

Antecedents of E-Marketing of Agriculture Products in This Digital Era: An Empirical Study

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ABSTRACT

Agriculture is the backbone of the Indian economy. The majority of the citizens of this country are dependent upon the agricultural supply chain for the livelihood. This study shows the role of the workforce in this digital era for the e-marketing of agriculture products. E-marketing platforms (i.e., search engine optimization, affiliate marketing, social media marketing, and e-mail marketing) help digital marketers to track and analyze the dynamic and complex buying behavior of consumers. Structural equation modelling is used to test the framework for the e-marketing of agriculture products. The developed model can enhance the capability of workforce in this digital era for developing an effective e-marketing strategy for agriculture products.

KEYWORDS

Affiliate Marketing, Agricultural Products, Digital Workforce, E-Mail Marketing, E-Marketing, Search Engine Optimization, Social Media Marketing

1. INTRODUCTION

Agriculture plays a very significant role in strengthening the Indian economy. More than 50% of people in India are employed in the agriculture sector and the contribution of the agricultural sector in GDP is also increasing (Veeranjaneyulu, 2014). Agriculture also assists in providing raw materials to the industries. But still, the good quality agricultural products are not able to reach the consumers due to the under development of this sector. The marketing of the agricultural product is not the same as the traditional marketing of other products in which the sole emphasis is given on fulfilling the demand and satisfying the expectation of the consumers (Singla & Sagar, 2012). E-marketing of agricultural products is related to the e-marketing of the basic need of the people which is food and getting food is also a human right. The e-marketing of agricultural products also involves various services like packaging, grading, transport, storage, advertising, and promotion of agricultural products. Therefore, the government must act accordingly so that people can get food. Supply chain management of the agricultural products must travel a long distance which results in the decaying and rotting of the agricultural products before reaching the marketplace (Wells et al., 2007) and the farmers are not

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getting anything for their investment. This is the major drawback of the agricultural sector in India. There is a long list of intermediaries in the whole process that starts right from the production to the consumption of agricultural products. Many intermediaries also result in increasing the price of the products and the farmers remain the least earners during the whole process. At least four intermediaries are involved in the process of the production of the agricultural products until their consumption and they do not add any value to the products (Feldmann & Hamm, 2015). The price strategy is not clear and open. At every level of the intermediaries, the price of the product increases which is not in the knowledge of the producers. The main reason behind the increase of the transaction cost of the agricultural products is various taxes, fees, and various licensing systems (Thompson & Scoones, 2009) which in total increase the price of the products which fall on the pocket of the common man. To curtail this, the Government of India has set up the MSP (Minimum Support Price) which helps the farmers to earn at least the fixed price for their agricultural products. The Government of India has also amended 'The Agricultural Products Market Committee Act' to improve the transparency in the selling of agricultural products. This Act is mainly aimed to exclude the mediators between the producers and the end-users and improve the direct sales so that the producers can get the best of their products. Many states have adopted this act in full and some have adopted this partially (GKToday, 2014). Apart from this, the producers are now looking up to the e-commerce portals for the sale of the products generated from agriculture. To end up all this, new and modern technology is introduced in the agricultural sector also i.e., e-marketing (Alavion et al., 2017). E-marketing is capturing the market at a very high speed. Digital marketers are trying their best to get the customers on the digital portal. The online selling of the products is a decade old but the selling of the agricultural products is introduced only a few years back. The online marketing of agricultural products helps in eliminating the drawbacks of the traditional market system where the consumers had to go out of the comfort zone of their home to buy the fruits and vegetables from the local market. But in the present time preferably in the urban area, the people do not want to go out because there is no time in their busy schedule, but the agriculture products are the basic needs of the people, and these are important for fulfilling the daily requirement of the people. So, the companies have found a solution to the problems of the lack of time (Chaudhary & Suri, 2020). People can now order fruits and vegetables and other agricultural products with just one click and the products will reach their doorstep. The companies like Grofers, Big Basket, and Amazon are a few names that provide this facility to their consumers. Apart from this, the e-marketing of the agricultural products also helps in reaching a large number of people in very little or no time which also assist in boosting up the sales of the agricultural products which ultimately helps in helping towards making the economy strong. This also helps in providing agricultural products to a large number of people as the demands of the people in India are increasing as the population is increasing (Chauhan, 2014). Digitalization has revolutionized the consumer marketing. Digital marketing required knowledge and practice. Traditional marketers need to enhance their capabilities and knowledge for digital marketing (Herhausen et al., 2020). Interactivity on social websites has a huge impact on brand experience and brand choice, which has a significant impact on customer purchasing intentions (Ye et al., 2019). There is another advantage of e-marketing of agricultural products is that the consumers have to pay less for the products. In developing countries, e-businesses are still in the struggling face and lacking in sustainable e-marketing implementation (Sheikh et al., 2018). Therefore, the scope of this study is to find out the role of digital workforce for the sustainable development of e-marketing strategies for agriculture products in developing countries like India. E-marketing is changing the traditional method of international marketing and will continue to change (Sheth & Sharma, 2005). Symmetric information about online products is essential to increase the level of influence of customers towards digital platforms. Product distortion should be reduced for effective digital marketing (Pei & Yan, 2019). Product categorization is required for customized digital marketing. Various sector is introducing modern business models influenced by digital transformation. Consumer online purchase behaviour must be understood in order for e-marketing to be effective. Digital marketing aspects differ depending on the products (Kiang et al.,

2011). In comparison to other products, e-marketing of agriculture products is a little more challenging. Understanding the response of consumers towards agriculture product brand promotion is essential (Liao et al., 2020). In the digital age, a workforce with a working knowledge of digital technologies and techniques is needed (Siddoo et al., 2019). Consumers' online buying behaviour is totally changed by digital and internet of things technologies. Consumers are more concerned about security concerns while online transaction (Fu et al., 2020). Maintaining customer satisfaction is the biggest challenge in online shopping. Higher level of customer satisfaction required higher service quality. The privacy, security and design of digital platforms is essential for superior customer services (Rita et al., 2019). A company has to develop superior services to retain the existing customers. Research is needed to find the impact of e-marketing on agriculture products and also discuss the challenges of the digital workforce for implementing the e-marketing strategies. The agriculture products don't have the same opportunities as other products on the digital platform (Baourakis et al., 2002). This research tries to determine the opportunities of digital marketing of agriculture products by establishing an effective digital workforce. Hence:

RQ 1: How e-marketing platform influence consumers and the role of the digital marketing for e-marketing of agriculture products which assist the digital workforce?

Smartphone, high internet speed and social media platform are changing the purchasing behaviour of consumers. Information technology and virtual communications play very crucial tools in the marketing of agriculture products (Alavion & Taghdisi, 2020). Information technology enhances the capabilities to update the information of agriculture products. Digital marketing accelerates the growth of e-marketing of agriculture products (Behera et al., 2015). The consumers visiting e-shop due to digital footprints used to understand the behaviour of the consumers (Gerrikagoitia et al., 2015).

