

The Influence of Market Orientation with Product Innovation of Hydroponic Vegetables in Bogor City, West Java

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ABSTRACT

Vegetables are one of the leading agribusiness commodities because, in addition to having a relatively high economic value, the trend of demand is increasing. This study aims to identify the market orientation of hydroponic vegetable producers, determine the effect of market orientation on the marketing innovation of hydroponic vegetable companies, and determine the impact of market orientation on vegetable marketing performance mediated by innovation. Respondents in this study totaled 60 people. The results concluded that market orientation has a significant effect on innovation. This research concludes that market orientation is critical to pay attention to because it will influence the company to innovate.

INTRODUCTION

Vegetables, with their high economic value and increasing demand, are a pivotal component of the agribusiness sector. Their relatively short harvest period and status as a daily necessity further contributes to their market prominence. West Java is known as an area with a cool climate and a region with many mountains, which is very suitable for use as agricultural land or plantations. West Java is one of Indonesia's largest provinces producing horticultural crops; at least 23 types of vegetables are cultivated every year, including leaf, stem, flower, fruit, and so on. The increasing demand for vegetables is accompanied by increasing new hydroponic producers in Bogor, making competition even tighter. The large number of new producers in Bogor makes competition unavoidable. For this reason, producers must be able to improve marketing performance by innovating to survive. Market orientation is linked with innovation to increase vegetable sales. Producers must be able to improve their marketing performance so that the sustainability of their business can last for a long time (Nadita, 2022). One effort to improve marketing performance is by innovating to mediate market orientation. Market orientation is thought to influence marketing performance mediated through innovation. This research, conducted through a comprehensive analysis of hydroponic vegetable producers, aims to identify their market orientation, determine the influence of this orientation on marketing innovation, and assess its impact on vegetable marketing performance.

LITERATURE REVIEW

Market Orientation

According to Kotler, P. and A. Gary (2012) defines market orientation (*market orientation*) as a response or response to market changes. Response or response to market changes means how a company or business organization reacts to what customers need and need for the the present and future by developing a product or service offered. Market orientation is a measure of behavior and activities that reflect the implementation of the marketing concept; market orientation is the organizational culture that is most active in creating necessary behavior for creating superior value for buyers and performance in business (Fatmawati, 2016). *Market orientation* is defined as gathering market intelligence to meet current and future customer needs, disseminating market intelligence to various company divisions and functions, and how the company responds (Utaminingsih, 2016). According to Supranoto (2011), market orientation for the development of agricultural product marketing consists of three components: market orientation, customer orientation, and inter-functional coordination, which must be implemented comprehensively

Innovation

Innovation is the result of developing new products, features, ways of production or sales, or process approaches (Dwanto, 2013). According to Kotler, P, and Keller (2009), innovation is a person's new products, services, ideas, and perceptions. Innovation is a product or service that consumers perceive as a new product or service. In simple terms, innovation can be defined a breakthrough related to new products. Kotler, P., and Gary (2012) that innovation is not limited to developing new products or service. Innovation also includes new business thinking and new processes. Innovation also seen as company's mechanism for adapting to a dynamic environment. Therefore, companies are expected to create new thoughts and ideas that offer innovative products and provide satisfactory customers services. Innovation has increasingly essential meaning as a tool to maintain the company's survival and to excel in competition. According to Kemp et all (2003), innovation can be applied to large and small companies. There are three dimensions of innovation, namely: 1) input innovation. Namely, the company carries out research and development or investments that are developed and if the research results can test the results of what has been developed; 2) process innovation, where managers must always increase technological innovation as the organization's activities run without supported by technological innovation, it is impossible for companies to win the competition and 3) innovation in output of new or developed products or processes will become an attraction for consumers.

Marketing Performance

Marketing performance is a measure of achievement obtained from the overall marketing activities of a company or organization. Marketing performance can also be seen as a concept used to measure the extent of market performance achieved by a product produced by the company (Sulaeman, 2018). According to (Gao, 2010), "marketing performance is a multidimensional process that includes three dimensions of effectiveness, efficiency, and adaptability; effectiveness and efficiency and an organization's marketing activities with market-related objectives, such as revenue, growth, and market share." Syarif et al. (2019) stated that marketing performance is a measure of performance obtained from comprehensive marketing activities of an organization or company. Marketing performance is a measure of achievement obtain from a company or organization's overall marketing process activity.

