






Citrus Farmers and Digital Marketing in Gunuang Omeh, West Sumatera

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Abstract. Citrus farmers in Indonesia, including in Gunuang Omeh, West Sumatera, are still experiencing problems with prices falling during the main harvest. Digital marketing can be an alternative to overcome this because it can reach a wider market, thereby getting the most suitable price. This research aims to find out the marketing that carry out by citrus farmers in Gunuang Omeh, including digital marketing, along with the selling price received. A descriptive analysis method completed by Maan Whitney test, which involved 347 citrus farmers in Gunuang Omeh sub district, were used. Respondent descriptions showed that most of the citrus farmers never done digital marketing, even though they still experience price falling in the main harvest as the major obstacle (98.8%), which occurs in June-July (52.5%). From the analysis results, farmers who carry out digital marketing have a slightly better price. The lack of understanding of the use of digital marketing needs to be a concern for the government, by providing education and training to farmers. Further research involving more citrus farmers who used digital marketing is needed for better understanding and to identify the driving factors.

Keywords: Citrus farmers, Digital marketing, Price, Sustainability, Transformation

1 Background of The Study

Citrus farmers in Indonesia, including in Gunuang Omeh, West Sumatera are still experiencing problems with price falling during the main harvest [1], [2]. Digital marketing can be an alternative to overcome this because they can reach a wider market, thereby getting the suitable price [3], [4]. It also supported by the increased use of digital marketing [5]. Digital marketing has significantly impacted the wholesaling and retail industry, providing a novel approach to product promotion. With the advancement of technology, various forms of digital marketing have become increasingly prevalent. These include search engine optimisation (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, e-commerce

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marketing, campaign marketing, social media marketing, social media optimisation, e-mail direct marketing, display advertising, e-books, optical discs, and games [6].

Digital marketing can enhance market competitiveness by providing farmers with better access to pricing trends and alternative possibilities, particularly when unfavorable formal or relational contracts bind them. Privacy may be at risk when agricultural markets lack competition and dominant entities exert significant control over agricultural markets and digital platforms. Farmer registries, previously discussed as a potentially crucial component of a functional digital ecosystem, can also work as government control mechanisms. By possessing data regarding the demographic composition, land ownership, asset possession, crop variety, and other attributes of a farm household, governments can direct production and marketing choices that might enhance national food security or facilitate export promotion tactics [7].

The capacity of digital tools to revolutionize agricultural markets in poor nations has generated significant excitement in public discussions, development policies, and the private business and investment sectors. The rising adoption of mobile phones and internet access in developing countries creates a favorable environment for implementing information and communication technologies (ICTs). Communication technologies, which include text message and interactive voice response (IVR) systems, mobile apps, satellite imagery, and remote sensing, can be tailored to different situations to provide services and information in a cost-effective, widespread, and fast manner. ICTs can revolutionize agricultural markets in developing countries by altering their structure, organization, and functions. This has the potential to effectively tackle the prevalent market failures and information imbalances that are often observed in these markets [8].

2 Methods

Data collection using surveys from June to December 2021. Purposive data collection in collaboration with extension workers using structured questionnaire, involving 347 citrus farmers to represent 2,590 citrus farmers in the Gunuang Omeh subdistrict. Quantitative descriptive analysis was used completed by Maan Whitney Test, to see the difference in selling prices from those who do digital marketing with those who don't. The Mann Whitney Test accommodates mean and variance, with the following formulation:

$$E(U) = \mu_u - \frac{n_1 n_2}{2} \tag{1}$$

$$\text{Var}(U) = \alpha_u^2 = \frac{n_1 n_2 (n_1 + n_2 + 1)}{12} \tag{2}$$

$$Z = \frac{U - \mu_u}{\alpha_u} \tag{3}$$

where μ is rank sum, α is variance, n sample size of the population. In the SPSS, results of mean rank is an indication of which selling price is higher. The significantly difference is seen in the exact value of sig (2-tailed) or p, if exact. Sig. (2-tailed) / 2 < 5%, it shows a significant difference in selling prices from those who do digital marketing with those who do not.

3 Results

Citrus farmers respondents were mostly men. The proportion of female farmers is quite represented in Gunuang Omeh sub-district, i.e. as many as 41.8%. Most of the citrus farmers respondent education is in elementary schools, followed by senior high schools. The family composition is between five or more people (45.3%) (Table.1).