To advance the literature, further study is needed to determine the impact of e-marketing platform on the sales of agriculture products.

RQ 2: What framework digital marketers should follow for agriculture products?

E-marketing has the benefit of market expansion and cost reduction. In e-marketing the number of intermediaries decreases which have a significant impact on cost reduction. This will have a positive impact on the expansion of e-marketing (Shaltoni & West, 2010). E-marketing makes purchasing easier for the consumers to get the products at their doorstep (Arayesh, 2015). Agricultural information is critical to the development and improvement of Indian farmers (Zhang et al., 2016). The limited literature is available about the e-marketing of agriculture products. A study is needed to determine the most successful e-marketing approach for agricultural products, which will facilitate digital workforce.

The section of this study is classified as follows: Section 1 consists of the introductory part of the study. Section 2 consist of the theoretical background of the study. Section 3 shows the hypothesis adopted for the research. Section 4 represents the research methodology. Section 5 represents data analysis. Section 6 represents the conclusion and section 7 consist of the conclusion of the study.

2. THEORETICAL BACKGROUND

As India is a land of agricultural products hence it is the main source of earning and developing the economy. Therefore, for a developing country like India, it is very essential to embrace and enhance the development of the e-marketing of agricultural products because it is the need of the hour (Rao et al., 2019). E-marketing will help in promoting the sales volume of agricultural products. A large market segment can be covered. The need of the people will be fulfilled as more and more items are needed to fulfil the demand of the ever-increasing population of the country (Alavion et al., 2017). The

gap between the farmer and the consumers will be eliminated by the e-marketing of the agricultural products. The e-marketing of the agricultural products will also help in enhancing the supply chain of the products which is related to agriculture. With the help of the expansion of the channels in the agriculture sector, there will be a well-organized structure for selling agriculture products on a very large scale (Calzolari et al., 2012). This will help in maintaining an asymmetrical channel of information regarding providing information to both the producer and the consumer of the agriculture products and this will ultimately help in reducing the loss. This will help in maximizing the profits and minimizing the transaction links and transaction costs incurred in the whole process. The e-marketing channel for the agriculture channel will also help in making a platform for other subsidiary industries like fisheries and horticulture. Overall, this will help in speeding up industrialization in the agriculture sector also. Thus, the e-marketing of agriculture products helps in fulfilling the needs of the people as well as strengthening the economy too (Suhartanto et al., 2019).

The e-marketing of agriculture products is being emphasized to pamper the agriculture sector. Noticeable research in the field of the e-marketing of agriculture products has been done in measuring its performance. The income of the consumers is increasing, it is also arousing the need for the commercialization of agriculture products. The need is also increasing due to the liberalized trade policies and urbanization (Feder & Umani, 1993). The demand for agriculture products is also increasing due to the use of high-end technologies and organic farming of agriculture products. The e-marketing of agriculture products is also aiding in expanding the agriculture sector. Geographical factor has an impact on behaviour factor. In the e-commerce era, geographical space becomes a catalyst in the changing behaviour of the farmers (Alavion & Taghdisi, 2021). The impact of e-commerce on agriculture products is very crucial and important. The agriculture products firms have started developing a tendency to use information technology, especially the internet to sell their agro-products (Baourakis et al., 2002). The digitalization process necessitated the development of skills and a digital workforce capable of effectively implementing a digital marketing campaign. Digital workforce is essential for e-marketing for products and services (Vial et al., 2019). A study is needed to create a model for agriculture product e-marketing that will assist the digital workforce in developing an effective digital marketing strategy.

3. HYPOTHESES DEVELOPMENT

3.1 Affiliate Marketing

Presently affiliate marketing has emerged as extremely popular in this fierce online marketing of the products for digital promotion (Sheth & Sharma, 2005). The rapid technological advancement has provided a platform for the availability, marketing and advertising of agriculture products that are readily accessible to the consumers on the internet (Pentina & Hasty, 2009). Internet marketing has gained popularity due to various benefits. The most important benefit is targeting a large market segment that can cover across the globe and the marketer can target those consumers directly. Affiliate marketing is also cost-effective. It is an online sales technique that allows increasing the sales target by affiliating the website on another digital platform (Mariussen et al., 2010). According to Spilker & Brettel (2010), marketers sublease an extraneous professional who helps in the promotion of the products online. It helps to increase online traffic. Affiliate marketing was first time introduced by Amazon in the year 1996. It is mostly done on a commission basis (Truong & Simmons, 2010). The other websites are paid when a person clicks on the advertisement of the advertiser and the publisher gets paid for that. This is called the PPC i.e., pay per click. It is one of the most regular types of affiliate marketing. Affiliate marketing is also widely used for generating online traffic which will increase the sales of the products (Mariussen et al., 2010). This can be used through various sources like promoting the products on a payment basis; this will help in the lead generation which in turn will increase the profits of the business. The conversion ratio of the lead generated can also be increased

through affiliate marketing. This is highly used in the sales of agriculture products. In metropolitan cities, people prefer to purchase agricultural products by e-commerce websites (Alavion et al., 2017).

H1: Affiliate marketing has a significant impact on the e-marketing of agricultural products.

3.2 Social Media Marketing

Social media is used to visualize products and services by using the virtual world. Social media marketing is taking the agriculture products sector over traditional marketing. In India, many service providers like BNSL are providing various facilities to the farmers to encourage them to use social media for increasing their sales. For example, the Mahakrishi plan is introduced by BSNL. The farmers are more inclined towards using the social media platform for increasing the sale volume of their products as it helps to overcome the geographical boundaries of the country making it easily accessible. As consumers are spending more time on the internet, it becomes necessary for the farmers to have prominence and an effective presence online (Akar & Topçu, 2011). They must learn and adopt new methods that are used by the consumers for getting information and should act accordingly (Goyal & Eilu, 2019). Creating interaction with the user of the product is the key element of the internet marketing of agriculture products (Baourakis et al., 2002). It also helps in creating a platform where the people of the same interest, interact with each other. It also helps to overcome the barrier of one-way communication and allowing consumers to get more involved in the purchase of the products digitally (Mariussen et al., 2010). In the agriculture sector, the use of social media is having a positive impact on brand or company awareness, increasing sales, and increasing interaction with the consumers (Sheth & Sharma, 2005). According to Alavion et al., (2017), social media provide considerable scope for the buying and selling of agriculture products.

H2: Social media marketing has a significant impact on the e-marketing of agricultural products.

