

Integrated Digital Payment, Digital Marketing, and Pricing Perception for Decision Purchase of Fruits and Vegetables E-Commerce

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Abstract. Information technology advancements have made it easier for people to carry out daily tasks such as shopping for necessities, including fruits and vegetables that are consumed daily. The objective of this research is to assess how online sales of fruits and vegetables are affected by digital marketing strategies, digital payment options, and pricing. This study uses quantitative data research. This research employs descriptive and verification analysis as its method of data analysis. A descriptive analysis is conducted with respondents using questionnaires to obtain a description of the research variables. SmartPLS is the technique used to verify data—an e-commerce fruit and vegetable consumer sample of 384 respondents. The study results indicate that digital payment and digital marketing variables significantly impact online vegetable and fruit purchasing decisions. Digital payment and digital marketing variables do not significantly affect the prices of vegetables and fruits in e-commerce. The variable of price does not act as a mediator in purchasing decisions.

1 INTRODUCTION

Information technology advancements have made it easier for people to. The development of easily accessible communication and information media has accelerated business expansion. The Internet is a form of technological innovation that Indonesia has begun to develop since 1990 [7]. There are numerous online fruit and vegetable markets in Indonesia, such as Skybox, fresh, happy fresh, tanihub, bakoel, artisan vegetables, carisayur, and many other digital platforms, such as Tokopedia and shopee. During the Covid pandemic, consumers flooded the online market. However, after the pandemic passed, they returned to the market to directly select fruits and vegetables, causing the demise of several online businesses. Assuming the marketing strategy is successful, online business remains viable as more individuals are turning to mobile applications to improve their daily routines. Digital platforms are utilized to promote fresh produce, like fruits and vegetables. According to Zebua and Sunaryanto's research, utilizing digital platforms as a marketing channel for fruits and vegetables has the potential to broaden the market and raise sales figures [21]. Furthermore, selling products through digital platforms can increase farmers' profits, as there is no need for middlemen [6]. The emergence of electronic marketing for agricultural goods creates a chance to address inefficiencies within the agricultural value chain. This is achieved by providing an alternative marketing avenue for agricultural products to a broader range of potential buyers, such as wholesalers, retailers, restaurants, and end consumers. With its

ability to reach potential consumers beyond geographical boundaries, e-marketing surpasses traditional marketing arrangements. This provides various consumer benefits, including improved product quality, the convenience of avoiding crowds and traffic, time savings, and multiple payment options such as card or cash-on-delivery. Additionally, e-marketing simplifies the process of finding products that meet specific criteria for consumers.

The marketing strategy known as 7P involves seven key components, which include product, price, place, promotion, people, process, and physical evidence from purchasing, selling, and distributing goods, which must be tailored to the product's consumer behavior [19]. *Digital marketing* is a promotional tool used to promote products on online platforms. The advent of digital marketing has made it more efficient, as consumers now use digital devices to make purchases rather than visit a store. The digital marketing industry encompasses nearly all industries. Through digital marketing, geographical barriers can be overcome, effectively transforming all individuals and companies worldwide into potential suppliers and customers.

Consumers who prefer digital payments also favor certain types of products. These products include electronics, food, shopping (clothing) products, and daily necessities. Most individuals prefer electronic products such as laptops, cell phones, e-books, computers, tickets, automobiles, and printers. The most significant factors affecting digital marketing and digital payments were found to be the abundance of information, diversity of product offerings, customer satisfaction, and level of education. There is expected

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to be a rise in the utilization of secure digital payment methods in the future. In Indonesia, the expansion of payment systems in e-commerce is due to the greater efficiency of financial instruments compared to traditional payment systems. E-Payment has emerged as a replacement for cash-based transactions, simplifying the buying and selling process. As a result of service expansion, e-payment has become an essential component of the e-commerce payment system [4].

To increase the desirability of fresh agricultural products, offering them at reasonable prices is essential. To capture market share, sellers typically employ various promotional strategies, among which price reductions are among the most effective. Reasonable pricing is the key to increasing consumer appeal and boosting the profits of e-commerce businesses. If the price is too high, orders will be low, reducing the desirability of the purchase. However, if the price is too low, the profit margin will be low, which is not conducive to the long-term growth of e-commerce. There is also price psychology that can persuade customers to purchase. According to Hillen's [9] findings, more than 70% of the prices on Amazon Fresh conclude with the number nine, demonstrating that Amazon Fresh similarly uses psychological pricing to brick-and-mortar grocery stores. For low-priced products, such as snacks, candies, fruits, and vegetables, the use of nine-ending prices is more impactful in influencing consumer buying behavior.

