The Effect of Marketing Mix and Consumer Behavior on the Decision to Purchase Hydroponic Vegetables (Study on Consumers of P4S Hikmah Farm)

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Abstract

This study aims to determine the effect of the marketing mix and consumer behavior both partially and simultaneously on the purchasing decisions of hydroponic vegetables on the consumers of P4S Hikmah Farm. This type of research is quantitative research. The sampling technique in this study uses accidental sampling. The number of samples used in this study was 50 respondents. Methods of data collection through questionnaires, interviews, and documentation. The data analysis technique used is multiple linear regression analysis and descriptive analysis. The results showed that partially variable of product, price, and promotion have a positive effect on purchasing decisions for hydroponic vegetables. Variable of place, cultural factor, personal factor, and psychological factor did not influence the purchasing decisions of hydroponic vegetables. Variable social factors have a negative effect on purchasing decisions for hydroponic vegetables. Simultaneously marketing mix and consumer behavior have a positive effect on purchasing decisions for hydroponic vegetables. The dominant variable in purchasing decisions is a product.

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1 Introduction

In the current era of globalization, marketing is very important, given the amount of competition that occurs between companies that are fighting for consumers in every line and segmentation of consumers in a sales area. Marketing is one aspect that encourages the increase in sales volume of a company so that the company's goals are achieved. Consumers often make purchasing decisions by looking at the marketing aspects of an item or service carried out by a goods or service company. Therefore, marketing knowledge is very important for companies to attract consumers to consume the goods or services we sell (Djatmiko & Prada, 2016; Lopes et al., 2020; Giampietri et al., 2018).

In marketing, the term marketing mix is known. The marketing mix is a set of tools used by marketers to shape the characteristics of the services offered to customers (Tjiptono, 2019). According to Kotler & Keller (2011), Kotler (1995), Minor & Mowen (2002), Setiadi (2019), Shinta (2011), marketing mix can be classified into 4 Ps, namely product, price, promotion, and place. Product is a combination of services and services offered by the company. Price is the amount of money the customer has to pay to get the product. Promotion is an activity that conveys the benefits of a product and persuades customers to buy it. Places are company activities that make products available to target customers (Jaminyasa et al., 2017).

The development of a business that is full of competition demands that every business actor must know consumer behavior. Consumer behavior is an action that is directly involved in obtaining, consuming, and disposing of a product or service, including the processes that precede and follow that action (Engel et al., 1995). Thus, producers need to look at consumer behavior in purchasing, because the characteristics of the products desired by consumers are not entirely the same as the characteristics of the products produced by manufacturers. According to Kotler & Keller (2011), the main factors that influence consumer behavior are cultural factors, social factors, and social factors. Personal and psychological factors. Cultural factors are the most basic determinants of desire and behavior to obtain values, perceptions, preferences, and behaviors from other important institutions. Social factors are buyer behavior that is influenced by small groups, families, and the role and social status of consumers. Personal factors are psychological characteristics of a person that are different from others that cause relatively consistent and enduring responses to the environment. Psychological factors are the influence of the environment in which he lives and lives at present without ignoring the influence of the past or his anticipation in the future.

Consumer behavior and the marketing mix are very important to be considered by business people in marketing their products (Sheth, 2020; Becker-Olsen et al., 2006). Understanding consumer behavior is considered important in marketing activities because marketers can know what customers expect, why consumers buy certain products, and why customers tend to react specifically to marketing stimuli Tjiptono (2019), Mulyaningtiyas et al. (2020). Meanwhile, the use of the marketing mix is considered important because, among the various aspects of complex marketing, one that is sufficient to contribute to the company's efforts to achieve product marketing effectiveness is the marketing mix (Londhe, 2014; Wongleedee, 2015; Kustin, 2004).

Currently, the business in the field of vegetable crops has experienced a significant increase in recent years. This is in line with the large community need for vegetables as highly nutritious food. But on the other hand, the development of vegetable commodities in terms of quantity and quality is faced with increasingly limited fertile agricultural land. One way to produce high-quality vegetable products continuously with a high quantity per plant is cultivation with a hydroponic system. This technique using water culture was originally developed by Dr. Allen Cooper in 1970 in England, aiming to increase vegetable productivity throughout the year (Winsor, 1979). In this system, a thin layer of nutrient solution flows through the beds or gutters containing the plant roots. The solution circulates continuously for 24 hours or is set at certain times with a timer. Some plant roots are submerged in the nutrient solution, some are above the surface of the solution.

