Innovation Diagnostic of Micro, Small and Medium Enterprises (SME): A Comparative Study of Innovation Process of SMEs in Depok and Solo

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Abstract: This study aims to analyze innovation diagnostic in micro, small, and medium enterprises in Depok. The measurement of this innovation process refers to the measurement of Innovation Diagnostic Diamond proposed by Mazzarol and Reboud (2006), measuring the innovation capacity of the company in terms of market, innovation, strategy, and resources. The data are collected through questionnaires distributed to Micro, Small, and Medium Enterprises (SMEs). The SMEs selected as samples of this study is 99 SMEs in Depok and 112 SMEs in Solo. The findings of the study show SMEs as an active innovator by presenting the profile of SMEs and the perception of the context of existing innovations. The obstacles in innovation learning are related to human resources, the implementation of technology and the access to capital.

Keywords: Innovation capacity, Innovation Diagnostic Diamond, SMEs

INTRODUCTION

Micro, small and medium enterprises (SMEs) is growing rapidly in Indonesia after the monetary crisis in 1998 due to the bankruptcy of most companies. SMEs play a role in social and economic growth of Indonesia, initiated by the number of industries involved, contribution to gross domestic product, and the number of labor force involved. Hamdani and Wirawan (2012) state that SMEs have a unique ability to survive and improve corporate performance during the economic crisis. In many studies, the innovation capacity of SMEs is frequently associated with financial performance, in this case, measured by profit (Afuah, 2003).

Furthermore, it is said that the reasons for the durability of SMEs among others are the flexibility in the adaptation process of production, the ability to develop capital independently, the ability to pay higher interest, and minimum bureaucratic involvement. With this adaptability, SMEs can survive during the economic crisis of Indonesia in 1998 and the global economic crisis of 2008.

According to Indarti and Langenber (2004), most SMEs in Indonesia use traditional methods in their business and marketing activities. It is seen from the lack of employee's insight and knowledge, the lack of human resources in terms of quality and quantity, unfavorable working atmosphere, inadequate facilities, limited access to markets and information, and unfulfilled bureaucracy.

According to the study carried out by the Ministry of Cooperatives and SMEs in 2005, the majority of SMEs in Indonesia adheres to the strategy of "me too", meaning to follow the idea of another party. This strategy was a success in the past because of the small number of products circulating in the Indonesian market. When most businesses implement this strategy, the number of products in Indonesia increases; hence decreases the value of the products so that SMEs cannot compete in terms of bid-price and market timing.

There are many issues for the development of SMEs in Depok. SMEs have limited access to market information for their reference in innovation learning. Moreover, SMEs have limited innovation capacity regarding the adaptation of new technologies and application for the diversification of products. The crucial factor as well as the biggest challenge for SMEs is the incomprehension and inability to obtain intellectual property rights/IPR). Large companies can easily get IPR due to their capital strength, while SMEs with limited capital will find it difficult to buy intellectual property rights.

In terms of capital, the main obstacle faced by SMEs is their tendency to rely on a third party. In short-term conditions, it is considered advantageous because SMEs do not need to take account of market timing. However, in long-term conditions, the dependence is detrimental to SMEs because it will reduce their bargaining power (Hamdani and Wirawan, 2012). Based on the study conducted by Nauwelaerts, Antwerp and Hollaender (2012), there are rules and laws inhibiting the creativity of SMEs.

In addition to these obstacles, SMEs fail to find capital for innovation activities. Liao and Rice (2010) state that investment in innovation can lead to competitive company performance when followed by changes in company position in the market. Devos, De Woestyne and Van de Broeck in Mazzarol and Reboud (2009) argue that the lack of capital for research, R&D incapacity, high risk and lack of knowledge in taking action are the reasons why SMEs do not have innovation competency.

In terms of the process of innovation learning, SMEs have different characteristics from well-established organizations. Large companies usually have special units for research and development so that the learning process is called structural ambidexterity, or more like a combination of contextual and structural ambidexterity called hybrid ambidexterity (Kusumastuti, *et al.*, 2016). Meanwhile, the learning process of SMEs tends to be contextual (Kusumastuti, *et al.*, 2015).

Based on that background, this study discusses the measurement of innovation capacity of SMEs in Depok and Solo. The measurement of innovation capacity applies Innovation Diagnostic Diamond developed by Mazzarol and Reboud (2006) based on the index of market, innovation, resource, and strategy.

THE METHOD OF THE STUDY

The data of this study are collected using questionnaires and interview guidelines. In-depth interview and questionnaires are given to 15 managers and owners of SMEs in Depok and 9 managers and owners of

SMEs in Solo. Questionnaires and in-depth interviews are also given to the employees of SMEs. The SMEs worth-processed to the next stage are amounted to 99 SMEs in Depok and 112 SMEs in Solo with the consideration that those SMEs fulfill the requirement of complete data and are willing to fill in the questionnaire.