The company's goal in determining the marketing performance concept is to increase sales; other dimensions of marketing performance are profitability and satisfaction. According to Walker et. al. (2001) state that there are two dimensions of marketing performance expected by the company, namely:

1. Profitability is a company that generates profits over time to provide a flow of income far exceeding the costs incurred to attract, sell, and serve customers.
2. Customer satisfaction is a central concept in business and management discourse, useful as a reference in evaluating product performance in a company, especially in providing information about satisfaction with the products consumed.

Hartanti et al. (2013) believe that improving marketing performance is built on technical and product innovations. The consequence will be increased marketing performance through increased sales volume, increased number of customers, and the ability to create profits for the owner. Based on several theories above, it can be synthesized that marketing performance is the process and result of implementing policies, programs, promotional activities, distribution, and product sales that aim to obtain financial and non-financial profits while striving to maintain, improve, and expand marketing performance in the face of competition

Research Hypothesis

1. H11 = Marjet orientation has positive effect of vegetable performance
2. H12 = Marjet orientation has a positive effect on innovation
3. H13 = Innovation mediate the influence of market orientation on vegetable marketing performance

METHODOLOGY

The location of this research was carried out at a company that produces hydroponic vegetables in Bogor City. The research unit is a hydroponic vegetable producer business unit in Bogor City. The total number of hydroponic vegetable producers in Bogor City was determined by a census of 20 companies, each of which selected three people from each company as respondents, so the total number of respondents was 60 representatives of company management. This research was carried out from October 2022 to August 2023.

This research uses primary data and secondary data. Primary data was collected directly from 60 respondents who were hydroponic vegetable producers in Bogor City as respondents who were interviewed using a prepared questionnaire. Meanwhile, secondary data is obtained from secondary sources. This research was analyzed using two methods: descriptive statistics and verification methods. The descriptive method involved compiling a frequency distribution table to determine the perception of the level of score (score 1 to 5) for the research variables included th ecategories: strongly agree, agree, quite agree, disagree, and strongly disagree. Verification analysis answers research questions that reveal the relationship and influence between the variables studied. The results obtained from this analysis are a model that can be used as a basis for decision-making (Generalization). The verification tools used are *Structural Equation Modeling* (SEM) and *partial most miniature Square* (PLS) using the SMART PLS program.

RESEARCH RESULT

Identify the Market Orientation of Hydroponic Vegetable Producers

The market orientation carried out by vegetable producers in Bogor City in this research is as follows:

1. Customer Orientation

Customer orientation is carried out by business actors who understand and know the desires of consumers, namely, adjusting the vegetables that consumers want, selling quality and fresh vegetables, and monitoring market segmentation by analyzing the vegetables that are most in demand and needed. Business actors pay attention to consumer satisfaction by maintaining quality and freshness. Business actors follow up on consumer suggestions regarding packaging to be more attractive, quantity/weight of vegetables in one package not being too heavy, and vegetables relatively uniform

2. Competitor Orientation

Competitor orientation: paying less attention to competitors' strengths and weaknesses and seeking information about the market. Business actors respond to actions from competitors, namely in the form of suggestions and future evaluation materials. Business actors strongly agree if they seize opportunities compared to competitors. This is because opportunities can be exploited by competing healthily, while competitors can harm business actors.

3. Inter-Functional Coordination

Coordination between functions has been carried out: discussions about consumer needs and desires with the workforce and evaluations conducted once a day. Business actors inform workers about market conditions, and hydroponic business actors get market information, such as prices and other things, from the Bogor Gardening WhatsApp group and the Bogor Hydroponic Community.

Innovations that Have Been Carried Out By Vegetable Producers in the City of Bogor

1. Product Innovation

Business actors have various types of vegetables and marketing variations in the form of logos, weights, nutritional values contained in vegetables, E-tickets, and product identity labels.

2. Process Innovation

Business actors increase efficiency in using time for the production process by creating their own and modernizing the tools used in the production process.