Hydroponic vegetable cultivation in Indonesia has been developing for a long time. Hydroponics comes from the word hydro which means water and ponus which means power (Sutiyoso, 2004).

Thus, hydroponics can mean empowering water as the basis for developing plant bodies and playing a role in plant physiological processes. Hydroponic vegetable cultivation is a profitable business and allows everyone to cultivate it because the selling price is higher than vegetables grown in general. However, there are technical matters that must be known and mastered in cultivation, especially related to the production process. Starting from planting, care, to harvesting followed by marketing.

The problems described above are the reasons for researchers to conduct a study in this case. The purpose of this study was to: (1) analyze the effect of the marketing mix consisting of the product (X5), price (X6), place (X7), promotion (X8) partially on purchasing decisions (Y) of hydroponic vegetables. (2) Analyze the influence of consumer behavior variables consisting of cultural factors (X1), social factors (X2), personal factors (X3), psychological factors (X4) partially on purchasing decisions (Y) hydroponic vegetables. (3) Analyzing the influence of the marketing mix variables and consumer behavior simultaneously on the purchasing decisions of hydroponic vegetables. (4) Analyzing variables that have a dominant influence on purchasing decisions for hydroponic vegetables.

2 Materials and Methods

The type of research used is quantitative research (Phillippi & Lauderdale, 2018; Holliday, 2010; Antin et al., 2015; Bengtsson, 2016; Punch, 2013). The research location is in the P4S Hikmah Farm business place. P4S Hikmah Farm is a Training Center for Rural Agriculture regarding hydroponic vegetable cultivation located on Jl. Coconut No. 10, Tretek, Kec. Pare, Kediri Regency.

The population in this study is consumers who buy hydroponic vegetables at P4S Hikmah Farm. Meanwhile, the sample used in this study were consumers who did hydroponic vegetables at P4S Hikmah Farm in November 2021. Respondents in this study were 50 respondents. The sampling technique used was accidental sampling.

Methods of collecting data through questionnaires, interviews, and documentation. This study consisted of eight independent variables and one dependent variable. The independent variables include the product (X1), price (X2), place (X3), promotion (X4) cultural factors (X5), social factors (X6), personal factors (X7), and psychological factors (X8). Meanwhile, the dependent variable is the purchase decision (Y). The data analysis technique used is multiple linear regression analysis and descriptive analysis.

3 Results and Discussions

Multiple linear regression analysis

Multiple linear regression analysis is done to find out whether there is a relationship between two or more independent variables and one dependent variable. The variables contained in this study are product (X1), price (X2), place (X3), promotion (X4) cultural factors (X5), social factors (X6), personal factors (X7), and psychological factors (X8). On purchasing decisions (Y). The results of multiple linear regression analysis using SPSS 16.0 software can be seen in Table 1.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.773</td>
<td>1.689</td>
<td>2.233</td>
<td>0.028</td>
</tr>
<tr>
<td>X1</td>
<td>0.655</td>
<td>0.124</td>
<td>0.528</td>
<td>5.260</td>
</tr>
<tr>
<td>X2</td>
<td>0.323</td>
<td>0.104</td>
<td>0.384</td>
<td>3.110</td>
</tr>
</tbody>
</table>

Table 1 Recapitulation results of multiple linear regression

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Based on the results of the regression analysis in Table 1, it can be formulated a regression equation as follows:

\[ Y = 3.773 + 0.655 X_1 + 0.323 X_2 - 0.050 X_3 + 0.328 X_4 + 0.002 X_5 - 0.141 X_6 + 0.057 X_7 - 0.142 X_8 \]

From the multiple linear regression equation, it can be interpreted as follows:

- The constant value of the regression equation is 3.773. This means that this value is the starting point of a curve and is always a fixed value under any conditions.
- X1 is a product variable having a constant of 0.655. This means that if the other independent variables have a fixed value and the product variable has an increase of 1%, then the purchasing decisions of consumers will increase by 0.655.
- X2 is a price variable having a constant of 0.323. This means that if the other independent variables have a fixed value and the price variable has increased by 1%, then the purchasing decisions of consumers will increase by 0.323.
- X3 is a variable where it has a constant of -0.050. This means that if the other independent variables have a fixed value and the place variable has an increase of 1%, then the purchase decision from consumers will increase by -0.050.
- X4 is a promotion variable having a constant of 0.328. This means that if the other independent variables have a fixed value and the promotion variable has an increase of 1%, then the purchasing decisions of consumers will increase by 0.328.
- X5 is a cultural factor variable having a constant of 0.002. This means that if the other independent variables have a fixed value and the cultural factor variable has increased by 1%, then the purchase decision from consumers will increase by 0.002.
- X6 is a social factor variable having a constant of -0.141. This means that if the other independent variables have a fixed value and the social factor variable has increased by 1%, then the purchasing decisions of consumers will increase by -0.141.
- X7 is a social factor variable having a constant of 0.057. This means that if the other independent variables have a fixed value and the social factor variable has an increase of 1%, then the purchasing decisions of consumers will increase by 0.057.
- X8 is a psychological factor variable having a constant of -0.142. This means that if the other independent variables have a fixed value and the psychological factor variable has an increase of 1%, then the purchasing decisions of consumers will increase by -0.142.

