FOOD
RESEARCH

Application of social media in advertising the fresh fruits and vegetables products: case study in Gombak, Selangor, Malaysia

[1]Ghazali, M.I., [1,*]Aziz, N.N.H. and [2]Saili, A.R.

[1]*Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA UiTM (Melaka) Jasin Campus, 77300 Merlimau, Melaka, Malaysia*

[2]*Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA UiTM (Sarawak) Samarahan Campus, Jalan Meranek, 94300 Kota Samarahan, Sarawak, Malaysia*

Abstract

Advertising is not a new platform in marketing, especially for people involved in business. This research focused on the application of social media in advertising fresh fruits and vegetable products in Gombak, Selangor. In this research, two objectives were involved: to determine factors of application of social media in advertising fresh fruits and vegetables among farmers and to determine the relationship between the independent variables and dependent variables. A simple random sampling technique was used to determine the sample size. The researcher carried out three analyses to analyze the result. Firstly, descriptive analysis was used to analyze the demographic of respondents. Next, correlation analysis was used to determine the relationship between the independent variables and dependent variables. The result showed three hypotheses that have positive and strong significance between the independent variables and dependent variables. Lastly, in order to answer the second objective, factor analysis was used to analyze the factors that influence the application of social media in advertising fresh fruits and vegetables among farmers. The factors consisted of cost-effective, social media marketing tools, and promotion. The result indicated in factor loading showed there was a good relationship between cost-effective, social media marketing tools and promotion with advertising of fresh fruits and vegetables.

1. Introduction

Advertising on social media platforms like Facebook, the most widely used of these, allows users to interact with it on a whole new level (Gangadharbatla *et al*., 2014). Hendricks and NoorAl-Deen (2011) reported that social media sites like Flickr, Twitter, YouTube, Instagram, and Facebook have grown in popularity and acceptability over the past decade, and the number of individuals using them has increased. As a result of social media's impact on business strategy development, it has helped to establish a strong bond between the company and its customers, which has led to its success (Agresta and Bough, 2011).

Advertising in social media like Facebook, Instagram, WhatsApp, and other platforms reduces or uses a low cost in the market or promotes products. According to Odediran (2020), businesses are using social media to their advantage, boosting product reach, and is considered a cost-saving technique due to the low cost of setup and deployment. According to Newberry

and Maclachlan (2019), it is estimated that the average monthly cost of advertising on Facebook runs between $200 and $2000. As documented by DigitalResources (2019), it costs around $500,000 to air a successful television ad with an estimated $7 to 1000 viewers. However, reaching the same amount of people on Facebook costs just $0.25 (Odediran, 2020). This makes the statement by Newberry and Maclachlan (2019) become stronger that social media had provided lower costs for users.

The number of using social media in 2022 was about 3.6 billion around the world and it will continue to increase to 4.41 billion by 2025 (Clement, 2020). It shows the use of social media in the world has become more incredible, especially for the young generation. Duong (2020) mentioned that social media has the ability to develop content and user-friendly platforms, potentially giving information on jobs, and giving the ability to improve their potential on the internet to increase their popularity.

*Corresponding author.

Email: *nabila7372@uitm.edu.my*

According to Puomisto (2020), the Facebook platform allowed for long-term content planning and scheduling, as well as the ability to update and change material as needed. It shows that Facebook helps to ease the user's daily work. According to Puomisto (2020), Facebook Ads displayed in the form of videos gave the users to reach the target market easily. This gives the opportunity to the farmers to increase their customers' reach for their products.

WhatsApp was one of the social media that is very familiar and has mostly been used by people for communication, education and also marketing. This application connected people and was a prodigious app. For instance, a WhatsApp business account connects sellers and end users efficiently. The research from Gonte (2018) mentioned that with the use of WhatsApp groups, farmers may benefit from timely market information and increase farm product sales by building strong connections with the stakeholders or among farmers such as communication through email, text SMS and WhatsApp messaging. For farmers, WhatsApp will improve their communication with customers to ensure they would get the best information about their farm products.