3. Output Innovation

Variations in packaging produced by business actors sell per bunch of vegetables. However, some hydroponic business actors sell it packaged in plastic, then shaped like a bucket, using styrofoam, and then in plastic wrap. Packaging is sold in weights of 250 grams, 500 grams, and 1 kg, and can even be more than 1 kg using plastic, then sealed, then packaged and affixed with a vegetable logo as product identity. Variations in the diversity of packaging attributes produced by business actors. Nearly all hydroponic businesses use packaging attributes such as vegetable logos. Business actors can develop derivative products in the form of vegetable juice.

Implementation of Innovation for Hydroponic Vegetable Players in Bogor City

Based on an analysis of observations and interviews with hydroponic business actors, innovation has been implemented in terms of input, process, and output. According to several hydroponic vegetable business actors in Bogor, innovation is a concept that can be improved either by changing methods or new ideas aimed at developing or giving a new color to the vegetable business, which will undoubtedly make their business activities successful through creative solutions

SEM Model Analysis

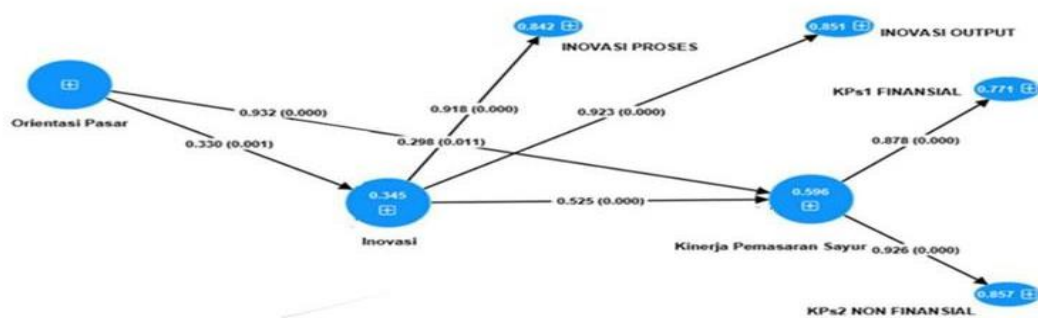


Figure 1. SEM Model Path Diagram with Partial Least Square (PLS) Approach

To assess the SEM Model with the partial *Least Square* (PLS) approach, there are two stages; first, looking at the result of the measurement model (outer model) dan the result of the structural model (inner model) being studied.

Measurement Model Testing (Outer Model/Measurements Model)

The measurement model for the variables in this research is reflective. According to Hair (2022), there are three criteria used in assessing the Reflective measurement model (*Reflective measurement models*), i.e., 1). Internal Consistency reliability 2). Convergent validity 3). Discriminant validity. The SEM PLS results show that based on these criteria, the model meets the requirements and is valid so that further tests can be carried out

Structural Model Testing (Inner Model)

The structural model (inner model) was tested using R-square, effect size f^2 value, and Q^2 prediction assessment.

1. R-square Value

The result of R-square value for the research model calculated using Smart PLS Software can be seen in table 1 as follow:

Table 1. R-square Value

Variable	R-Square	R-square adjusted
Innovation	0.345	0.322
Vegetable marketing performance	0.596	0.574

The R-square value for innovation variable was obtained at 0.345. These results indicate that the market orientation variable influence 34,5% of the innovation variable. R value² between 0.25 to 0.5 indicates that the model's prediction accuracy has a weak (not strong) effect. The R-square value for the marketing performance variable for hydroponic vegetable products was obtained at 0.596. These results show that 59.6% of the marketing performance variables for hydroponic vegetable products are influenced by the variables Market Orientation and Innovation. R value² is between 0.5 and 0.75, indicating that the model's prediction accuracy has a moderate effect.

2. Assessment of the effect size f^2

The effect size f^2 shows the contribution of each construct to the dependent (endogenous) latent variable. f^2 values equal to 0.02, 0.15, and 0.35 can mean that the latent variable predictor has a small, medium, and significant influence (Cohen, 1988 in Hair, 2022; 196). The results of calculating the effect size f^2 are given in Table 2 below.