\textit{t-test}

The results of the t-test calculation can be seen in Table 1, it can be explained as follows:

- Product Variable (X1)
The significance value of the X1 variable is 0.000 so the significance value is <0.05 and the t-test value is 5.260, so Ho is rejected and Ha is accepted, meaning that partially the product has a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.
- Price Variable (X2)
The significance value of the X2 variable is 0.002 so the significance value is <0.05 and the t-test value is 3.110, so Ho is rejected and Ha is accepted, meaning that partially the price has a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

- Place Variable (X3)
The significance value of the X3 variable is 0.666 so the significance value is > 0.05 and the t-test value is -0.432 then Ho is accepted and Ha is rejected, meaning that partially the place does not affect the purchase decision of hydroponic vegetables at P4S Hikmah Farm.

- Promotion Variable (X4).
The significance value of the X4 variable is 0.003 so the significance value is <0.05 and the t-test value is 3.093, so Ho is rejected and Ha is accepted, meaning that partial promotion has a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

- Cultural Factor Variables (X5)
The significance value of the X5 variable is 0.986 so the significance value is > 0.05 and the t-test value is 0.018, so Ho is accepted and Ha is rejected, meaning that partially cultural factors do not affect purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

- Social Variables (X6)
The significance value of the X6 variable is 0.003 so the significance value is <0.05 and the t-test value is -3.055 then Ho is rejected and Ha is accepted, meaning that partially social factors have a negative effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm. It’s like an explanation according to Schifman and Kanuk (2008) almost everyone regularly interacts with other people which directly or indirectly influences buying decisions. Therefore in research, In this case, social variables significantly influence dominant in purchasing decisions.

- Personal Factor Variable (X7)
The significance value of the X7 variable is 0.535 so the significance value is > 0.05 and the t-test value is 0.623, so Ho is accepted and Ha is rejected, meaning that partially personal factors do not affect purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

- Psychological Factor Variables (X8)
The significance value of the X8 variable is 0.327 so the significance value is > 0.05 and the t-test value is -0.985 then Ho is accepted and Ha is rejected, meaning that partially psychological factors do not affect purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

**F Uji Test**

The results of the F test can be seen in Table 2 below:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>893,496</td>
<td>8</td>
<td>111,687</td>
<td>16,852</td>
<td>0,000</td>
</tr>
<tr>
<td>Residual</td>
<td>271,724</td>
<td>41</td>
<td>6,627</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1165,220</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed primary data

Based on the data in Table 2, the F value of 16,852 is obtained with a significance of 0.000. Significance value <0.05 then Ho is rejected and Ha is accepted, meaning that simultaneously the marketing mix (product, price, place, promotion) and consumer behavior (cultural factors, social factors, personal factors, psychological factors) have a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

**Coefficient of determination (R2)**

The results of the Adjusted R Square value are presented in Table 3 below:
Based on Table 3, the adjusted R² value is 0.861 or 86.1%. Thus, this shows that purchasing decisions can be explained by 86.1% by independent variables, namely product, price, place, promotion, cultural factors, social factors, and psychological factors. Meanwhile, 13.9% of purchasing decisions are explained by variables outside the independent variables of this study.

**Influence of products on purchase decisions**

Based on Table 1, it can be seen that in the X1 variable, the value of t = 5.260 and the significance value = 0.000 <0.05, the product has a partial positive effect on consumer purchasing decisions of hydroponic vegetables at P4S Hikmah Farm. A product is anything that a producer can offer to be noticed, requested, sought, purchased, used, or consumed by the market as a fulfillment of the needs or desires of the relevant market (Tjiptono, 2019).