The instrument of the study applies guidelines and indicators of Mazzarol and Reboud (2006), measuring innovation capacity based on four indices, namely market, innovation, strategy, and resources. Market Index observes how far the company implements a systematic approach to analyze and explore market condition and consumer reaction in responding and adapting to the innovation of the companies. Innovation index observes how far the company protects its intellectual property, how the company approaches innovations to be produced and sees internal and external (employee and consumer) involvement in the process. Resource index measures the adequacy of resources in the company for continuing the development of ideas considered as corporate innovations, or measure the availability of resources in the company to accomplish the innovation and put it into the market. The last measurement is strategy index measuring how a formal approach is carried out by the company in implementing business planning and strategy. The study also analyzes whether the company already has a formal approach in business planning in order to market the innovation. To measure the four indices, ten statements are used as the indicators of each index. The statements cover the extent of the capability of the company in the index. Each statement is scaled using Likert 5-scale, meaning that number 1 reflects disagreement with the statements in the questionnaire or the SMEs never carry out the activities, while number 5 shows agreement with the statements in the questionnaire or the SMEs carry out the activities in question.

FINDINGS AND DISCUSSION

In the context of innovative learning, both large-scale enterprises and SMEs are strongly influenced by the context. In this increasingly globalized world of competition, innovation becomes a central capability for companies to grow, develop, and prosper. Every organization, including SMEs, must definitely carry out innovative learning. The understanding related to innovation management highly depends on the creativity of the owner of the business. This study presents the discussion of innovation management observed from four (4) dimensions according to Mazaroll. The result of the assessment based on the perceptions of the managers of SMEs in both cities is expected to provide a comparison of innovation management.

The results of each variable are shown in Table 1 and Table 2. After the interview, there are some statements removed from the questionnaires because they have been answered by the previous statement. Table 1 shows the highest average value of market index on the indicator of consumer benefits. This indicator shows that SMEs are well aware that the benefits consumers want from the product or service offered are a main consideration so that their products can be sold in the market. SMEs in Solo are more exposed to the market because the tourism program of the Government of Solo frequently places the cluster of Batik Solo in the tourism destination of Laweyan and Kauman. SMEs in Solo are also aware that they must understand the needs and wants of the consumers. It is reflected in the wide segment of batik produced and the existing price (from thirty thousand to six million rupiahs per sheet).

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Table 1
The Description of Market Index

No.	Indicator	Average in Depok	Average in Solo
1	Consumer benefits	3.22	**4.22**
2	Pricing strategies	2.93	3.15
3	Consumer understanding	2.99	4.13
4	Consumer adaptation to innovation	2.89	3.89
5	Consumer reaction after adapting to innovation	3.11	**4.22**
6	Consumer's suitability for innovation	3.03	3.21
7	Consumer's risk and cost	**2.42**	**2.75**
8	Product/innovation offered	2.52	3.24
9	Consumer involvement in innovation process	2.97	4.12
10	Consumer preparedness to innovation offered	3.06	3.26

Source: the data processed by the author

Pricing strategy, consumer's preparedness to innovation offered, and consumer's suitability for innovation are more or less similar in both cities. It means that prices are often available for different segments of consumers. In addition, consumer adaptation and openness to innovation is well received, usually indicated by high sales for new products that reflect the novelty in terms of style, cut, pattern, color, and purpose of the product.

Meanwhile, Table 2 shows the highest average value of innovation index on the indicator of the preparedness of the product of innovation, meaning that SMEs prepare the product or service of innovation to be accepted and used by consumers.
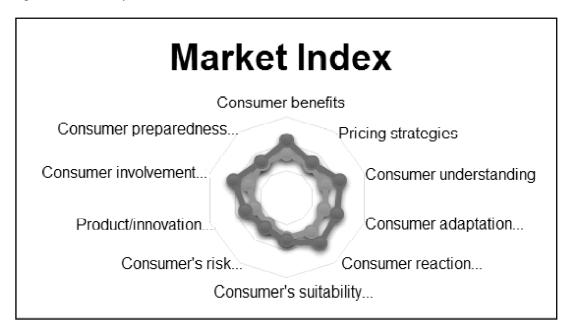

Figure 1: The Comparison of Market Index between SMEs in Depok and Solo

Table 3 shows the highest average value of strategy index on the indicator of the formality in business planning, indicating that SMEs have arranged strategic business planning in carrying out its operation. Table 4 shows the highest average value of resource index on the indicator of commercialization competence, meaning that the companies market their products or services optimally. This is also in line with the indicator of the preparedness of technological resource that is merely 0.01 points apart from the indicator of commercialization competence, indicating that SMEs utilize the technology owned to support their operational activities.