Table 2. Effect Size Assessment

Variable	f- square	Information
Market Orientation -> Innovation	0.154	Currently
Market Orientation -> Vegetable Marketing Performance	0.176	Currently
Innovation -> Vegetable Marketing Performance	0.446	Big

3. Q² predict Assessment

Q-square (Q²) is predictive relevance. This measure measures whether a model has predictive relevance or not. Q² prediction greater than 0 indicates the model has predictive relevance. Q²>0 means low, Q²>0.25 means moderate and Q²>0.5 means high. (Hair, 2019). The results of the Q² prediction calculation are given in Table 3 below.

Tabel 3. Q² Predict

Variable	Q ² predict
Innovation	0.279
Vegetable Marketing Performance	0.348

The Q²predict value for both endogenous variables (marketing performance of hydroponic vegetable products and innovation) is above 0, indicating the model has predictive *relevance*. The Q²predict value for the Innovation variable is 0.279 or greater than 0.25 (Q²>0.25), indicating that the accuracy of the PLS path model prediction on the marketing performance of hydroponic vegetable products is in the relatively strong (moderate) category. The Q²predict value for the marketing performance variable for hydroponic vegetable products is 0.348 or greater than 0.25 (Q²>0.25), indicating that the prediction accuracy of the PLS path model for marketing performance is in the relatively strong (moderate) category.

DISCUSSION

The calculation results show that the relationship between market orientation and innovation is shown by the path coefficient value of 0.030 a t-value of 3.213 and a p-value of 0.001. The t-statistic value obtained (3.213) is greater than the critical value (1.96) and the p-value (0.001) is smaller than the alpha value of 0.05, meaning the test is significant. These results mean that market orientation has a significant effect on innovation. Market orientation has a close relationship with innovation. The research results state that the relationship between market orientation and innovation is shown by a path coefficient value of 0.330 with a t-value of 3.213 and a p-value of 0.001. The t-statistic value obtained (3.213) is greater than the critical value (1.96), and the p-value (0.001) is smaller than the alpha value of 0.05, meaning the test is significant. These results mean that market orientation has a significant effect on innovation. Therefore, companies that are always market-oriented will always want to fulfill the market's wants and needs, which can be achieved through innovation.

Market orientation has internal consequences for companies that have to develop innovation continuously. However, apart from that, it also contributes externally in the form of improving marketing performance (Kemp et al., 2003; Mbizi et al., 2013; Manan & Mamat, 2011; Rosli & Sidek, 2013; Agrawal et al., 2003; Dariska & Sukwandi, 2007; Lin et al., 2008). Baker and Sinkula (2009) state that market orientation is directly and positively related to innovation. Remli et al. (2013) also support this statement by identifying that market orientation with customer orientation, competitor orientation, and inter-functional coordination positively relate to innovation. Market orientation has a significant

effect on innovation. Innovation is also seen as producing better or more effective products, processes, services, and ideas to meet market needs through superior competitiveness (Suryana, 2013; Kemp et al., 2003). Companies that are always market-oriented will always want to fulfill the market's wants and needs, which can be achieved through innovation. Innovation can be carried out through input, process, and output.

Three market orientation dimensions are intelligence *dissemination* and *responsiveness* (Rahardjo & Sirait, 2009). This is also done by market orientation, which is directed at three things: market orientation, customers, and inter-functional coordination (Supraptini, 2011). Baker and Sinkula (2009) state that market orientation is directly and positively related to innovation. Remli et al. (2013) also support this statement by identifying that market orientation with customer orientation, competitor orientation, and inter-functional coordination is positively related to innovation. Furthermore, Serna et al. (2013) also stated that market orientation (customer orientation, competency orientation, and coordination between functions is positively related to innovation). The influence of market orientation on the marketing performance of hydroponic vegetable products through innovation is shown by the influence coefficient value of 0.174 with a t-value 2.364 and a p-value of 0.018 is smaller than the alpha value of 0.05, meaning the test is significant. These results mean that market orientation significantly affects the marketing performance of hydroponic vegetable products through innovation.