This study aims to see (1) if there any influence between digital payments on fruit and vegetable purchasing decisions in e-commerce. (2) Does digital marketing influence the decision to buy fruit and vegetables in e-commerce? (3) Does digital marketing influence the perception of fruit and vegetable prices in e-commerce? (4) Does digital payments influence the perception of fruit and vegetable prices in e-commerce? (5) Does digital payments influence purchasing decisions for fruits and vegetables in e-commerce through price? (6) Does digital marketing influence buying decisions for fruits and vegetables in e-commerce through price?

2 LITERATURE REVIEW

2.1 Digital Marketing

Digital marketing refers to integrating contemporary digital technologies with conventional marketing methods to achieve marketing objectives. Companies are embracing this novel marketing approach to facilitate streamlined transactions through advanced smartphone applications that serve as marketplaces. The digital marketing framework has caused significant changes in global markets, resulting in increased consumer purchase intentions and purchasing power. As a result, there has been a growing implementation of sophisticated business technologies to adapt to these market shifts [10].,

Digital marketing strategies include (1) Content Marketing refers to the process of creating and sharing content that is informative, relevant, and trustworthy to attract and retain a particular target audience, which can ultimately lead to the acquisition of profitable customers; (2) Search engine optimization, which aims to improve the content and design of digital assets to achieve the highest possible ranking on search engine results pages; (3) Email marketing, where direct emails containing timely and pertinent information are sent to prospects and customers; (4) Search and social media advertising, which involves placing ads at the top of search results or in the sidebar of search results pages to appear alongside results when specific keywords or phrases are searched; (5) Data-driven personalization, where audience segmentation processes and marketing decisions are based on individuals' information rather than their past preferences; (6) Marketing technology refers to a set of software and technological resources utilized by marketers to streamline and automate marketing procedures, gather and evaluate data, and connect with intended audiences via various channels; and (7) Social media companies such as Facebook, Twitter, Instagram, Pinterest, Snapchat, and LinkedIn are compensated for showcasing content through social media advertising [2].

As per Eun Young Kim's research [3], the independent variables in digital marketing are the factors that contribute to the success of the dependent variable. These dimensions are (a) Interactive, namely interconnected and influencing consumers (b) Incentive Programs, namely digital marketing programs that are attractive to consumers, for example, promos, membership, and certain discounts (c) Site Design, namely the design of websites and other digital media in reach consumers. It must be made as attractive as possible to attract the right consumers.

2.2 Digital Payment

E-payment or digital payment systems are innovative payment mechanisms that replace cash transactions with electronic media. E-payment is a mechanism for transferring electronic value from payers to beneficiaries. Electronic payment services offer web-based services that allow remote access, management, and transactions with bank accounts. E-payment refers to making online payments through the Internet. The advantages of e-payment include greater consumer convenience and reduced transaction-related costs such as time and effort. However, e-payment systems must also ensure security and protection against potential threats to gain consumer trust [14].

To measure the success of e-payment, some indicators determine it: (1) Independence, an e-payment method that can consistently provide convenience for users. (2) Interoperability and Portability, e-payment methods that must be continuously connected and regulated by systems and applications that are supported by standard computer platforms (3) E-payment Security, namely e-payment payment methods that guarantee the security of user transactions. (4) Anonymity, i.e. a system unlike a credit card or check

that avoids anonymity, a successful e-payment payment system must be able to understand that some buyers wish their identity and order patterns to be confidential, (5) The accessibility of e-payment methods must determine the maximum and minimum amount that is the transaction limit broadly. (6) Convenience, namely the process of using e-payments that is easy and practical for users to use [20].

2.3 Pricing Perception

Perceived Price is the notion that denotes the significance customers attach to a product or service and the corresponding amount they are prepared to spend on it [13]. As outlined by Shaw [16] the sense of justness in pricing significantly impacts consumer judgment. Setting an appropriate price point is crucial for businesses since it has a substantial influence on customers and their buying behavior. Hence, enterprises must establish fair and reasonable prices that do not make customers feel at a disadvantage. Price comparability and transparency allow consumers to accurately assess the value of products and services. In contrast, a lack of transparency can lead to negative emotions and decreased purchase intent [8]. Key price indicators include affordability, product quality, competitiveness, transparency, discounts, and payment periods.

2.4 Decision Purchase

According to Lumban [15], the dimensions of purchasing decisions are as follows: (1) Need recognition involves determining where and when a product should be purchased. (2) Information, A person who is interested in a product may conduct an information search. (3) Evaluation of multiple alternatives (alternative evaluation), i.e., when consumers use the information to evaluate alternative brands in a set of options.