According to Pessala (2016), by using Instagram advertisements, potential customers could directly connect with the sellers when they want to buy the goods. There was no involvement of a third party or middleman, and the potential customers could have two-way communications with the sellers such as liking and commenting on the advertisements that had been made by the sellers. According to Odediran (2020), YouTube allowed producers to post videos for free, and viewers may choose which channels to follow based on their preferences. With YouTube, users could make some videos about their production in order to attract customers and upload them to this platform without cost.

According to Schwemmer and Ziewiecki (2018), adolescents may readily be reached by YouTubers through social media material, and it makes them potential target audiences for product advertising on social media platforms like YouTube. Using YouTube makes youngsters give a good reaction.

The promotion was one of the tools in advertising. It has become an essential tool since it could give exposure to potential customers. Other than just posting products using pictures or videos through social media, farmers also could use promotional advertising in social media. With the promotion, customers will be interested to know about the information of products, and it gives the farmers the opportunity of getting more customers. Social media allows farmers to connect with their potential customers since social media like Facebook offer the features to find what they like most. Using groups or pages on Facebook gives opportunities to users to get their favourite things (Kurniawan, 2017). In addition, farmers have a chance to increase their sales through promotion on social media. This study aimed to determine the relationship between the independent and dependent variables and to determine the factors that influence the application of social media in advertising among fresh fruit and vegetables farmers.

2. Materials and methods

This research was carried out by using the primary data and a set of questionnaires on the application of social media in advertising fresh fruits and vegetable products have been distributed to the farmers in order to collect the data. The researcher analyzed all the variable data and summarized the influential factors which are cost-effective, social media marketing tools and promotion. Three types of data analysis have been run to obtain the results. The descriptive analysis is done to demonstrate the demofactorriables, then the Pearson correlation analysis is used to investigate the relationship between independent variables and dependent variables and lastly, to identify the strength of relationship among the factors, we employed the factor analysis to gain the results.

3. Results and discussion

3.1 Correlation analysis and cost-effective

Table 1 shows the result of the correlation analysis, the cost-effective had a significant relationship with the advertising of fresh fruits and vegetables products with a correlation coefficient is 0.657. It shows a good positive relationship between cost-effective and advertising. Weinberg (2009) reported that cost-effective is one of the main benefits when advertising using social media marketing. Cost-effective is one of the factors that make social media the best platform for advertising because it avoids the higher cost. The research by Nadaraja and Yazdanifard (2018) reported that mostly in social media marketing gives free services and access to create a profile and make posting about any information but using traditional marketing will cost millions of dollars. Many costs could be cut off by using social media and this platform will also help the farmers to get more profits.

3.2 Social media marketing tools

The factor of social media marketing tools was analyzed. It shows that there was a significant relationship between social media marketing tools and the advertising of fresh fruits and vegetable products

Table 1. Results of correlation analysis.

Independent Variables	DV: Advertising the Fresh Fruits and Vegetables Products
Cost-Effective Pearson Correlation	0.657**
Sig. (2-tailed)	0.000
N	96
Social Media tool Pearson Correlation	0.661**
Sig. (2-tailed)	0.000
N	96
Promotion Pearson Correlation	0.640**
Sig. (2-tailed)	0.000
N	96

**Correlation is significant at the 0.01 level (2-tailed).

with r-value is 0.661. Many farmers agreed that social media tools such as Facebook, Whatsapp, Instagram and YouTube can provide free online marketing platforms to advertise their farm products to potential customers. It was supported by the study from Naruka *et al.* (2017) whereby they reported that social media such as YouTube, Facebook, Twitter, and LinkedIn were the most popular platforms for agricultural marketing and, they used social media for sharing their information about their agribusiness. Furthermore, young farmers relied more on social media as marketing tools for their agricultural products and, they get more information from YouTube, WhatsApp, and Facebook (Naruka *et al.*, 2017).