This is in line with the research results of Tournois (2013), explaining that market orientation positively affects marketing performance. Apart from that, research conducted by Sulistianto (2003), Cano. et al. (2004) and Sin et al. (2005) stated a significant relationship between market orientation and marketing performance. Ghavati (2014) also states that market orientation has a positive and significant effect on performance (financial performance). Financial performance variables are conceptualized as evaluations of financial ratios related to sales growth, profits, market share, and ROI. Kirca et al. (2005) concluded that the relationship between market orientation and overall performance is influenced by market orientation. This is in accordance with Ellis's (2006) statement that quantitative evidence obtained in a meta-analysis of 56 studies conducted in 28 countries proves that market orientation generally determines marketing performance. Innovation influences the marketing performance of hydroponic vegetable products. The relationship between innovation and marketing performance is in line with the results of research conducted by Kemp et al. (2003) and Mbizi et al. (2013), who stated that there is a relationship between innovation and marketing performance of agricultural products, where the dimensions of innovation consist of 1) input innovation, 2) process innovation and 3) output innovation. The results of research conducted by Manan and Mamat (2011) and Rosli and Sidek (2013) also support the research results of Kemp et al. (2003), which states that there is a positive relationship.

Market Orientation Significantly Influences the Marketing Performance of Hydroponic Vegetable Products through Innovation.

Research on market orientation and marketing performance provides positive results, namely that market orientation has a relationship and influences marketing performance (Sulistianto, 2003; Cano et al., 2004; Sin et al., 2005). As research by Tournois (2013) explains, market orientation positively affects marketing performance. Ghavati (2014) also states that market orientation has a positive and significant effect on performance (financial performance). The relationship between innovation and marketing performance is in line with the results of research conducted by Kemp et al. (2003) and Mbizi et al. (2013), who stated that there is a relationship between innovation and marketing performance of agricultural products, where the dimensions of innovation consist of 1) input innovation, 2) process innovation and 3) output invasion. The results of research conducted by Manan and Mamat (2011) and Rosli and Sidek (2013) also support the research results of Kemp et al. (2003), which states that there is a positive relationship.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research conducted, the author can formulate the following conclusions:

1. Hydroponic vegetable business players have carried out market orientation regarding customer orientation, such as understanding needs, paying attention to, and following up on customer suggestions. Competitor orientation includes analyzing competitors' strengths and weaknesses, responding to competitors' actions, and capturing opportunities compared to competitors. Coordinating between functions includes discussions about customer needs and desires with workers, information about market conditions, and meetings with workers.
2. Hydroponic vegetable company product innovation is influenced by market orientation. Research results demonstrate this.
3. Innovation is one of the determining factors in improving marketing performance due to good market orientation. The research results show this namely the influence of market orientation on marketing performance through innovation.
4. Market orientation is critical to pay attention to because it will influence the company to continue to innovate, allowing its hydroponic vegetable products to continue adapting according to customer needs.

5. Increasing marketing performance is influenced by customer-centered market orientation, where the test results show that market orientation influences marketing performance.
6. Marketing performance and product innovation activities of hydroponic vegetable companies increase. The research results show that innovation influences marketing performance, namely the influence of market orientation on marketing performance through innovation.
7. Innovation is one of the determining factors in improving marketing performance due to good market orientation. This is shown by the research results, namely the influence of market orientation on marketing performance through innovation

Research Implications

Product innovation in hydroponic vegetable companies needs to be continuously developed in an effort to meet customer needs. This includes producing a wide variety of types of vegetables, better packaging and adding product attribute information, improving product quality, and responding quickly to market demand. Market orientation must be clearly defined because this will impact marketing performance, especially as hydroponic vegetable companies have clear market segments. Market orientation is focused on fulfilling consumer desires, the ability to analyze competitors' strengths and weaknesses, and responding to policies related to hydroponic vegetable commodities. Hydroponic vegetable company innovation needs to be continuously developed because it will be one of the determining factors in improving marketing performance. Hydroponic vegetable company product innovation needs to be considered, namely suitability to customer needs so that product availability, effectiveness, and efficiency in the production process can be guaranteed.

ADVANCED RESEARCH

Every study has limitations; thus, further research is recommended to accommodate input and output indicators on innovation variables and processes for utilizing innovation so that it can explain the role of more of the innovation variables studied and can also examine aspects of the organization's potential capabilities, such as the organization's active role, to demonstrate its organizational orientation capabilities.

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