

Market Sensing and Product Innovation Capabilities: Enhancing Marketing Performance

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Abstract— This study aims to determine the role of market sensing and the ability of product innovation in an effort to improve marketing performance. This research involves several variables, namely market sensing variables, competitor intelligence, technological accessibility, product innovation capabilities and marketing performance. The sample used was 458 IKM Batik in Central Java. The sampling technique uses purposive sampling. Testing data analysis using PLS (Partial Least Square) with WarpPLS 5.0 software. The findings in this study are that market sensing has a positive and significant effect on competitor intelligence, market sensing has a positive and significant effect on technological acceptability, competitor intelligence has a positive and significant effect on product innovation capabilities, technological accessibility has a positive and significant effect on product innovation capabilities, and innovation capabilities the product has a positive and significant effect on marketing performance.

Keywords— Market Sensing, Competitor Intelligence, Product Innovation Capability, Technology Accessibility, Marketing Performance.

I. INTRODUCTION

Market sensing is an important part of the learning process about consumers, competitors, and other parties in the business environment [1]. Companies to grow and develop properly always need information and collect data about consumers, competitors and the environment. Companies that have market sensing will be able to increase the success of product innovation, which in turn can improve marketing performance [2]. Companies that have market sensing will be able to understand, know and manage something related to the market. In other words the ability to find out information about markets, products, prices, sales and resources that are ultimately used to increase company profits.

Companies that have good market sensing will also find out information about competitors, be able to monitor promotional activities carried out by competitors and know all activities carried out by competitors, both from products made by competitors to competitors' strategies. The attention or response of competitors is the seller's understanding of the strengths and weaknesses of short-term competitors as well as the capabilities and strategies of key competitors and potential competitors who are long-term [3]. Companies that are able to analyze the competitor's strategy in controlling the desires of consumers are companies that have competitor intelligence capabilities.

By sensing a good market, the company is also able to apply existing technology, which makes the company more innovative. Technology is one of the factors that influence the success of new products [4], where companies that are able to apply technology, will be able to create better and more innovative products. Companies that have high technology have a very big influence on the superiority of product differentiation [6].

SMEs that have market sensing capabilities will increasingly enhance product innovation [7]. A company that learns about its environment will be more innovative [8]. Companies that have product innovation capabilities, the company is able to improve its marketing performance. Innovation is an important function in management, because innovation is related to company performance [9].

The development of the batik industry in Indonesia is increasingly global. Especially after Indonesian batik gained world recognition on October 2, 2009 by UNESCO, which established batik as the Intangible Cultural Heritage of Humanity from Indonesia. The growth of batik is also sustained by the enthusiasm of the community to use batik, both from government employees, state-owned or private companies and the wider community from various backgrounds and ages, thereby increasing the demand for batik products that encourage the growth of the national batik industry. Batik is one of the textile products that are found in many districts / cities in Central Java. The batik industry in Central Java is largely a small and medium industry, which is one of the strategic industries in the Indonesian economy, which can absorb a lot of labor. The income of the batik industry in Central Java has increased from year to year, only an increase in income (deviation) experienced instability in 2013-2018, and even decreased in 2018 due to: The batik industry faces increasingly fierce competition in line with the opening of the domestic market, trade free with China making an invasion of Chinese products into Indonesia. Even batik from China enters Indonesia at lower prices and more attractive motifs

Based on the above, and based on the results of previous studies and business phenomena that exist in the Small and Medium Industry (IKM) Batik, the main problem in this research can be formulated is "How is the role of market sensing and the ability of product innovation in an effort to improve marketing performance?"

II. LITERATURE REVIEW

A. Market Sensing

The ability of market sensing to monitor the market continuously, to find market opportunities accurately, and also to understand about market threats [10]. Most retail entrepreneurs studied had relatively well-developed market sensing capabilities [11]. Companies that have market sensing will be able to find out the information needed by the company, not only from consumers, suppliers and even information from competitors. Market sensing can increase competitor intelligence. Competitor intelligence has the main function in providing the ability to obtain in-depth knowledge of the competitive environment [12]. Based on these thoughts, the hypothesis is determined as follows: H1: Market sensing has a positive effect on the intelligence of competitors. Technology capability is related to a company's ability to mobilize and use information technology-based resources in combination or present together with other resources and capabilities [13]. Information technology allows companies to track changes in customer choices much faster. Web-based broadcasting systems are used to capture customer information online and deliver it directly to managers. Based on these thoughts, the hypothesis is determined as follows: H2: Market sensing has a positive effect on technological accessibility.

B. Competence Intelligence

Competitor intelligence has the primary function of providing the ability to gain in-depth knowledge of the competitive environment in which companies operate by collecting, analyzing, and disseminating information to identify company needs [13]. The use of information from suppliers, customers and competitors is a key factor for success in achieving marketing innovation through product innovation [14].