3.3 Search Engine Optimization

Search engine optimization is a new technology that is used by the digital marketer to perform in-depth research and established a strong network marketing structure (Aswani et al., 2018). It is a medium through which a fruitful result is received by the user for the search online. It helps the farmers to increase their income and efficiency. It plays a very crucial role in increasing the rank of the products related to agriculture which in turn helps in improving the product and brand marketing of the agriculture products (Ohe & Kurihara, 2013). The search engine helps the marketers to advertise the products at the time to the right person. The SEO, when used efficiently defining the outline of the products, provides accessibility to a large number of searchers (Chen et al., 2011). The search engine optimization will help the farmers to increase their revenue by using the technology properly as it will help in increasing the traffic movement and the ranking of the website will also be boosted up (Aswani et al., 2018). A website that provides attractive and informative content attracts searchers and users which are very important to increase profits when talking about agriculture products. The farmers remain underpaid for their products due to less use of Information and Communication Technology (ICT). The Government has launched the National Agricultural Market (NAM) which provides an e-marketing platform for agriculture products. This also aims towards providing better returns on agriculture products and a transparent environment to increase revenue. The government has also introduced various e-marketing websites for the selling of agriculture products like KisanMandi.com. This is an initiative taken by the Government of India to promote the Agriculture Products E-Marketing.

H3: Search engine optimization has a significant impact on the e-marketing of agricultural products.

3.4 E-Mail Marketing

E-mail marketing is a process of sending bulk commercial e-mails to increase the sale of the products. This will help in targeting a large market segment with fewer efforts. Also, it helps in overcoming the barriers of the traditional pattern of marketing (Hartemo, 2016). A strong supply chain system will turn into an additional working hand for the farmers which will help them to get the right value for their products (Bosona & Gebresenbet, 2013). Earlier the farmers were not able to sell their products and the products decay lying in the farms or the warehouses. Due to the increase in the purchasing power of the people, the requirement for agricultural products is increased. This was made possible due to the use of technologies like the processing of agricultural products and distribution systems (Ali & Kumar, 2011). E-mail marketing helps the farmers to reach those consumers who need agricultural products, and they can earn their revenue by selling the products. Nowadays, various websites provide a database and e-mail list which helps them to directly reach the needy consumers and in return, the sales volume will be increased. E-mail marketing helps to identify the needs of the consumer and they can be provided with a personalized offer.

H4: E-mail marketing has a significant impact on the e-marketing of agricultural products.

4. RESEARCH METHODOLOGY

4.1 Construct Operationalization

The latent variables have identified through extensive literature review. The latent variables for e-marketing of agriculture products are affiliate marketing, social media marketing, search engine optimization and e-mail marketing. Affiliate marketing is defined as the process of affiliating a website to another website to sell the products (Iwashita et al., 2018). Latent variables affiliate marketing can be measured by observed variables conversion rate, percentage of traffic generation, earning per click and return on aids click (Constantinides, 2002; Ballestar et al., 2018; Mariussen et al., 2010). Social media marketing is another latent variable that has a significant impact on e-marketing (Michaelidou et al., 2011). Social media marketing is referring to the process of gaining online traffic through social media platform (Balakrishnan et al., 2014). The positivity or like of the consumers towards products on social media platform can measure the effectiveness of social media (Erdoğan & Cicek, 2012). Interaction, differentiation, and accessibility are the observed variables that are used to measure social media marketing (Liu et al., 2019; Iankova et al., 2019 and Wang; 2017). Search engine optimization is one of the crucial tools for e-marketing. SEO has a significant impact on consumers and can influence their buying behaviour (Skiera et al., 2010). SEO is an extensively used technique for reaching websites (Jansen & Spink, 2006). Keywords, content, and quantity of traffic used as an observed variable to measure the latent variable SEO (Winer, 2009; Xiang & Pan, 2011 and Abou Nabout et al., 2012). E-mail marketing is the oldest platform of e-marketing. E-mail marketing is the process of sending a commercial message to potential customers through the mail (Ellis-Chadwick & Doherty, 2012). The observed variables personalization, target audience and frequency are used to construct and measured the latent variables of e-mail marketing (Ye et al, 2010; Hartemo, 2016; Poon & Swatman, 1999). The marketing mix is the set of controllable variables product, price, place, and promotion used by the companies to influence the buying response of the consumers (Wongleedee, 2015; Westerbeek & Shilbury, 1999; Constantinides, 2006; Pomeroy, 2017). The marketing mix variables has taken as a construct for e-marketing of agriculture products.

4.2 Sampling Strategy and Data Collection

This research was based on an empirical survey. Primary data was collected for this research. Data was collected by using a structured questionnaire. The sample size of 400 respondents in the Delhi region was considered for this study. The sample were selected randomly in Delhi city. Simple random

Table 1. Identification of variables

Construct	Identifications of variables	Items	References
Affiliate Marketing	Conversion rate	V11	Beugelsdijk et al. (2014)
	Percentage of traffic generation	V12	Constantinides (2002)
	Earning per click	V13	Mariussen et al. (2010)
	Return on Ads spend	V14	Ballestar et al. (2018)
Social Media Marketing	Positivity	V21	Erdoğan & Cicek (2012)
	Differentiation	V22	Iankova et al. (2019)
	Interaction	V23	Liu et al. (2019)
	Accessibility	V24	Wang (2017)
Search Engine Optimization	Content	V31	Xiang & Pan (2011)
	Keywords	V32	Winer (2009)
	Quantity of Traffic	V33	Abou Nabout et al. (2012)
E-Mail Marketing	Personalization	V41	Hartemo (2016)
	Target Audience	V42	Ye et al. (2010)
	Frequency	V43	Poon & Swatman (1999)
Agricultural Products E-Marketing	Product	V51	Westerbeek & Shilbury (1999)
	Price	V52	Constantinides (2006)
	Place	V53	Wongleedee (2015)
	Promotion	V54	Pomering (2017)

sampling technique was used for the study. Fifteen observed variables were identified from the review of the literature. These variables helped to measure the four antecedents affiliate marketing, social media marketing, search engine optimization and e-mail marketing of agricultural products e-marketing. Structured questionnaire was prepared based on identified variables. Structural equation modelling was used to test the hypothesis.

4.3 Instrument Development

The questionnaires were classified into two parts. The first part contains the personal information of the respondents whereas the second part contains the four antecedents i.e., affiliate marketing, social media marketing, search engine optimization, and e-mail marketing. The questionnaire was based on identified 15 observed variables. Each respondent was asked to provide their rating on 5-point Likert scale. On a rating scale, 1 meaning strongly disagree to 5 which means strongly agree. A pilot survey was conducted to measure the reliability of the variables. The Cronbach's alpha value of the variables was greater than 0.50. Hence all the identified variables were reliable. To measure the antecedent a scale has been developed.

Table 2 represents the three demographic profiles of respondents. The data was collected from 400 respondents out of which 47.25% were male whereas 52.75% were female. About 12.50% of the respondents were of the age between 25-35 years, 33.75% fell in between 35-45 years, and 37.25% fell in between 45-55 years whereas the remaining 16.50% were above 55 years. Based on income, 10% of respondents were having their income in between 15000-35000 INR, 23% between 35000-55000 INR, 26.25% between 55000-75000 INR, 27.75% of respondents were having income between 75000-95000 INR and the rest 13% respondents were having income above 95000 INR.