Meanwhile, observed from the lowest average value of each index, it can be seen that SMEs has some deficiencies. On market index, the lowest average value is shown on the indicator of consumer's risk and cost, for SMEs in both cities. It indicates that SMEs do not search for consumer response regarding the maximum tolerable risks and costs of the product or service offered.

The lowest average value is seen from the indicator of intellectual property protection, meaning that SMEs do not have the ability to protect the innovation of products or services owned by intellectual or patent protection. Some interviews also indicate low awareness of SMEs related to the protection of their copyrighted work. It is consistent with the statement by the previous study that SMEs are not likely to provide intellectual property protection to their products or services. The lowest average value of strategy index is seen from the indicator of the government's intervention and role. In this context, SMEs do not feel the role and intervention of the government in their operational activities. Table 4 shows the lowest average value of resource index on the indicator of financial resources.

Table 2
The Description of Innovation Index

No.	Indicator	Average in Depok	Average in Solo
1	The formal process in the development of innovation	3.16	3.67
2	The priority of innovation	3.19	4.14
3	Company's independence	2.99	4.14
4	The preparedness of the product of innovation	3.23	**4.86**
5	The protection of IPR of innovation	**2.56**	3.83
6	Commercialization experience	2.68	3.73
7	Consumer involvement	3.09	3.85
8	Employee involvement	3.05	3.45

Source: the data processed by the author (2017)

Table 2 shows that the preparedness of the product of innovation of SMEs in Solo has a higher value compared to SMEs in Depok. It means that SMEs in Solo are more aware of the importance of innovation in their products. Usually, the learning process carried out by the SMEs in Solo is greatly helped by the collaboration between SMEs under batik forum there.

Strategy index is a measurement related to the strategic planning by SMEs in terms of product commercialization. Business planning by SMEs in general must be carried out in different scopes depending on the orientation. The export orientation of SMEs in Depok is still limited. There are some foreign-
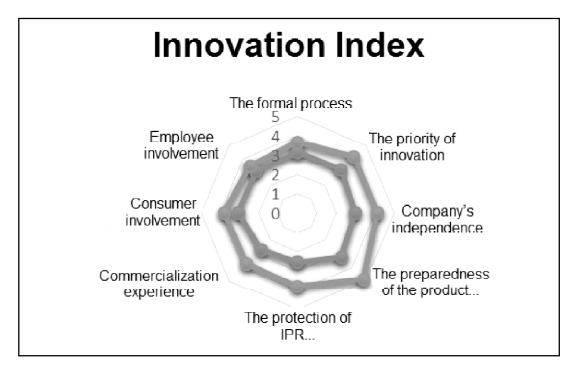
Figure 2: The Comparison of Innovation Index between SMEs in Depok and Solo

oriented SMEs operating in Muslim fashion and barrell waterfalls that already have target market abroad, but most SMEs are still domestic-oriented. Most batik produced by SMEs in Solo is export-oriented. Therefore, the indicator of the bargaining power of consumers and suppliers as well as potential threats in Solo is greater than in Depok because of the expanding market coverage. For SMEs in Depok, the potential threat to its products is high, considering Depok is a buffer city of the metropolitan city of Jakarta with high imported and branded product absorption so that the products of SMEs are located in marginal shopping areas.

Table 3
The Description of Strategy Index

No.	Indicator	Average in Depok	Average in Solo
1	The formality of business planning	3.23	3.67
2	The bargaining power of consumers	2.93	4.14
3	The bargaining power of suppliers	2.98	4.25
4	Threat	**2.89**	**4.45**
5	Competitor's reaction	3.10	3.83
6	Business partner's reaction	3.02	3,73
7	The role and intervention of the government	2.50	3.85
8	Risk assessment	2.96	3.35
9	Financial modelling	3.08	4.25

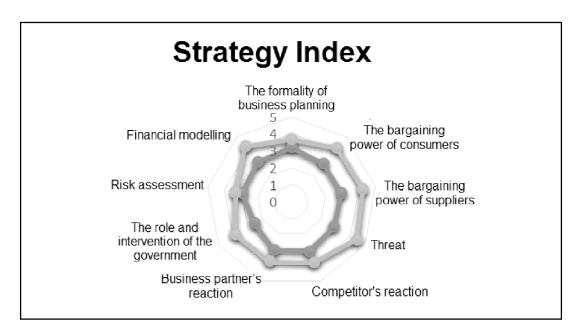*Source:* the data processed by the author

Figure 3: The Comparison of Strategy Index between SMEs in Depok and Solo

In the context of resources owned by SMEs, the discrepancy between SMEs in Depok and Solo is quite large. Table 4 shows that resources in the form of expertise to carry out innovation activities in SMEs in Solo are more available than those in Depok. This also applies equally to resources in raw materials and production equipment. Meanwhile, the resources in the form of capital are quite conducive in Solo that SMEs in Solo can feel more benefit than SMEs in Depok. Human resources in both cities are sufficient considering that both cities have relatively similar growth rate.