Based on these thoughts, the hypothesis is determined as follows:

H3: Competitor intelligence has a positive effect on the ability of product innovation.

C. Technology Accessibility

Technology accessibility is the ability of a company to apply technology that is currently developing. Public information technology mechanisms help drive innovation in company products, services, and processes [15]. Innovative companies that have technology that can lead future competition in the

industrial world [16]. Globalization makes the business environment more competitive, for that innovative companies always need sophisticated technology to be able to compete with other companies.

Based on these thoughts, the hypothesis is determined as follows:

H4: Technology accessibility has a positive effect on the ability of product innovation.

D. Product Innovation Capability

Innovation has a very important role in the company, innovation can improve performance [17]. Adopting innovative practices tends to produce competitive advantages and lead to better business performance. Companies that develop innovation and implement TQM get more benefits than companies that do not develop innovation and implementing TQM [18].

Based on these thoughts, the hypothesis is determined as follows:

H5: The ability of product innovation has a positive effect on marketing performance.

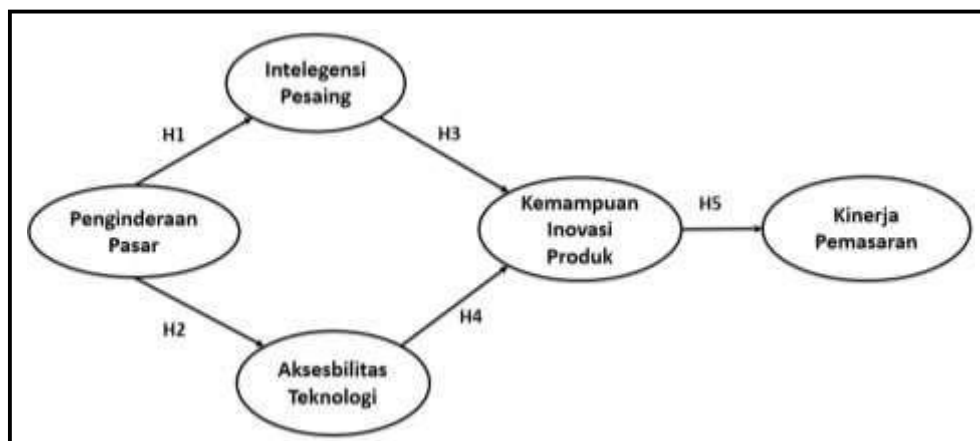


Fig.1 Conceptual Framework

III.

RESEARCH METHOD

A. Sample

In this study the sample used was 458 IKM Batik in Central Java. The sampling technique uses purposive sampling, namely sampling using specified criteria. The criteria are IKM batik which is in Central Java, IKM batik which produces and has its own brand and IKM batik which has been established for at least 3 years.

B. Data Analysis

Research to test the validity and reliability of research instruments, confirm the accuracy of the model, while testing the effect of a variable on other variables. This research uses Partial Least Square (PLS) technique with WarpPLS 5.0 software.

C. Development Indicator

TABLE 1
IDENTIFICATION OF INDICATORS

No	Variables	Indicators
1	Market Sensing	Understand changing trends Knowing the needs of consumers Able to explain products that are not liked by the market

		<p>Able to explain the causes of increased demand.</p> <p>Able to understand consumer behavior.</p>
2.	Competitor Intelligence	<p>Monitoring competitors' promotion activities</p> <p>Observation of new competitor product launches</p> <p>Collection of competing product responses</p> <p>Knowing information on the rise / fall of competitor sales</p> <p>Observation of marketing strategies that will be launched by competitors.</p>
3.	Technology Accessibility	<p>Accessing new technologies for new product development.</p> <p>Produce products that have advantages over competitors.</p> <p>Get technology and information services quickly and effectively.</p> <p>Obtaining convenience shopping facilities, which encourage consumer convenience.</p> <p>Conduct training for employees, if new technologies are found.</p>
4.	Product Innovation Capability	<p>The power of producing new products</p> <p>Able to produce new designs.</p> <p>Able to develop new users</p> <p>Able to modify the product with other ingredients.</p> <p>Has a unique product value, quality and price that is different from competitors.</p>
5	Marketing Performance	<p>Able to increase sales volume,</p> <p>Increase customer growth</p> <p>Has ability</p> <p>Able to master market share</p> <p>Able to compete with other companies.</p> <p>Expanding sales area</p>