Hence, it is evidenced that social media marketing tools were the higher dominant factor that influenced advertising for fresh fruits and vegetable production. This was because with social media farmers could easily show information about the products to the customers such as the quality. It was supported by Bai *et al.* (2015), who reported that during the purchase of products on social media platforms, consumers acquire information about the quality of products.

3.3 Promotion

The promotion also had a significant relationship with advertising of fresh fruits and vegetable products with the coefficient correlation being 0.640. Based on the previous research by Chakrabortty *et al.* (2013) market can be increased through promotion activities. Furthermore, Chakrabortty *et al.* (2013) also reported that product promotion can be an efficient marketing tool. The promotion had a big impact on the advertising. It could have an impact on improving the branding of the products. Mela *et al.* (1997), reported that using promotion can boost the brand of the products by increasing experience and familiarity with the products. The results of this study revealed that promotion would improve the brands of farm products, and this could increase the sales of the farmers.

3.4 Factor analysis

Table 4 shows the KMO value was 0.745 and very acceptable for factor analysis. According to Field (2009), KMO and the overall measure of sampling adequacy (MSA) should at least be 0.6 and above for good factor analysis. If the values were greater than 0.6 which is near 1 it will show that it was a good factor analysis. Based on Table 2, the KMO value was 0.745, which can be considered a good factor and acceptable. Bartlett's Test of Sphericity was significant at a 1% level of significance. The Chi-Square value for Bartlett's Test of Sphericity was 284.429 with the degree of freedom (df) 21.

Table 2. KMO and Barlett's test.

Kaiser-Meyer-Olkin Measure of Sampling		0.745
Bartlett's Test of Sphericity	Approx. Chi-Square	285.429
	df	21
	Sig.	0.000

The cut-off point for communalities was 0.4, which is generally accepted by social researchers (Tabachnick and Fidell, 2014). The highest communalities value was 0.879 and the lowest was 0.687. The overall reliability of the selected variables was 0.822 (Table 3).

The dominant factor toward the advertising for the fruits and vegetable products was summarized in Table 4. The factor was arranged according to the percentages of total variance explained and the higher dominant factors between cost-effective, social media marketing tools, and promotion towards advertising fresh fruits and vegetable products were acknowledged. Table 4 shows that the dominant factor that influenced advertising for fresh fruits and vegetable production is the social media marketing tool.

The first factor was the social media marketing analysis factor that influenced the advertising of fresh fruits and vegetables products for farmers. This factor contained three sub-variables that were, posting a picture or video about the agricultural product on social media increased the interest in customers to buy vegetables and

Table 3. Variables and communalities value

Variables	Communalities
1 Reduce cost is an important element in advertising products	0.705
2 I think the cost is decreasing and getting more profits went using social media advertising than using middlemen	0.846
3 Social media is the most common platform for introducing and selling many products	0.687
4 Posting the picture or videos about the agricultural product on social media increased the interest of my customers to buy vegetables and fruits	0.879
5 In my opinion, social media is the best marketing tool to market the products face-to-face with customers	0.788
6 This social media can be profitable to business developers and business innovating strategies	0.811
7 Promotion with social media advertising gives more attraction to customers than the traditional advertising	0.796
Cronbach's Alpha: 0.822	

Note: n = 96
Extraction Method: Principal Component Analysis (PCA)

Tables 4. Rotated component matrix.

Variables	Factor loading
Factor 1: Social media marketing tools	
1 Posting pictures or videos about the agricultural product on social media increased the interest of my customers to buy vegetables and fruits. In my opinion, social media is the best marketing tool compared to marketing products face-to-face with customers.	0.903
2 Social media is the most common platform for introducing and selling many products.	0.843
Factor 2: Promotion	
3 Promotion with social media advertising attracts customers more than traditional advertising.	0.798
This social media can be profitable to business developers and business innovating strategies.	
Factor 3: Cost Effective	
I think the cost is decreasing and getting more profits went using social media advertising than using	0.858
Reduce cost is an important element in advertising products	

a. Rotation converged in 5 iterations.