Table 1. Demographic characteristics of respondents (n=347)

Characteristic	Category	Percentage (%)
Gender	Male	58.2
	Female	41.8
Education	No education	6.8
	Elementary school	30.8
	Junior high school	26.8
	Senior high school	30.2
	Degree	5.4
Family size (people)	1-2	13.1
	3-4	41.6
	5 or more	45.3

Table 2. Citrus farmers marketing (n=347)

Characteristic	Category	Percentage (%)
Selling system	weighed (kg)	99.5
	<i>tebasan</i> (bought up)	0.3
	Other	0.3
Buyer	collecting merchants	87.1
	Retailers	7.7
	Intercity	4.3
	direct consumer	0.3
Types of buyer	Incidental	33.1
	Routine	66.9
Have you ever sold through digital marketing	Yes	5.7
	No	94.3
Target digital marketing	intermediary	19.5
	direct consumer	50
	Other	30.5
Reason not to do digital marketing	the product has sold well	60.9
	don't know how	27.9
	not interested	7.5
	Other	3.7

Payment system	instantly paid	57.2
	wait for certain period	40.5
	other	2.3
Lowest price	July	37.8
	June	14.7
	October	8.4
	Agustus	7.2
	other month	31.9

Based on the data presented in Table 2, it is apparent that only 5.7% of the 347 citrus producers have employed digital marketing to sell their products directly to consumers. Farmers do not employ digital marketing because they already market their agricultural products via direct transactions with intermediary merchants (87.1%), a method that is consistently adhered to (66.9%). Cash is the prevailing mode of payment, constituting 57.2% of all transactions; deferred payment is utilized in a mere 40.5% of such transactions. A mere 27.9% of farmers do not understand applying digital marketing strategies for selling. This condition deserves the attention of the government. However, digital marketing facilitates the increased dynamism of businesses [9]. In conventional marketing, small retailers encounter challenges competing with market leaders due to the substantial financial investment and expertise required for strategy formulation. However, digital marketing offers the opportunity to expand the reach of one's target audience and provide superior service assurance through a well-designed website or using social media networking, can reduce cost.

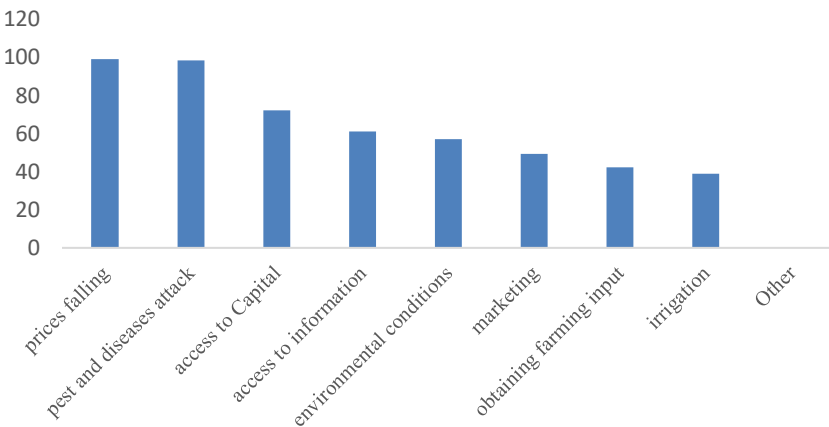


Fig. 1. Obstacles faced by citrus farmers respondents.

The explanation that respondent farmers did not do digital marketing because the products had been sold, was contrary to the main difficulty they faced, namely prices falling during the main harvest, which was faced by 98.8% of citrus farmers respondent

(Fig. 1). By utilising digital marketing, a business promotional concept can achieve significantly greater reach and coverage than traditional marketing campaigns. A single marketing campaign can be viewed globally and at an optimal cost. This mechanism allows customers to provide feedback and express their opinions regarding the product, including their purchasing decisions. Such feedback providing an effective opportunity for marketers to interact with their target audience. Digital marketing offers a more effective approach to brand development than traditional marketing methods. Digital marketing can generate a cascading and viral effect in promotion compared to traditional marketing methods. For instance, utilising social media networking sites, email, and social media channels expedite the dissemination of message content [6].

Social media has evolved into a marketplace distinct from other platforms in the digital market, facilitating industry progress, and enhancing productivity. Irrespective of regional variations, the frequency of digital transactions is steadily rising. Individuals across different age groups perceive digital transactions as secure and reliable. Regarding purchasing behaviour, male and female consumers exhibit nearly identical patterns. However, these trends diverge somewhat regarding urbanity and the perception of digital security. Social networking is accessible via digital platforms, and nuclear families are the digital platform's boosters. It provides equal growth opportunities for both large and minor brands. The integration of the expanding internet in rural regions with metropolitan culture presents consumers with tremendous opportunities. It is widely recognised that technology evolves every decade, as evidenced by the transition from radio to television to mobile. Mobile phones allow consumers to access information and exercise their rights as individuals. Digital marketing facilitates consumer-product interaction. Develop its own set of criteria. Collaborate and communicate with the brand. Social media platforms and networks must uphold data privacy regulations to facilitate widespread and mass-oriented implementation of digital marketing. Even though digital platforms pose some security and privacy risks, they are the norm in modern society and are recognised globally as the largest market for all brands, including agriculture [10].

