8: Impact of social media on marketing value added products**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Variable** | **Relationship** | **Significance** | **Effect** |
| **On Sales** |
| 1. | Engagement rate per post | Negative | Significant | Will decrease |
| 2. | Time spent | Positive | Not significant | Little impact |
| 3. | Age | Negative | Not significant | No impact |
| 4. | Education | Positive | Not significant | No impact |
| 5. | Enterprise scale | Negative | Not significant | No impact |
| 6. | Experience | Negative | Not significant | No impact |
| **On Social media usage** |
| 1. | Engagement rate per post | Positive | Significant | Marginal impact |
| 2. | Time spent | Positive | Significant | Marginal impact |
| 3. | Annual income | Positive | Significant | Increase usage |
| 4. | Facebook | Positive | Significant | Increase usage |
| 5. | WhatsApp | Positive | Significant | Increase usage |
| 6. | Instagram | Positive | Non-significant | No impact on usage |
| 7. | YouTube | Positive | Non-significant | No impact on usage |
| 8. | Twitter | Negative | Non-significant | No impact on usage |
| 9. | LinkedIn | Negative | Non-significant | No impact on usage |
| 10. | Pinterest | Positive | Non-significant | No impact on usage |

As per table 8, Twitter, LinkedIn and Pinterest are not widely utilized by most customers, making them less effective for marketing value-added products. While Instagram is popular among younger audiences (Ibrahim & Aljarah, 2024; Kirilenko *et al.,* 2024), its usage is not consistent across all age groups. YouTube, however, enjoys widespread popularity across age demographics (Cho *et al.,* 2024), though challenges persist with communication and contact between Agripreneurs and customers. WhatsApp and Facebook are the most effective platforms for marketing value-added products such as ready-to-eat, ready-to-cook items, sweets, and snacks. WhatsApp’s low bandwidth use ensures reliable communication even with weak internet connections (Katsande *et al.,* 2024), while Facebook’s advanced targeting capabilities allow businesses to engage specific demographics and enhance brand awareness (Sedghi, 2014). Facebook also supports direct interaction through images, videos, and live streams, fostering product feedback and brand loyalty, and creating communities around value-added products like millet-based snacks, sweets, and health mixes, enhancing marketing impact and customer engagement.

**Conclusion**

In conclusion, this article highlights the pivotal role of social media in enhancing marketing strategies for agripreneurs dealing with value-added products. It demonstrates that platforms like WhatsApp and Facebook are especially effective for connecting with diverse age groups and boosting customer engagement. The research underscores the importance of choosing the appropriate social media platform to maximize marketing reach and effectiveness. Although perceived ease of use did not significantly affect the intention to use social media for marketing, perceived usefulness, compatibility, and attitude were found to be significant factors. The study suggests that different types of content, such as YouTube videos, Instagram or Facebook posts, and WhatsApp messages, are best suited to specific platforms. Currently, WhatsApp, Facebook, YouTube, and Instagram are the most popular and effective for reaching target customers. To enhance social media marketing efforts and increase sales revenue, agripreneurs should analyze engagement rates and return on investment. Future directions include developing innovation centers for testing new techniques and fostering partnerships with marketing and technology firms to leverage the latest advancements in social media marketing.

**Limitations**

This approach helps concentrate on business goals, gain deeper insights into social media dynamics, and enhance marketing efforts while studying the impact of social media marketing. Several external factors may also influence the marketing of value-added products through social media. Future research should focus on identifying additional variables and employing longitudinal methods to gain a comprehensive understanding of the dynamics involved. Utilizing a difference-in-differences approach could help analyze the impact of various media across different age groups.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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