A product is anything that a producer can offer to be noticed, requested, sought, purchased, used, or consumed by the market as a fulfillment of the needs or desires of the relevant market (Tjiptono, 2019). It can be explained that product design, product diversity, product quality that explains product variables can influence purchasing decisions for hydroponic vegetables at P4S Hikmah Farm based on research Walter et al. (2003), Megarita & Tony (2014), and Hanaysha et al. (2014), which states that product quality has a significant positive effect on the product image. This is because people already understand the use or function of hydroponic vegetables and their diversity. It is evident from Ariati et al. (2018), which states that hydroponic vegetables in addition to beautifying the yard and providing nutritional intake for the family also provide economic benefits to support the family economy.

**Effect of price on purchase decision**

Based on Table 1, it shows that in the X2 variable the value of t = 3.110 and the significance value of 0.002 <0.05, then the price has a partial positive effect on consumer purchasing decisions of hydroponic vegetables at P4S Hikmah Farm, meaning that there is a positive correlation between price and purchasing decisions.

A price is some sacrifice that must be paid by customers to obtain products or services (Lupiyoadi, 2018). This price consists of indicators of price affordability, price suitability with product quality, price suitability with benefits, price suitability with ability or price competitiveness. Thus, these indicators influence consumers in making purchases.

In this study, the price has a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm, meaning that there is a positive correlation between price and purchasing decisions. Thus, the higher the consumer’s perception of the price, the stronger it is to encourage consumers to decide to purchase hydroponic vegetables at P4S Hikmah Farm, and vice versa. This is proven in real conditions in the field that the variation in the price of hydroponic vegetables affects consumer interest in buying them.

**Influence of place on purchase decision**

Based on Table 1, it can be seen that in the X3 variable, the t value = -0.432 and the Significance value = 0.666 > 0.05, then the place has no partial effect on the hydroponic vegetable purchase decision at P4S Hikmah Farm. Place is the location where the company is headquartered and conducts operations or activities. The place also explains how the delivery system will be implemented (Lupiyoadi, 2018). This place consists of

---

**Table 3**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.934</td>
<td>0.873</td>
<td>0.861</td>
<td>1.80247</td>
</tr>
</tbody>
</table>

Source: Processed primary data
indicators of location affordability, smooth access to the location, and location proximity. Thus, these indicators influence consumers in making purchases.

In this study, the place did not affect purchasing decisions for hydroponic vegetables at P4S Hikmah Farm, meaning that there was no correlation between place and purchasing decisions. So, wherever the P4S Hikmah Farm is located, it doesn’t affect consumer purchasing decisions.

**Effect of promotion on purchase decision**

Based on Table 1, shows that in the X4 variable the value of t = 3.093 and the significance value = 0.003 <0.05, then the promotion has a partial positive effect on consumer purchasing decisions for hydroponic vegetables at P4S Hikmah Farm. Promotion is an activity carried out by a company to communicate the benefits of a product and as a tool to influence consumers in purchasing or using services following their wishes and needs (Lupiyoadi, 2018). This promotion consists of indicators of advertising, sales promotion, personal selling, and direct selling. Thus, these indicators influence consumers in making purchases.

In this study, the promotion has a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm, meaning that there is a positive correlation between promotion and purchase decisions. So, the better the promotion, the better it encourages consumers to make purchasing decisions, and vice versa. For this reason, companies must make promotions as attractive as possible so that consumers have a high interest in making purchases. This was proven when researchers made a discount promo that was valid for all types of hydroponic vegetables and without a minimum purchase, making many people interested in buying it (Ariwibowo et al., 2020).

**The influence of cultural factors on purchase decisions**

Based on Table 1, it can be seen that in the X5 variable, the value of t = 0.018 and the significance value = 0.986 > 0.05, the cultural factor does not partially influence the purchasing decisions of consumers of hydroponic vegetables at P4S Hikmah Farm.

This is because consumers assume that it is not entirely different from culture (knowledge, belief, art, law, morals, customs), sub-culture (nationalism groups, religious groups, racial groups, geographical areas), and social class (educational level, strata social) can influence them in buying hydroponic vegetables at P4S Hikmah Farm. In other words, cultural factors are not the main factor for a consumer to buy hydroponic vegetables at P4S Hikmah Farm.

The results found in this study are not supported by the theory proposed by Kotler & Keller (2011). According to Kotler & Keller (2011), culture is the most basic determinant of desire and behavior to obtain values, perceptions, preferences, and behaviors from other important institutions. Cultural factors have the broadest and deepest influence on consumer behavior. In this case, cultural factors are not a determinant of hydroponic vegetable consumers at P4S Hikmah Farm to make purchasing decisions. This is because many people do not know much about hydroponic vegetables. In addition, people are also not used to consuming hydroponic vegetables.