Table 2. Descriptive statistics

Variable	Categories	Frequency	Response (%)
Gender	Male	189	47.25%
	Female	211	52.75%
Age	25-35 Years	50	12.50%
	35-45 Years	135	33.75%
	45-55 Years	149	37.25%
	Above 55 Years	66	16.50%
Income	15000-35000	40	10.00%
	35000-55000	92	23.00%
	55000-75000	105	26.25%
	75000-95000	111	27.75%
	Above 95000	52	13.00%

5. DATA ANALYSIS

Structural Equation Modeling is a multivariate analysis technique. It is the combination of confirmatory factor analysis, regression analysis, and path analysis. It helps to determine the relationship between latent variables and observed variables. Structural equation modeling is the combination of the measurement model which is used to test the validity and reliability between the latent and observed variables and the structural model used to measure the path strength and the direction of latent variables. (McQuitty, 2004).

The measurement model was developed by applying confirmatory factor analysis using Amos 22. Table 3 shows a satisfactory level of reliability and validity. Testing of validity and reliability is essential before developing a structural model. Figure 1 shows the final measurement model of latent variables. The measurement model shows that four latent variables affiliate marketing, social media marketing, search engine optimization, and e-mail marketing is measured by 14 observed variables. Table 3 shows that the Cronbach alpha of each construct is greater than 0.7 which proves the reliability of the construct.

The validity of the construct is measured by using discriminant validity and convergent validity. The convergent validity represents the proportion of the variance of the construct. Factor loading is used to measure the validity of the construct. The regression weights are significant and show that observed variables are significant and represent the latent variables. The entire factor loading of observed variables is greater than 0.5 which shows that observed variables can measure the latent variables. This validates the convergent validity of the construct. Discriminant validity determines how the construct is distinct from others. There are two methods to measure discriminant validity. Firstly, the value of the correlation between the construct should not be very high. Secondly, the variance of the individual construct should be higher than the variance of the average construct.

5.1 Measurement Model

The model fit was tested by using different fit indices like the goodness of fit indices (GFI), comparative fit indices (CFI), Tucker Lewis indices (TLI), normed fit indices (NFI) and root mean square error approximation (RMSEA). For a model to be fit the chi-square value should be less than 3. The value of root means square error approximation (RMSEA) should be greater than 0.08 and the value of CFI, GFI, TLI, and NFI should be greater than 0.90.

Table 3. Reliability and factor loading

Construct	Items	Description	Factor Loading	Cronbach Alpha
Affiliate Marketing	V11	Conversion rate	0.82	0.83
	V12	Percentage of traffic generation	0.73	
	V13	Earning per click	0.64	
	V14	Return on Ads spend	0.89	
Social Media Marketing	V21	Positivity	0.62	0.91
	V22	Differentiation	0.58	
	V23	Interaction	0.68	
	V24	Accessibility	0.93	
Search Engine Optimization	V31	Content	0.71	0.87
	V32	Keywords	0.68	
	V33	Quantity of Traffic	0.82	
E-Mail Marketing	V41	Personalization	0.65	0.84
	V42	Target Audience	0.73	
	V43	Frequency	0.84	
Agricultural Products E-Marketing	V51	Product	0.78	0.89
	V52	Price	0.71	
	V53	Place	0.86	
	V54	Promotion	0.90	

Figure 1. Conceptual framework (Source: Ananda et al., 2016)

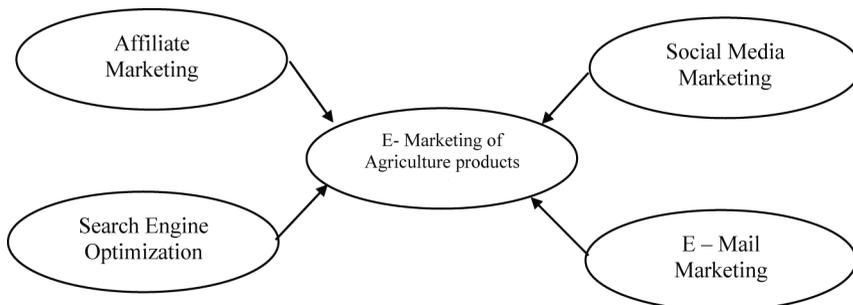


Table 4 represents that the value of chi-square is 2.245. The value of RMSEA is 0.047 and the value of GFI, CFI, TLI, and NFI is 0.98, 0.95, 0.91, and 0.96. Table 4 shows that the measurement model had a good fit so we can proceed with the structural model.

5.2 Structural Model

Structural equation modeling was used to test the hypothesis for the conceptual model. Table 5 shows that the value of chi-square is 2.134. The value of RMSEA is 0.049. The value of GFI, CFI, TLI, and NFI is 0.92, 0.94, 0.93 and 0.92 respectively. Since all the indices value is good to fit so we can move forward for further analysis.

Figure 2. Measurement model

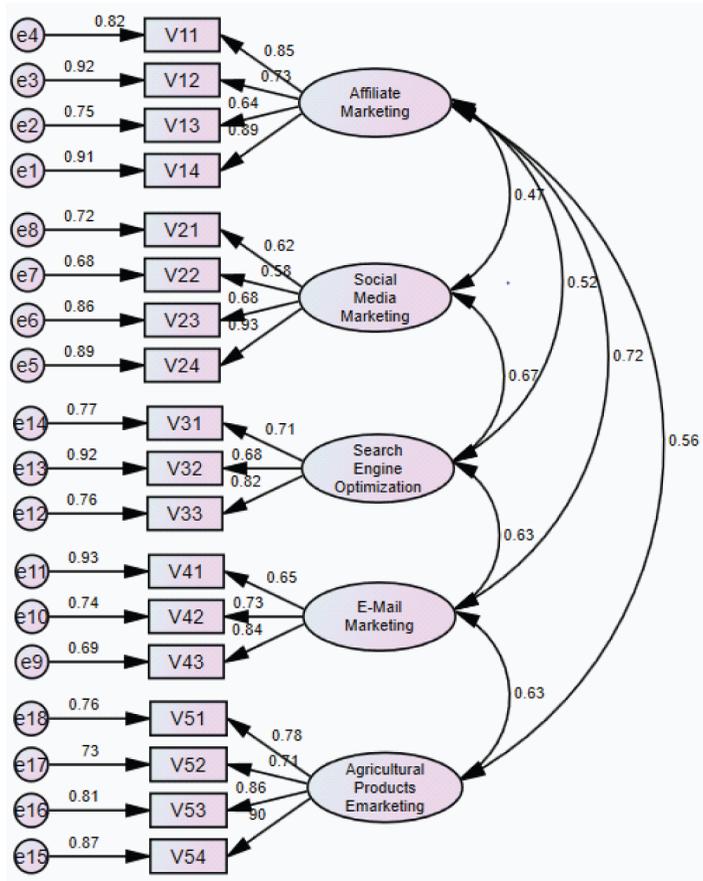


Table 4. Measurement Model: Goodness of Fit Indices

Model Fit Indices	Chi-Square	GFI	CFI	TLI	NFI	RMSEA
Model	2.245	0.98	0.95	0.91	0.96	0.047

Table 5. Structural Model: Goodness of Fit Indices

Model Fit Indices	Chi-Square	GFI	CFI	TLI	NFI	RMSEA
Model	2.134	0.92	0.94	0.93	0.92	0.049

Table 6 represents the β , critical ratio, standard error, and result of the hypothesis. The significance level of hypothesis testing is 0.05. The value of R^2 represents the coefficient of determination which measures the strength of the model. The obtained value of R^2 is 0.72 which shows that the four constructs explained 72% variation in agricultural product e-marketing. Table 6 also represents the hypothesis testing. The value of β shows the significant importance of the construct of agricultural products e-marketing.