2.5 Relation between Variable

2.5.1 Relation between Digital payment and Purchase Decision

The e-payment system has a significant impact on purchasing decisions. The convenience factor is the main factor in the electronic payment system, which means that customers feel that using the e-payment system helps them to carry out transactions. E-commerce payments must be simple and not require too many procedures. Consumers want an instant payment process. In some markets, there are multiple trigger purchases commonly referred to as flash sales. When customers find ways to purchase promotional items, customers need to make quick decisions and also expect quick payments. So it shows that impulse purchases in everyday e-commerce trade lead customers to make real purchases [4,12].

2.5.2 Relation between Digital Marketing and Purchase Decision

Digital marketing has a significant and positive impact on purchasing decisions. An increase in digital marketing variables will lead to an increase in purchase decision variables. Advertising measures through marketing influence purchasing decisions and are highly valued by customers because the information obtained is easy to understand thanks to interesting content and consumers can interact with what we convey on social media. Digital visual engagement influences purchase intent. The positive impact of the use of digital marketing on purchasing decisions, with the greatest impact on purchases made through the website, is shown by good customer reviews. The higher the activity and the effort involved in digital marketing activities, the higher the purchasing decisions [1,10,11].

2.5.3 Relation between Price and Purchase Decision

Perceived price is related to purchasing decisions. Perceived price is a state in which consumers or individuals have expectations of the price of a good or service. When consumers perceive goods or services, they have the impression that the price offered is cheaper or more expensive. Price perception arises when a consumer sees the condition or shape of the item. If the quality of the product offered is of good quality, the consumer has a high price perception of the item. And conversely, if the quality of the product offered is poor, then the perceived price that consumers expect is a low price [8,13,16].

3 METHODOLOGY

This study uses quantitative data research. A survey was conducted as part of the quantitative method to determine the response of the research subjects. This study's population consists of consumers of fruits and vegetables from online markets. Questionnaires were distributed using the Google form to e-commerce users who specifically buy fruit and vegetables in the Jabodetabek area. The total sample of this study was taken as many as 384 respondents using the Krecjie and Morgan tables. Simple random sampling was employed in the sampling process. Applying PLS to this research (Partial Least square).

4 RESULTS AND DISCUSSIONS

4.1 Respondent Demographic

Table 1. Respondent Demographic

		Number	Percentage
Gender	Male	205	53.4%
	Female	179	46.6%
Age	<16	2	0.8%

Residence Area	17-25	246	64%
	26-35	71	18.5%
	>36	64	16.7%
	Jakarta	194	50.5%
	Bogor	21	5.5%
	Depok	15	3.9%
Tangerang	46	12%	
Bekasi	108	28.1%	

Table 2. Type E-Commerce

Type E-Commerce	Number	Percentage
Go-Mart	129	34%
GrabMart	115	30%
Sayurbox	58	15%
HappyFresh	48	13%
Tokopedia	12	3%
Segari	8	2%
Shopee	7	2%
Alfagift/Alfamart	3	1%
Tukangsayur	2	1%
blibli mart	2	1%
	384	

4.2 Outer Model (Validity & Reliability)

The convergence of each indicator is determined based on whether its outer loading value exceeds 0.5. As depicted in Fig.1, the indicators have passed the convergent validity test, with extreme loading values exceeding 0.5. Moreover, the discriminant validity test is satisfied through the average variance extracted (AVE) value, which should be greater than the correlation between latent variables. Table 4 demonstrates that the AVE value of Digital Marketing to Digital Payment, which is 0.791, is the highest compared to other variables, such as Digital Marketing to Digital Payment (0.558), Digital Marketing to Price (0.046), and Digital Marketing to Purchase Decision (0.474).

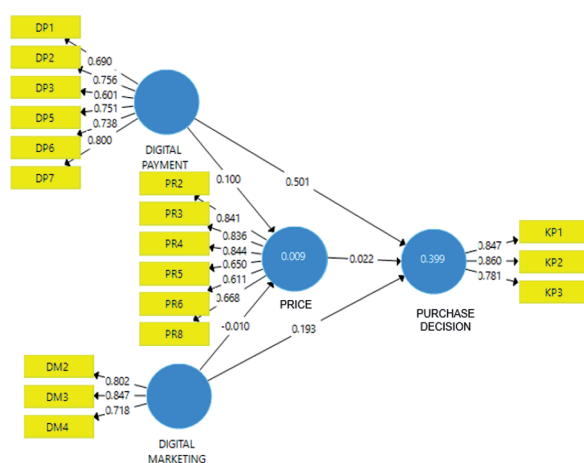


Fig.1. Outer Model Test Results

Table 3. Discriminant Validity

	Digital Marketing	Digital Payment	Price	Purchase Decision
Digital Marketing	0.791			

Digital Payment	0.558	0.725		
Price	0.046	0.095	0.748	
Purchase Decision	0.474	0.611	0.079	0.830

To demonstrate the instrument's accuracy, consistency, and precision in measuring constructs, reliability testing is conducted. If the AVE value produced by all constructs with the above reflective indicators is more significant than 0.5, then Cronbach's Alpha and D.G. Rho values are more significant than 0.60. According to Table 4, all variables satisfy the reliability requirements.