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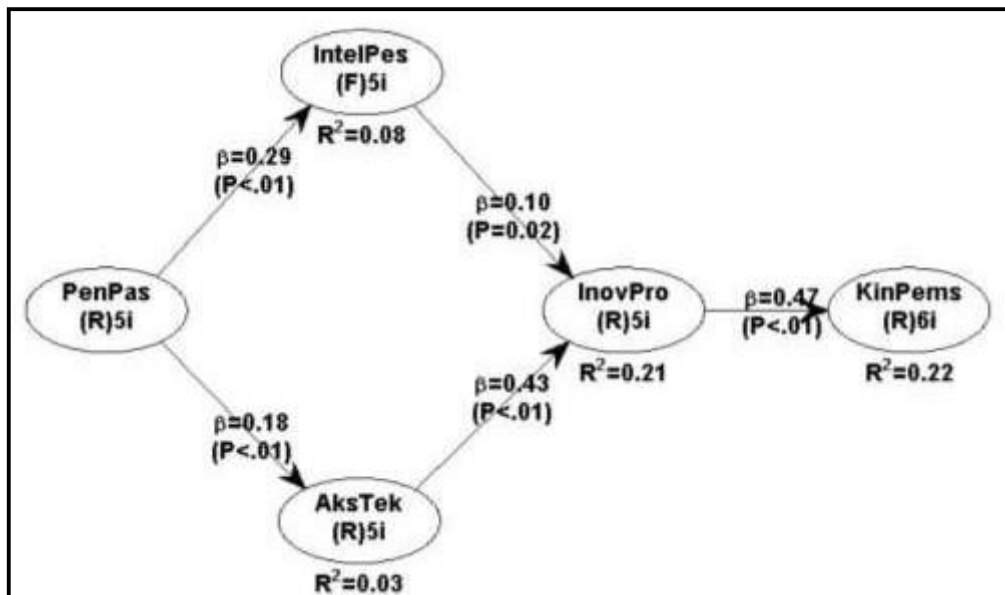


Fig. 2 Identification of Indicators

G. Outer Model

Testing the outer model in this study uses two parameters namely the construct validity test (convergent and determinant validity) and the construct internal consistency test (reliability). The construct validity test of 26 indicators has been fulfilled.

TABLE II
AVERAGE VARIANCE EXTRACT (Ave)

Note	PenPas	IntelPe	AksTek	InovPro	KinPems
AVE	0.640	0.714	0.678	0.658	0.728

TABLE III
LOADING FACTOR

Note	PenPas	IntelPe	AksTek	InovPro	KinPems
PP1	0.929	0.298	0.159	0.151	-0.002
PP2	0.957	0.218	0.125	0.130	0.061
PP3	0.900	0.137	0.150	0.244	0.299
PP4	0.920	0.317	0.104	0.205	0.023
PP5	0.964	0.196	0.108	0.133	0.061
IP1	0.186	0.974	0.005	0.102	-0.081
IP2	0.296	0.946	0.036	0.120	-0.032
IP3	0.300	0.932	0.078	0.180	-0.060
IP4	0.187	0.951	0.152	0.169	0.091
IP5	0.230	0.954	0.098	0.154	0.059
ATB1	0.176	0.074	0.841	0.367	0.349
ATB2	0.131	0.078	0.841	0.368	0.365
ATB3	0.093	0.015	0.853	0.358	0.368
ATB4	0.068	0.090	0.853	0.368	0.353
ATB5	0.109	0.079	0.805	0.399	0.419
KIP1	0.119	0.133	0.371	0.838	0.359
KIP2	0.170	0.111	0.337	0.810	0.436
KIP3	0.122	0.070	0.378	0.825	0.395
KIP4	0.141	0.167	0.398	0.807	0.378

KIP5	0.171	0.147	0.332	0.845	0.354
KP1	-0.010	-0.007	0.377	0.397	0.837
KP2	0.065	0.018	0.367	0.394	0.840
KP3	0.025	0.010	0.370	0.372	0.851
KP4	0.068	-0.069	0.353	0.368	0.855
KP5	0.214	-0.012	0.408	0.392	0.796
KP6	0.059	0.042	0.336	0.413	0.843

TABLE IV
VALIDITY DETERMINANT

Note	PenPas	IntelPe	AksTek		InovPro	KinPems
PenPas	0.800	0.252	0.138		0.175	0.080
IntelPe	0.252	0.845	0.079		0.153	-0.001
AksTek	0.138	0.079	0.824		0.441	0.439
InovPro	0.175	0.153	0.441		0.811	0.466
KinPems	0.080	-0.001	0.439		0.466	0.853

The table above shows that there is a very strong and significant positive relationship between one variable and another, as seen from the determinant validity test matrix. And the value of average variance extract (AVE), factor loading and determinant validity are > 0.50.

H. Reliability Test

TABLE V
RELIABILITY

Note	PenPas	IntelPe	AksTek	InovPro	KinPems
Composite reliability	0.898	0.926	0.913	0.906	0.941
Cronbach's alpha	0.855	0.899	0.881	0.870	0.925

The reliability test results above indicate that the composite reliability and Cronbach's alpha values > 0.70 where the value meets the rule of thumb is 0.60. These results can be interpreted that the respondents are consistent in answering questionnaire questions.