Table 6. Hypothesis testing

Hypothesis	Estimates (β)	Unstandardized Regression Weight	S.E.	C.R.	p-Value	Squared Multiple Correlation	Result
H1	0.23	0.21	0.032	2.56	0.004	0.72	Supported
H2	0.61	0.58	0.041	3.86	0.023		Supported
H3	0.43	0.34	0.026	2.12	0.062		Supported
H4	0.34	0.29	0.021	1.86	0.032		Supported

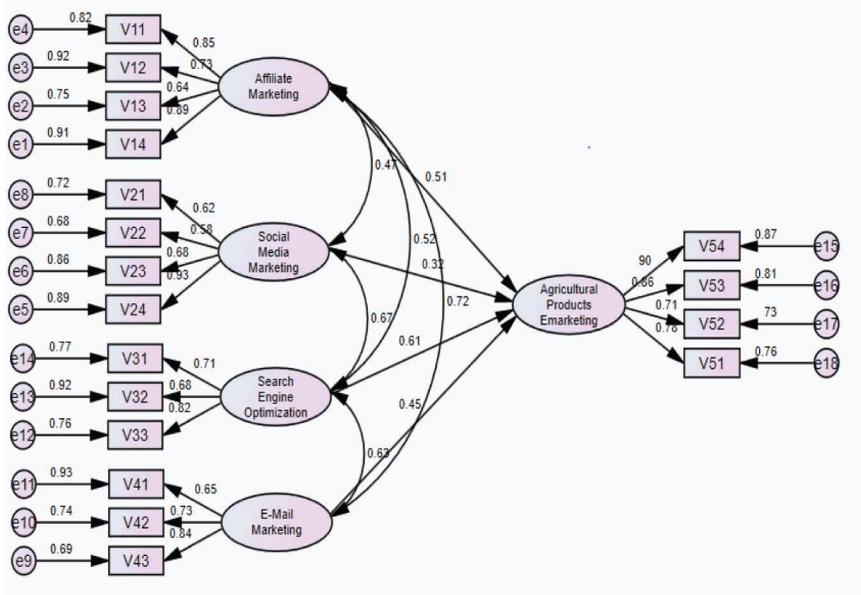
The most important significant factor of agricultural product e-marketing is social media marketing ($\beta=0.61, p < 0.05$). Hence, H2 which states that social media marketing has a significant impact on the e-marketing of agricultural products is supported. The second important factor of e-marketing of agricultural products is search engine optimization ($\beta = 0.43, p < 0.05$). So, H3 which states that search engine optimization has a significant impact on agricultural product e-marketing is also supported. The third and fourth factor of agricultural product e-marketing is e-mail marketing ($\beta = 0.34, p < 0.05$) and affiliate marketing ($\beta = 0.23, p < 0.05$). Hence, H4 and H1 are also supported.

6. DISCUSSION

6.1 Theoretical Implications

Consumer tastes and preferences are dynamic. The consumers buying behavior pattern is changing and consumers prefer to purchase their products through e-commerce websites (Kim & Ko, 2012). The farmers should focus on the digitalization to sell their agricultural products. In this research, the framework for the e-marketing of agricultural products has been developed (Feldmann & Hamm, 2015). The rural economy has a significant positive impact on behavioural variables of agro-products

Figure 3. Structural model for e-marketing of agriculture products



consumers (Alavion & Taghdisi, 2021). Agriculture products benefit greatly from the use of digital marketplaces. Digital platforms enable the customers to do the comparative analysis of agriculture products (Anshari et al., 2019). This study further explored the potential of e-marketing platform for the sales and promotion of agriculture products. The measurement model proved the reliability and validity of the construct (Baumgartner & Homburg, 1996). Farmers benefit from digital marketing since it expands their prospects and increases their income. Digital marketing enables the digital marketers to access the international market for agricultural products (Bowen & Morris, 2019). The digitalization process is transforming traditional agricultural processes and creating new market opportunities for agricultural products (Rijswijk et al., 2019). According to the findings, digital marketing is critical for agricultural products. Four important factors have been identified for digital marketing of agriculture products. All four antecedents viz. affiliate marketing, social media marketing, search engine optimization, and e-mail marketing were found to have a significant relationship with agricultural products e-marketing. The most important antecedent of agricultural products e-marketing is social media marketing ($\beta=0.61$, $p < 0.05$). Among all the digitalized platform social media marketing is the most effective platform to influence the consumers to purchase the agricultural products. So, it better for the agricultural product seller to use social media marketing for selling products. The second important antecedent of agricultural product e-marketing is search engine optimization ($\beta = 0.43$, $p < 0.05$). The third and fourth antecedent of agricultural product e-marketing is e-mail marketing ($\beta = 0.34$, $p < 0.05$) and affiliate marketing ($\beta = 0.23$, $p < 0.05$) respectively. The workforce demand has drastically changed as a result of the digital transition. Employees must be digitally trained to meet organizational goals (Siddoo et al., 2019). This study proposes a framework for agriculture product e-marketing that will assist the digital workforce in developing an integrated and profitable e-marketing strategy for agriculture products.