Table 4. Construct Reliability and Validity

	Cronbach's Alpha	Rho_A	Composity Reliability	AVE
Digital Marketing	0.700	0.714	0.833	0.626
Digital Payment	0.818	0.829	0.869	0.526
Price	0.890	0.779	0.882	0.560
Purchase Decision	0.773	0.776	0.869	0.689

4.3 Inner Model

Table 5. R-Square

	R-Square	R-Square Adjusted
Price	0.009	0.004
Purchase Decision	0.399	0.394

According to Chin's classification, an R-Square value is considered strong when it surpasses 0.67, moderate when it falls between 0.33 and 0.67, and weak when it ranges from 0.19 to 0.33. The R-Square value for Line 1 (up to Price) is 0.009, indicating that the impact of digital payment and digital marketing variables on the price variable is very weak, accounting for only 0.9%. R2 through Path II (through Purchase Decision) = 0.399. This means that the digital payment and digital marketing variables in explaining the Purchase Decision variable are 39.9% included in the moderate category.

4.4 Uji Hipotesis

4.3.1 Direct Effect

In the case of a positive Path Coef, the variable has a one-way effect, and conversely. The p-value, also known as the probability value, is considered significant if it is less than 0.05 and is not significant if it is greater than 0.05.

Table 6. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Stat	P Value
Digital	-0.010	-	0.083	0.115	0.908

Marketing to Price		0.009			
Digital Marketing to Purchase Decision	0.193	0.194	0.051	3.765	0.000
Digital Payment to Price	0.100	0.091	0.092	1.087	0.278
Digital Payment to Purchase Decision	0.501	0.502	0.055	9.060	0.000
Price to Purchase Decision	0.022	0.019	0.055	0.409	0.683

Table 6 shows that the impact of Digital Payment and Digital Marketing on Purchasing Decisions is significant, whereas the other variables do not have a significant effect. These results align with previous studies [1,11], which suggest that marketing promotions strongly influence purchasing decisions and are highly regarded by consumers due to the engaging and easy-to-understand content. The use of digital media provides consumers with opportunities to interact with promotional materials, leading to increased purchase intent. Additionally, the study highlights the importance of visual engagement in digital marketing. Yusuf [12] agrees with the previous results, stating that digital payments have a considerable impact on the purchasing decisions of customers for the Haus Binus beverage brand in Jakarta. To boost purchasing decisions, The Jakarta branch employs digital payment platforms like GO-pay, OVO, and ShopeePay. Nurjihan and Subaweh's [5] study reveals that website quality variables and digital payments have a direct or indirect influence on consumer purchasing decisions through consumer purchasing interest.

4.3.2 Indirect Effect

When the P-value is 0.05 or less, it suggests a significant indirect effect, which implies that the intervening variable functions as a mediator between the exogenous and endogenous variables. Conversely, when the P-value is greater than 0.05, it is not statistically significant, indicating that the intervening variable has no role in mediating the relationship between the exogenous and endogenous variables, and the effect is direct.

Table 7. Specific Direct Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Stat	P Value
Digital Marketing to Price to Purchase Decision	-0.000	-0.000	0.004	0.048	0.961
Digital	0.002	0.003	0.006	0.370	0.711

Payment to Price to Purchase Decision					
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The mediating role of Price in the relationship between Digital Marketing and Purchase Decisions is insignificant (p-value = 0.961 > 0.05), which means that there is no evidence of an indirect effect. Similarly, the indirect effect of Digital Marketing on Purchase Decisions via the Price variable is insignificant (p-value = 0.711 > 0.05), Table 7 indicating that the Price variable does not mediate between DP and purchase decisions. Price actually has a significant role in determining purchasing decisions. But this may not apply to fruit and vegetables because to get good quality fruit or vegetables you may have to pay a higher price. This can be seen from the results of research where price has no significant effect on purchasing decisions. This is in line with previous research [18].

5 CONCLUSION

There is a significant influence between digital payment and digital marketing variables on purchasing decisions for vegetables and fruit in e-commerce. There is no significant effect between digital marketing and price, and also no significant effect between Digital payment and price. Also included is the price and purchase decision, not significant. The price variable does not act as a mediating variable in purchasing decisions.

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