Table 4
The Description of Resource Index

No.	Indicator	The Average in Depok	The Average in Solo
1	The preparedness of technological resource	3.18	4.21
2	Commercialization competence	3.19	4.14
3	The availability of expertise in developing innovation	3.00	**4.25**
4	Human resources	3.23	4.45
5	Physical resources (materials and production equipment)	2.86	**4.86**
6	Financial resources	2.60	3.68
7	Government assistance program	2.67	**4.45**
8	Source of capital	3.08	3.85

Source: the data processed by the author

CONCLUSION

The capacity of innovation management of SMEs in Depok and Solo based on the measurements developed by Mazzarol and Reboud (2006) shows distinctive results. The capacity indices of innovation management
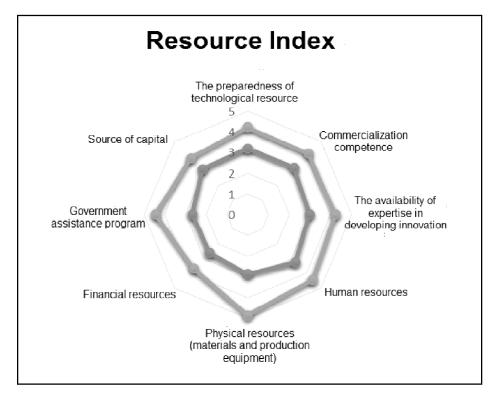
Figure 4: The Comparison of Resource Index between SMEs in Depok and Solo

of SMEs in Depok are generally lower than SMEs in Solo. Almost all indices have lower values than those of SMEs in Solo except those based on external parties such as the Government and Consumers. It implies that the involvement of consumers and the government in the learning activities of management innovation of SMEs in Solo is better than in Depok. The process of innovation management in SMEs in Solo provides better influence on the commercialization of innovation. The capacity to manage the implementation process of innovation is highly important to understand the potential.

REFERENCES

Afuah, Allan (2003), *Innovation Management: Strategies, Implementation and Profits,* Oxford University Press, USA.

Ahmed, Pervaiz K. (2010), *Innovation Management: Context, Strategies, Systems and Processes,* Financial Times, Prentice Hall.

Hamdani, Widjaja Jahja and Wirawan, Christina (2012), *Open Innovation Implementation to Sustain Indonesian SMEs,* In International Conference on Small and Medium Enterprises Development: Innovation and Sustainability in SME Development, ICSMED.

Indarti, N and Langenberg A (2005), *Study of Factors Affecting Business Success among SMEs - Empirical evidence from Indonesia*, Asian Social Science.

Liao, T.S. dan Rice, J. (2010), "Innovation investments, market engagement and financial performance: A study among Australian manufacturing SMEs", *Research Policy*, 39 (1), pp. 117-125 (SSCI).

Kusumastuti, Retno; Sakapurnama, Eko; Firdaus, Nur; Safitri, Nurul; and Nurita, Prima (2016), "Ambidexterity learning process for exploration and exploitation: A model of hybrid ambidextrous university", *Turkish Online Journal of Educational Technology,* INTE.

Kusumastuti, Retno; Sakapurnama, Eko; Nurita, Prima; and Safitri, Nurul (2015), "Developing innovation capability of SME through contextual ambidexterity", *Jurnal Bisnis dan Birokrasi*, 22(1), p. 51.

Mazzarol, T. (2002), *"Innovativeness in small firms: an exploratory study of the perspectives of growth oriented owner-managers", International Journal of Innovation Management, Policy & Practice*.

Mazzarol, T., dan Reboud, S. (2006), "The strategic decision making of entrepreneurs within small high innovator firms", *International Entrepreneurship and Management Journal*.

Mazzarol, T., and Reboud, S. (2009), *The Strategy of Small Firms: Strategic Management and Innovation in the Small Firm*. Cheltenham, UK; Northampton, MA; Edward Elgar.

Nauwelaerts, Ysabel, and Hollaender, Iris (2012), "Innovation management of SMEs in the creative sector in Flanders and the Netherlands*, Journal of Marketing Development and Competitiveness,* Vol.6 (3).