6.2 Managerial Implications

The agricultural products e-marketing is the new area for research and very little research have been conducted in this field. This research has a significant contribution in finding out the antecedent for e-marketing of agricultural products which enable the digital workforce to make an effective digital marketing strategy. Further relationship between agricultural products e-marketing and their antecedents have been measured. The outcome of this study will be useful for the digital workforce to sell agricultural products through different digital platforms. It will be beneficial for the consumers to purchase the products through digital platforms because it is hassle-free, and consumers get the agricultural product at their doorstep. The government is focusing and working on the digitalization of farmers. In present digitalized world, e-marketing could become an effective tool for the e-marketing of agriculture products. Consumers can purchase agro products by sitting at their home and products could be delivered to their doorstep. This study helps marketers to evaluate the different e-marketing platform for the sales of agriculture products. E-marketing platform i.e., social media marketing, search engine optimization, affiliate marketing and e-mail marketing generate big data consisting of information of consumers. This big data helps marketers and decision-makers to analyse the buying behaviour pattern of the consumers. Even this digital platform generates billion of data on the daily basis. E-marketing of agriculture products is more convenient and it's continuously attractive the consumers towards a digital platform. The output of the research helps the digital workforce to make the consumers shopping more comfortable. In traditional marketing, it is difficult to trace the consumers but in e-marketing, marketers easily trace the consumers. The study helps to monitor and evaluate the dynamic buying behaviour of the consumers. The findings of this study present several implications to achieve excellence in understanding consumer behaviour. The digital workforce can attain excellence in e-marketing by analysing the behaviour of consumers towards the e-marketing platform. The role of the digital workforce is very challenging. They are responsible to enhance the sales volume of agriculture products through digital platforms.

7. CONCLUSION

The findings of this research demonstrate that digital marketing of agricultural products is a pressing requirement. Consumers in the digitalized world prefer not to go to a physical store; instead, they purchase agriculture products by just clicking on their laptop or smartphone. In this study, we provide evidence of the relationship between social media marketing, search engine optimization, affiliate marketing and e-mail marketing of agriculture products. Our results show that different e-marketing platform has a significant positive impact on e-marketing of agriculture products. E-marketing revolutionizes the marketing of agricultural products. It can track the consumers and analyse the buying behaviour of the consumers. The digital workforce can influence consumers to purchase agricultural products using an e-marketing platform. E-marketing of agriculture products is beneficial and convenient for both seller and buyer. Digital marketing of agriculture products provides the opportunities to the youths especially those who live in rural areas. There is huge potential of digital marketing in rural India. Digital marketing of agriculture products is providing the new business model for e-commerce companies. The outcome of the research supports the developed model and hypothesis. The study helps to understand the effects of e-marketing on consumers buying behaviour. A lot of attention has been given to developing research methodology, data collection and data analysis. The study contributes significantly to accumulate the knowledge of e-marketing in the sales and promotion of agriculture products. Digital marketing is the booming industry. E-commerce companies are showing enthusiasm towards digital marketing. Digital marketing becomes an emerging tool to sell the products in smother manner. The outcome of this study helps the digital workforce to adopt and implement the e-marketing strategy for agriculture products suggested in this research. To summarise, the internet has accelerated the rate of growth and offered businesses with unparalleled growth potential. With the advent of digital marketing, businesses can now cater to the requirements of a bigger client base in a shorter amount of time. Although there are numerous growth prospects that will significantly improve earnings for a company, it is critical that business organizations focus on meeting the requirements of their consumers rather than maximising profits.

7.1 Contribution to Theory

Extensive literature review has been done on e-marketing but there is a lack of study on e-marketing of agriculture products. This study is based on measuring the impact of e-marketing of agriculture products. This study used structural equation modeling as a multivariate tool to measure the impact of e-marketing on sales and promotion of agriculture products. Marketing mix have four important elements i.e., product, price, place and promotion. These elements have been used to measure the latent variables e-marketing of agriculture products. The outcome of the study enhances the capabilities of digital workforce to design effective e-marketing strategy.

7.2 Limitation and Future Scope of the Study

As like other research, this study has also some limitations which can be explore further and could be future scope of the research. E-marketing of agriculture products is still in its growth phase. This study considers only four e-marketing platform i.e., social media marketing, affiliate marketing, search engine optimization and e-mail marketing. Exploring more e-marketing platform for agriculture products like gamification marketing could be the future scope of the study.

REFERENCES

- Abou Nabout, N., Skiera, B., Stepanchuk, T., & Gerstmeier, E. (2012). An analysis of the profitability of fee-based compensation plans for search engine marketing. *International Journal of Research in Marketing*, 29(1), 68–80. doi:10.1016/j.ijresmar.2011.07.002
- Akar, E., & Topçu, B. (2011). An examination of the factors influencing consumers' attitudes toward social media marketing. *Journal of Internet Commerce*, 10(1), 35–67. doi:10.1080/15332861.2011.558456
- Alavion, S. J., Allahyari, M. S., Al-Rimawi, A. S., & Surujlal, J. (2017). Adoption of agricultural E-marketing: Application of the theory of planned behavior. *Journal of International Food & Agribusiness Marketing*, 29(1), 1–15. doi:10.1080/08974438.2016.1229242
- Alavion, S. J., & Taghdisi, A. (2021). Rural E-marketing in Iran; Modeling villagers' intention and clustering rural regions. *Information Processing in Agriculture*, 8(1), 105–133. doi:10.1016/j.inpa.2020.02.008
- Ali, J., & Kumar, S. (2011). Information and communication technologies (ICTs) and farmers' decision-making across the agricultural supply chain. *International Journal of Information Management*, 31(2), 149–159. doi:10.1016/j.ijinfomgt.2010.07.008
- Ananda, A. S., Hernández-García, Á., & Lamberti, L. (2016). N-REL: A comprehensive framework of social media marketing strategic actions for marketing organizations. *Journal of Innovation & Knowledge*, 1(3), 170–180. doi:10.1016/j.jik.2016.01.003
- Anshari, M., Almunawar, M. N., Masri, M., & Hamdan, M. (2019). Digital marketplace and FinTech to support agriculture sustainability. *Energy Procedia*, 156(January), 234–238. doi:10.1016/j.egypro.2018.11.134
- Arayesh, M. B. (2015). Investigating the financial and legal-security infrastructure affecting the electronic marketing of agricultural products in Ilam Province. *Procedia: Social and Behavioral Sciences*, 205(October), 542–549. doi:10.1016/j.sbspro.2015.09.071
- Aswani, R., Kar, A. K., Ilavarasan, P. V., & Dwivedi, Y. K. (2018). Search engine marketing is not all gold: Insights from Twitter and SEO Clerks. *International Journal of Information Management*, 38(1), 107–116. doi:10.1016/j.ijinfomgt.2017.07.005
- Balakrishnan, B. K., Dahnail, M. I., & Yi, W. J. (2014). The impact of social media marketing medium toward purchase intention and brand loyalty among generation Y. *Procedia: Social and Behavioral Sciences*, 148(August), 177–185. doi:10.1016/j.sbspro.2014.07.032
- Ballestar, M. T., Grau-Carles, P., & Sainz, J. (2018). Customer segmentation in e-commerce: Applications to the cashback business model. *Journal of Business Research*, 88(July), 407–414. doi:10.1016/j.jbusres.2017.11.047
- Baourakis, G., Kourgiantakis, M., & Migdalas, A. (2002). The impact of e-commerce on agro-food marketing: The case of agricultural cooperatives, firms and consumers in Crete. *British Food Journal*, 104(8), 580–590. doi:10.1108/00070700210425976
- Baumgartner, H., & Homburg, C. (1996). Applications of structural equation modeling in marketing and consumer research: A review. *International Journal of Research in Marketing*, 13(2), 139–161. doi:10.1016/0167-8116(95)00038-0
- Behera, B. S., Panda, B., Behera, R. A., Nayak, N., Behera, A. C., & Jena, S. (2015). Information communication technology promoting retail marketing in agriculture sector in India as a study. *Procedia Computer Science*, 48, 652–659. doi:10.1016/j.procs.2015.04.148
- Beugelsdijk, S., Slangen, A., Maseland, R., & Onrust, M. (2014). The impact of home–host cultural distance on foreign affiliate sales: The moderating role of cultural variation within host countries. *Journal of Business Research*, 67(8), 1638–1646. doi:10.1016/j.jbusres.2013.09.004
- Bosona, T., & Gebresenbet, G. (2013). Food traceability as an integral part of logistics management in food and agricultural supply chain. *Food Control*, 33(1), 32–48. doi:10.1016/j.foodcont.2013.02.004
- Bowen, R., & Morris, W. (2019). The digital divide: Implications for agribusiness and entrepreneurship. Lessons from Wales. *Journal of Rural Studies*, 72(December), 75–84. doi:10.1016/j.jrurstud.2019.10.031