Descriptive	F1	F2	F3
Cronbach's Alpha	0.860	0.756	0.656
Eigenvalues	3.525	1.121	0.865
Percentage of variance (%)	50.353	16.018	12.359
Cumulative percentage of variance (%)	50.353	66.371	78.730

Extraction Method: Principal Component Analysis (PCA)
Rotation Method: Varimax with Kaiser Normalization

fruits (0.903), suggesting that social media is the best marketing tool than marketing the products face to face with customers (0.843), and social media is the most common platform for introducing and selling many products (0.798). The Cronbach's alpha score for these items was (0.860), which was above the suggested level (Hair *et al*., 2010). The cumulative variance in this customer age factor was 50.353% and the eigenvalue was 3.525. The eigenvalue of any component with a value greater than one explains more variation than a single observable variable. It shows that the eigenvalue was higher than 1 and its acceptance. From the result, social media marketing tools were the highest and dominant factor in this analysis. This indicated that a few respondents have some awareness of social media marketing tools in advertising. According to Bai *et al*.

(2015), during the purchase of products on social media platforms, consumers acquire information about the quality of products. It showed that by using social media marketing tools, farmers can share information about their products with customers effectively. This statement supports that social media marketing tools are one of the main factors that will influence advertising for fresh fruits and vegetable products online.

The data extraction aimed to reduce many items into factors (Williams *et al*., 2010). After the data extraction was made, the promotion factor got only two sub-variables from five of the sub-variables after the analysis had been carried out. In the promotion factor, the two sub-variables which were promotion with social media advertising give more attraction to customers than the traditional advertising (0.858). This social media can be

Table 5. Total variance explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.525	50.353	50.353	3.525	50.353	50.353
2	1.121	16.018	66.372	1.121	16.018	66.372
3	0.865	12.359	78.730	0.865	12.359	78.730

profitable to business developers and business innovating strategies (0.853). For promotion, factors have got only two sub-variables from five sub-variables. The items were accepted as the value was in the acceptable range. The Cronbach's alpha score for two sub-variables was (0.756), which is above the suggested level (Tabanchnick and Fidell, 2014). The cumulative percentage of variance in the promotion factor was 66.371% with an eigenvalue of 1.121.

Based on Table 5 above, it showed that two factors are extracted, and the eigenvalues are greater than 1, factor 1 (social media marketing tools) and factor 2 (promotion). The eigenvalues related to each factor represent the variance explained by specific linear elements and SPSS also shows the eigenvalue in the percentage of variance explained (Field, 2005). The first factor explains the large value of variance while the following factor explains the small value of variance and descends after that. From the Rotated Component Matrix, these are the three factors that are being computed. The most dominant factor was the social media marketing tools factor (50.353%), followed by the promotion factor (16.018%), and the cost-effective factor (12.359%) of the variance explained. It was 78.730% of the total variance explained by the factors.

4. Conclusion

There were three factors that influenced social media which were cost-effective, social media marketing tools and promotion. Each of the factors had an impact on the application of social media that will help the farmers increase their production and result to advertise the products on social media.

Acknowledgements

References

Agresta, S. and Bough, B. (2011). Perspectives TM on Social Media Marketing. CoursePTR/Pro Building Trades. Retrieved on February 20, 2017, from website: https://oamk.finna.fi/Record/nelli17_oamk.2580000000005667

Bai, Y., Yao, Z. and Dou, Y. (2015). Effect of social commerce factors on user purchase behaviour: An empirical investigation from renren.com. *International Journal of Information Management*, 35(5), 538-550. https://doi.org/10.1016/j.ijinfomgt.2015.04.011

Chakrabortty, R.K., Hossain, M., Azad, H. and Islam, J. (2013). Analysing the Effects of Sales Promotion and Advertising on Consumer's Purchase Behaviour. *World Journal of Social Sciences*, 3(4), 183–194.

Clement, J. (2020). Number of social network users worldwide from 2017 to 2025 (in billions). Retrieved on January 3, 2021, from website: https://www.statista.com/statistics/278414/ number- of-worldwide-social-network-users/.