The above situation is in accordance with the main target of digital marketing carried out by Gunuang Omeh citrus farmers, namely direct consumers (50%). The affordability of wider consumers is expected to help stabilize prices that fall during the harvest. Falling price was experienced by citrus farmer around June and July. Payment delays that may be experienced by citrus farmers due to digital marketing need to be anticipated, although some have become accustomed to waiting for certain period payment systems.

From Table 3 below it can be seen that citrus farmers who have done digital marketing have a better average sales price than farmers who never done it. This can be seen in the higher mean rank value, but it is not significantly different.

Table 3. Average price different per kg in 2020 and Maan Whitney Test (n=347)

Ever sell through digital marketing	Average Price Mean	N	S.D	Mean Rank	Asymp. Sig (2-tailed)
yes	9,368.42	19	1422.46	185.74	0.59

no	9,289.32	328	4694.64	173.2
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4. Conclusion

Digital marketing can be a solution to overcome the problem of prices falling during the main harvest by giving a wider marketing reach. Therefore, this study tried to see the marketing patterns applied by Gunuang Omeh citrus farmers, by using descriptive analysis completed with Maan Whitney test. From the results obtained, it can be seen, that most of the citrus farmers respondent never done digital marketing. They also still experience price falling in the main harvest as the main obstacle. A slightly better selling price experienced by citrus farmers who apply digital marketing. Some citrus farmers do not know how to implement digital marketing. The above situation deserves attention, where there is a need to open the farmers perception of digital marketing, along with appropriate education and training. Further research involving more citrus farmers who used digital marketing can give a better understanding and to identify the driving factors.

References

1. L. Mufidah and F. N. Devy, "Kesesuaian dan peningkatan pengetahuan petani jeruk akan teknologi Bujangseta melalui Bimtek di Kecamatan Gunuang Omeh, Sumbar," in *Prosiding Seminar Nasional PERHORTI "Kemitraan untuk Mempercepat Peningkatan Daya Saing Hortikultura,"* 2021, pp. 141–148.
2. L. Mufidah and F. D. Nirmala, "Memahami pengetahuan dan persepsi petani akan teknologi pengelolaan terpadu kebun jeruk sehat dan Bujangseta di Ukui, Pelalawan, Riau," in *Prosiding Seminar Nasional Inovasi Teknologi dan Perbenihan-Perbenihan Dalam Mewujudkan Pertanian Maju-Modern di Tengah Perubahan Iklim dn Pandemi Covid 19, 2021,* pp. 1–9.
3. H. Zhang, W. Ma, J. Li, and W. Yang, "Can citrus farmers earn more from selling online?," *Econ Anal Policy*, vol. 80, pp. 1549–1560, Dec. 2023, doi: 10.1016/j.eap.2023.10.026.
4. G. Baourakis, M. Kourgiantakis, and A. Migdalas, "The impact of e-commerce on agro-food marketing," *British Food Journal*, vol. 104, no. 8, pp. 580–590, Sep. 2002, doi: 10.1108/00070700210425976.
5. Y. K. Dwivedi et al., "Setting the future of digital and social media marketing research: Perspectives and research propositions," *Int J Inf Manage*, vol. 59, Aug. 2021, doi: 10.1016/j.ijinfomgt.2020.102168.
6. M. Bala and M. Deepak Verma, "A Critical Review of Digital Marketing Paper Type:-Review and Viewpoint," *International Journal of Management*, vol. 8, 2018, [Online]. Available: <http://www.ijmra.us>,<http://www.ijmra.us>,<http://www.ijmra.us>,<http://www.ijmra.us>,
7. G. T. Abate, K. A. Abay, J. Chamberlin, Y. Kassim, D. J. Spielman, and M. Paul Jr Tabe-Ojong, "Digital tools and agricultural market transformation in Africa: Why are they not at scale yet, and what will it take to get there?," *Food Policy*, vol. 116, Apr. 2023, doi: 10.1016/j.foodpol.2023.102439.
8. E. Nakasone, M. Torero, and B. Minten, "The power of information: The ICT revolution in agricultural development," *Annu Rev Resour Economics*, vol. 6, no. 1, pp. 533–550, Oct. 2014, doi: 10.1146/annurev-resource-100913-012714.

9. T. Endrawati, B. M. A. S. Bangkara, S. Irdiana, Antoni, and A. P. Siregar, "Challenge and opportunity of marketing digital-based for business owners during pandemic in Indonesia," 2022.
10. C. Kumar Mishra, "Digital Marketing: Scope Opportunities and Challenges," in *Promotion and Marketing Communications*, IntechOpen, 2020. doi: 10.5772/intechopen.92329.

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