- Calzolari, L., Gilliland, D., & Rossi, F. (2012). Measuring nanoparticles size distribution in food and consumer products: A review. *Food Additives & Contaminants: Part A*, 29(8), 1183–1193. doi:10.1080/19440049.2012.689777 PMID:22725833
- Chaudhary, S., & Suri, P. K. (2020). Examining Adoption of eNAM Platform for Transforming Agricultural Marketing in India. In *Transforming Organizations Through Flexible Systems Management* (pp. 243–256). Springer. doi:10.1007/978-981-13-9640-3_14
- Chauhan, K. (2014). Assessment of Electronic-based Integrated Marketing Communication for Rural Areas in North India. In *Organisational Flexibility and Competitiveness* (pp. 197–211). Springer. doi:10.1007/978-81-322-1668-1_14
- Chen, C. Y., Shih, B. Y., Chen, Z. S., & Chen, T. H. (2011). The exploration of internet marketing strategy by search engine optimization: A critical review and comparison. *African Journal of Business Management*, 5(12), 4644–4649.
- Constantinides, E. (2002). The 4S web-marketing mix model. *Electronic Commerce Research and Applications*, 1(1), 57–76. doi:10.1016/S1567-4223(02)00006-6
- Constantinides, E. (2006). The marketing mix revisited: Towards the 21st century marketing. *Journal of Marketing Management*, 22(3-4), 407–438. doi:10.1362/026725706776861190
- Ellis-Chadwick, F., & Doherty, N. F. (2012). Web advertising: The role of e-mail marketing. *Journal of Business Research*, 65(6), 843–848. doi:10.1016/j.jbusres.2011.01.005
- Erdoğan, İ. E., & Cicek, M. (2012). The impact of social media marketing on brand loyalty. *Procedia: Social and Behavioral Sciences*, 58(October), 1353–1360. doi:10.1016/j.sbspro.2012.09.1119
- Feder, G., & Umali, D. L. (1993). The adoption of agricultural innovations: A review. *Technological Forecasting and Social Change*, 43(3-4), 215–239. doi:10.1016/0040-1625(93)90053-A
- Feldmann, C., & Hamm, U. (2015). Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference*, 40(March), 152–164. doi:10.1016/j.foodqual.2014.09.014
- Fu, H., Manogaran, G., Wu, K., Cao, M., Jiang, S., & Yang, A. (2020). Intelligent decision-making of online shopping behavior based on internet of things. *International Journal of Information Management*, 50(February), 515–525. doi:10.1016/j.ijinfomgt.2019.03.010
- Gerrikagoitia, J. K., Castander, I., Rebón, F., & Alzua-Sorzabal, A. (2015). New trends of Intelligent E-Marketing based on Web Mining for e-shops. *Procedia: Social and Behavioral Sciences*, 175(1), 75–83. doi:10.1016/j.sbspro.2015.01.1176
- Gktoday report, APMC Act 2003: Overview, Provisions and Issues. (2021). <https://www.gktoday.in/topic/apmc-act-2003/>
- Goyal, M. R., & Eilu, E. (Eds.). (2019). *Digital Media and Wireless Communications in Developing Nations: Agriculture, Education, and the Economic Sector*. CRC Press.
- Hartemo, M. (2016). Email marketing in the era of the empowered consumer. *Journal of Research in Interactive Marketing*, 10(3), 212–230. doi:10.1108/JRIM-06-2015-0040
- Herhausen, D., Miočević, D., Morgan, R. E., & Kleijnen, M. H. (2020). The digital marketing capabilities gap. *Industrial Marketing Management*, 90(October), 276–290. doi:10.1016/j.indmarman.2020.07.022
- Iankova, S., Davies, I., Archer-Brown, C., Marder, B., & Yau, A. (2019). A comparison of social media marketing between B2B, B2C and mixed business models. *Industrial Marketing Management*, 81(August), 169–179. doi:10.1016/j.indmarman.2018.01.001
- Iwashita, M., Tanimoto, S., & Tsuchiya, K. (2018). Framework of highly secure transaction management for affiliate services of video advertising. *Procedia Computer Science*, 126, 1802–1809. doi:10.1016/j.procs.2018.08.097
- Jansen, B. J., & Spink, A. (2006). How are we searching the World Wide Web? A comparison of nine search engine transaction logs. *Information Processing & Management*, 42(1), 248–263. doi:10.1016/j.ipm.2004.10.007