**The influence of social factors on purchase decisions**

Based on Table 1, it shows that in the X6 variable the value of t = -3.055 and the significance value = 0.003 <0.05, then social factors have a partial negative effect on consumer purchasing decisions for hydroponic vegetables at P4S Hikmah Farm, meaning that there is a negative correlation between factors social interaction with purchasing decisions. Thus, the more groups of people who influence individual behavior in making purchases, the lower the individual's interest in doing hydroponic vegetables at P4S Hikmah Farm, and vice versa. This is based on the results of filling out the questionnaire, in which respondents stated that they play more of a role in making purchasing decisions than their parents, friends, and others.

The results of this study are supported by the theory of Purimahua (2006). According to Purimahua (2006), social factors are a group of people who can influence individual behavior in carrying out an action based on habits. These social factors consist of a reference group, family, role, and status. Where what is meant by reference groups are groups that directly or indirectly affect a person’s attitudes and behavior.
Family members can also exert a strong influence on buyer behavior. In this case, P4S Hikmah Farm consumers are also influenced by social factors in making hydroponic vegetable purchasing decisions.

Influence of personal factors on purchase decisions

Based on Table 1, it can be seen that in the X7 variable, the t value = 0.623 and the Significance value = 0.535 > 0.005, then personal factors do not partially influence the purchasing decisions of consumers of hydroponic vegetables at P4S Hikmah Farm.

Personal factors are psychological characteristics of a person that are different from others that cause relatively consistent and enduring responses to the environment (Kotler & Keller, 2011). This can be explained that age and life cycle, occupation, economic situation, lifestyle, personality, and self-concept that explain the personal factor variables do not affect the purchase decision of hydroponic vegetables at P4S Hikmah Farm. This is because hydroponic vegetables have not become a lifestyle for most people. Not many people have the interest and hobby to consume hydroponic vegetables.

According to Kotler & Keller (2011), the main variables for segmenting the consumer market based on demographics are age and occupation. If it is related to the results of this study based on the characteristics of the respondents according to their age, then hydroponic vegetables can be consumed by consumers without age restrictions. In addition, hydroponic vegetables can also be used by consumers with various types of work such as students, employees, entrepreneurs, civil servants, and others.

Effect of psychological factors on purchase decisions

Based on Table 1, shows that in the X8 variable, the t value = -0.985 and the Significance value = 0.327 > 0.005, then the psychological factor does not partially affect the purchasing decisions of consumers of hydroponic vegetables at P4S Hikmah Farm.

Psychological factors are ways used to recognize their feelings, collect and analyze information, formulate thoughts and opinions in taking action (Lamb & Daniel, 2001). The indicators of psychological factors consist of motivation, perception, learning, beliefs, and attitudes. Psychological factors do not affect purchasing decisions because recognizing consumer feelings is not easy. Likewise, the feelings of P4S Hikmah Farm consumers are that they don’t have the confidence and consistency to keep buying hydroponic vegetables. This is because they are not used to consuming hydroponic vegetables.

Effect of the marketing mix and consumer behavior on purchase decision

Based on Table 2, shows that the F value = 16,852 and the Significance value = 0.000 < 0.005, then the marketing mix consists of the product (X1), price (X2), place (X3), promotion (X4), and consumer behavior consisting of cultural factors (X5), social factors (X6), personal factors (X7), psychological factors (X8) have a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

Determination of the most dominant variable

Based on the data in Table 1, shows that the product variable is the variable that has the largest Beta coefficient. This means that the purchase decision variable is more influenced by the product than the other variables. The Beta coefficient owned by the place variable is positive, this means that the better the quality of hydroponic vegetable products, the more consumers are interested in making purchasing decisions.

4 Conclusion

Based on the results of the analysis that has been carried out, the following conclusions are obtained:
Partially, product, price, and promotion variables have a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm. Meanwhile, place variables, cultural factors, personal factors, and psychological factors did not affect the purchase decision of hydroponic vegetables at P4S Hikmah Farm. Then, social factor variables have a negative effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

Simultaneously the marketing mix consisting of product, price, place, promotion, and consumer behavior variables consisting of cultural factors, social factors, personal factors, psychological factors had a positive effect on purchasing decisions for hydroponic vegetables at P4S Hikmah Farm.

The independent variable with the most dominant influence on the dependent variable is the product variable. This means that the better the quality of hydroponic vegetable products, the more consumers are interested in making purchasing decisions.

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