I. Structural Model Assessment (Inner Model)

TABLE VI
PATH COEFFICIENT

Variables		Path Coefficients	P-Values	Note	
PenPas	→	IntelPe	0.288	<0.001	Positively Significant
PenPas	→	AksTek	0.181	<0.001	Positively Significant
IntelPe	→	InovPro	0.096	0.019	Positively Significant
AksTek	→	InovPro	0.432	<0.001	Positively Significant
InovPro	→	KinPems	0.468	<0.001	Positively Significant

Based on table 4.5 above shows that the market sensing of competitor intelligence has a path coefficient of 0.288 and a p-value of <0.001 (significance <0.05). This means that market sensing has a positive and significant effect on competitor intelligence. Market sensing of technological accessibility has a path coefficient of 0.181 and a p-value of <0.001 (significance <0.05). This means that market sensing has a positive and significant effect on technological accessibility. Competitor intelligence of product innovation capabilities has a path coefficient of 0.096 and a p-value of <0.019 (significance <0.05). This means that the competitor's intelligence has a positive and significant effect on the ability of product innovation.

Technological accessibility to the ability of product innovation has a path coefficient of 0.432 and a p-value of <0.001 (significance <0.05). This means that the ability of product innovation has a positive and significant effect on technological accessibility. The ability of product innovation on marketing

performance has a path coefficient of 0.468 and a p-value of <0.001 (significance <0.05). This means the ability of product innovation has a positive and significant effect on marketing performance.

IV. DISCUSSION

A. Hypothesis Testing 1: Market sensing has a positive effect on competitor intelligence

Statistical test results show that market sensing of competitor intelligence has a path coefficient of 0.288 and a p-value of <0.001 (significance <0.05), so it can be concluded that if market sensing increases, competitor intelligence will also increase (H1 Accepted). In other words market sensing has a positive and significant effect on competitor intelligence.

The results of this study are in accordance with competitor intelligence is strongly influenced by information sources, the amount and type of information obtained in the market, it can be interpreted that competitor intelligence is influenced by market sensing [19].

B. Hypothesis Testing 2: Market sensing has a positive effect on technological accessibility

Statistical test results show that market sensing of technological accessibility has a path coefficient of 0.181 and a p-value of <0.001 (significance <0.05), so it can be concluded that if market sensing increases, the effect of technological accessibility will also Increase (H2 Received). In other words the market sensing has a positive and significant effect on technological accessibility.

Market sensing is needed because of environmental uncertainty, intense competition and rapid market changes, therefore high technological and information knowledge is needed to capture existing innovations [20].

C. Hypothesis Testing 3: Competitor intelligence has a significant positive effect on product innovation capabilities

Statistical test results show that competitor intelligence on product innovation ability has a path coefficient value of 0.096 and p-value of 0.019 (significance <0.05), so it can be concluded that if competitor intelligence increases, the ability of product innovation will also increase (H3 Received). In other words the competitor's intelligence has a positive and significant effect on the ability of product innovation.

External information is a key factor for the success of achieving marketing innovation through product innovation and organizational innovation. External information is information obtained from suppliers, customers and competitors [20].

D. Hypothesis Testing 4: Technology accessibility has a significant positive effect on the ability of product innovation

Statistical test results show that technological accessibility to the ability of product innovation has a path coefficient of 0.432 and a p-value of <0.001 (significance <0.05), so it can be concluded that if technological accessibility increases, the ability of product innovation also will increase (H4 Received). In other words technological accessibility has a positive and significant effect on the ability of product innovation. The relationships with various service intermediaries (ie, technology service companies, accounting and financial service companies, and law firms) have a significant positive relationship with product innovation in new ventures [21]. 5.4. Hypothesis 5 Testing: The ability of product innovation has a significant positive effect on marketing performance. Statistical test results show that the ability of product innovation on marketing performance has a path coefficient of 0.468 and a p-value of <0.001 (significance <0.05), so it can be concluded that if the ability of product innovation increases, marketing performance also will increase (H5 Received). In other words the ability of product innovation has a

positive and significant effect on marketing performance. The innovation of new product development has a significant positive effect on marketing performance [21]. The use of e-commerce have improved the consumer goods significantly as the growing interest [22]. The value on the growing productivity is steered by innovation in technology towards marketing [23].

V. CONCLUSIONS

In this study empirically all hypotheses are supported, the hypothesis is that market sensing has a positive and significant influence on competitor intelligence, market sensing has a positive and significant effect on technological accessibility, Competitor intelligence has a positive and significant effect on product innovation capabilities, technological accessibility has a positive and significant effect on the ability of product innovation, and the ability of innovation has a positive and significant effect on product marketing performance.

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