- Kiang, M. Y., Ye, Q., Hao, Y., Chen, M., & Li, Y. (2011). A service-oriented analysis of online product classification methods. *Decision Support Systems*, 52(1), 28–39. doi:10.1016/j.dss.2011.05.001
- Kim, A. J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research*, 65(10), 1480–1486. doi:10.1016/j.jbusres.2011.10.014
- Liao, M. J., Zhang, J., Wang, R. M., & Qi, L. (2020). Simulation research on online marketing strategies of branded agricultural products based on the difference in opinion leader attitudes. *Information Processing in Agriculture*. Advance online publication. doi:10.1016/j.inpa.2020.12.001
- Liu, X., Shin, H., & Burns, A. C. (2019). Examining the impact of luxury brand's social media marketing on customer engagement: Using big data analytics and natural language processing. *Journal of Business Research*, 125(March), 815–826.
- Mariussen, A., Daniele, R., & Bowie, D. (2010). Unintended consequences in the evolution of affiliate marketing networks: A complexity approach. *Service Industries Journal*, 30(10), 1707–1722. doi:10.1080/02642060903580714
- McQuitty, S. (2004). Statistical power and structural equation models in business research. *Journal of Business Research*, 57(2), 175–183. doi:10.1016/S0148-2963(01)00301-0
- Michaelidou, N., Siamagka, N. T., & Christodoulides, G. (2011). Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial Marketing Management*, 40(7), 1153–1159. doi:10.1016/j.indmarman.2011.09.009
- Ohe, Y., & Kurihara, S. (2013). Evaluating the complementary relationship between local brand farm products and rural tourism: Evidence from Japan. *Tourism Management*, 35(April), 278–283. doi:10.1016/j.tourman.2012.07.003
- Pei, Z., & Yan, R. (2019). Cooperative behavior and information sharing in the e-commerce age. *Industrial Marketing Management*, 76(January), 12–22. doi:10.1016/j.indmarman.2018.06.013
- Pentina, I., & Hasty, R. W. (2009). Effects of multichannel coordination and e-commerce outsourcing on online retail performance. *Journal of Marketing Channels*, 16(4), 359–374. doi:10.1080/10466690903188021
- Pomeroy, A. (2017). Marketing for sustainability: Extending the conceptualisation of the marketing mix to drive value for individuals and society at large. *Australasian Marketing Journal*, 25(2), 157–165. doi:10.1016/j.ausmj.2017.04.011
- Poon, S., & Swatman, P. M. (1999). An exploratory study of small business Internet commerce issues. *Information & Management*, 35(1), 9–18. doi:10.1016/S0378-7206(98)00079-2
- Rao, C. S., Kareemulla, K., Krishnan, P., Murthy, G. R. K., Ramesh, P., Ananthan, P. S., & Joshi, P. K. (2019). Agro-ecosystem based sustainability indicators for climate resilient agriculture in India: A conceptual framework. *Ecological Indicators*, 105(October), 621–633.
- Rijswijk, K., Klerkx, L., & Turner, J. A. (2019). Digitalisation in the New Zealand Agricultural Knowledge and Innovation System: Initial understandings and emerging organisational responses to digital agriculture. *NJAS Wageningen Journal of Life Sciences*, 90(December), 100313. doi:10.1016/j.njas.2019.100313
- Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, 5(10), 1–14. doi:10.1016/j.heliyon.2019.e02690 PMID:31720459
- Shaltoni, A. M., & West, D. C. (2010). The measurement of e-marketing orientation (EMO) in business-to-business markets. *Industrial Marketing Management*, 39(7), 1097–1102. doi:10.1016/j.indmarman.2009.06.011
- Sheikh, A. A., Rana, N. A., Inam, A., Shahzad, A., & Awan, H. M. (2018). Is e-marketing a source of sustainable business performance? Predicting the role of top management support with various interaction factors. *Cogent Business & Management*, 5(1), 1–22. doi:10.1080/23311975.2018.1516487
- Sheth, J. N., & Sharma, A. (2005). International e-marketing: Opportunities and issues. *International Marketing Review*, 22(6), 611–622. doi:10.1108/02651330510630249
- Siddoo, V., Sawattawee, J., Janchai, W., & Thinnukool, O. (2019). An exploratory study of digital workforce competency in Thailand. *Heliyon*, 5(5), 1–12. doi:10.1016/j.heliyon.2019.e01723 PMID:31193339

- Singla, S., & Sagar, M. (2012). Integrated risk management in agriculture: An inductive research. *The Journal of Risk Finance*, 13(3), 199–214. doi:10.1108/15265941211229235
- Skiera, B., Eckert, J., & Hinz, O. (2010). An analysis of the importance of the long tail in search engine marketing. *Electronic Commerce Research and Applications*, 9(6), 488–494. doi:10.1016/j.elerap.2010.05.001
- Spilker-Attig, A., & Brettel, M. (2010). Effectiveness of online advertising channels: A price-level-dependent analysis. *Journal of Marketing Management*, 26(3-4), 343–360. doi:10.1080/02672571003594663
- Suhartanto, D., Helmi Ali, M., Tan, K. H., Sjahroeddin, F., & Kusdibyo, L. (2019). Loyalty toward online food delivery service: The role of e-service quality and food quality. *Journal of Foodservice Business Research*, 22(1), 81–97. doi:10.1080/15378020.2018.1546076
- Thompson, J., & Scoones, I. (2009). Addressing the dynamics of agri-food systems: An emerging agenda for social science research. *Environmental Science & Policy*, 12(4), 386–397. doi:10.1016/j.envsci.2009.03.001
- Truong, Y., & Simmons, G. (2010). Perceived intrusiveness in digital advertising: Strategic marketing implications. *Journal of Strategic Marketing*, 18(3), 239–256. doi:10.1080/09652540903511308
- Veeranjaneyulu, K. (2014). KrishiKosh: An institutional repository of national agricultural research system in India. *Library Management*, 35(4/5), 345–354. doi:10.1108/LM-08-2013-0083
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. doi:10.1016/j.jsis.2019.01.003
- Wang, Z., & Kim, H. G. (2017). Can social media marketing improve customer relationship capabilities and firm performance? Dynamic capability perspective. *Journal of Interactive Marketing*, 39, 15–26. doi:10.1016/j.intmar.2017.02.004
- Wells, L. E., Farley, H., & Armstrong, G. A. (2007). The importance of packaging design for own-label food brands. *International Journal of Retail & Distribution Management*, 35(9), 677–690. doi:10.1108/09590550710773237
- Westerbeek, H. M., & Shilbury, D. (1999). Increasing the focus on “place” in the marketing mix for facility dependent sport services. *Sport Management Review*, 2(1), 1–23. doi:10.1016/S1441-3523(99)70087-2
- Winer, R. S. (2009). New communications approaches in marketing: Issues and research directions. *Journal of Interactive Marketing*, 23(2), 108–117. doi:10.1016/j.intmar.2009.02.004
- Wongleedee, K. (2015). Marketing mix and purchasing behavior for community products at traditional markets. *Procedia: Social and Behavioral Sciences*, 197(July), 2080–2085. doi:10.1016/j.sbspro.2015.07.323
- Xiang, Z., & Pan, B. (2011). Travel queries on cities in the United States: Implications for search engine marketing for tourist destinations. *Tourism Management*, 32(1), 88–97. doi:10.1016/j.tourman.2009.12.004
- Ye, B. H., Barreda, A. A., Okumus, F., & Nusair, K. (2019). Website interactivity and brand development of online travel agencies in China: The moderating role of age. *Journal of Business Research*, 99(June), 382–389. doi:10.1016/j.jbusres.2017.09.046
- Ye, J., Rust, G., Fry-Johnson, Y., & Strothers, H. (2010). E-mail in patient–provider communication: A systematic review. *Patient Education and Counseling*, 80(2), 266–273. doi:10.1016/j.pec.2009.09.038 PMID:19914022
- Zhang, Y., Wang, L., & Duan, Y. (2016). Agricultural information dissemination using ICTs: A review and analysis of information dissemination models in China. *Information Processing in Agriculture*, 3(1), 17–29. doi:10.1016/j.inpa.2015.11.002