Duong, C.T.P. (2020). Social media. A literature review. *Journal of Media Research,* 13(3), 112–126. https://doi.org/10.24193/jmr.38.7

Field, A. (2009) Discovering Statistics Using SPSS. 3rd ed. London, United Kingdom: Sage Publications Ltd.

Field, A.P. (2005). Is the meta-analysis of correlation coefficients accurate when population correlations vary? *Psychological Methods,* 10(4), 444-467. https://doi.org/10.1037/1082-989X.10.4.444

Gangadharbatla, H., Bright, L.F. and Logan, K. (2014). Social Media and News Gathering:Tapping into the Millennial Mindset. *The Journal of Social Media in Society*, 3(1), 45–63.

Gonte, P.K.D. (2018). Application of Social Media in Advertising Fresh Fruit and Vegetable Products in Ahmednagar District. *International Journal of Modern Trends in Business Research*, 1(5), 16–27

Hair, J.F., Ortinau, D.J. and Harrison, D.E. (2010). Essentials of marketing research. Vol. 2. New York, USA: McGraw-Hill/Irwin.

Hendricks, J. and Noor Al-Deen, H. (2011). Social Media. Usage and Impact. Lexington Books. Retrieved on February 20, 2017, from website: https://ebookcentral-proquest-com.ezp.oamk.fi:2047/lib/oamk- ebooks/detail.action?docID=795614

Kurniawan, P. (2017). Pemanfaatan Media Sosial Instagram Sebagai Komunikasi Pemasaran Modern Pada Batik Burneh. *Kompetensi*m, 11, 217-225. https://doi.org/10.21107/kompetensi.v11i2.3533 [In Bahasa Indonesia].

Mela, C.F., Gupta, S. and Lehmann, D.R. (1997). The long-term impact of promotion and advertising on consumer brand choice. *Journal of Marketing Research*, 34(2), 248–261. https://doi.org/10.2307/3151862

Nadaraja, R. and Yazdanifard, R. (2018). Social Media Marketing: advantages and disadvantages. Retrieved from website: https://www.researchgate.net/publication/256296291_Social_Media_Marketing_SOCIAL_MEDIA_MARKETING_ADVANTAGES_AND_DISADVANTAGES

Naruka, P., Verma, S., Sarangdevot, S., Pachauri, C., Kerketta, S. and Singh, J. (2017). A Study on Role of WhatsApp in Agriculture Value Chains. *Asian Journal of Agricultural Extension, Economics* and *Sociology*, 20(1), 36498. https://doi.org/10.9734/ajaees/2017/36498

Newberry, C. and Maclachlan, S. (2019). Social Media Advertising 101: How to Get the Most of Your Ad Budget. Retrieved from Hootsuite website: https://blog.hootsuite.com/social-media-advertising/

Odediran, A. (2020). Social Media Marketing: The Advantage and Disadvantage. San Diego, California, USA: California Miramar University, BSc. Thesis.

Pessala, I. (2016). User Experiences and Efficiency of Instagram Advertising. Jyväskylä, Finland: Jyvaskyla University of Applied Sciences, BSc. Thesis

Puomisto, T. (2020). Building a personal political brand using Facebook and Instagram advertising. Retrieved from website: https://jyx.jyu.fi/bitstream/handle/123456789/70366/URN%3ANBN%3Afi%3Ajyu-202006244558.pdf?sequence=1&isAllowed=y

Schwemmer, C. and Ziewiecki, S. (2018). Social Media Sellout: The Increasing Role of Product Promotion on YouTube. *Social Media + Society*, 4(3), 1-20. https://doi.org/10.1177/2056305118786720

Tabachnick, B.G. and Fidell, L.S. (2014). Using Multivariate Statistics. 6th ed. London, United Kingdom: Pearson Education.

Weinberg, T. (2009). The new community rules: Marketing on the Social Web. Development and Learning in Organizations, 25, 3. https://doi.org/10.1108/dlo.2011.08125cae.002

Williams, B., Onsman, A. and Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8(3), 93. https://doi.org/10.33151/ajp.8.3.9