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Government Policies and Firm Size as a Moderating Effect of Innovation on Business Performance

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***Abstract*—Companies operating in this free market era have to be competitive. Companies need to be innovative in creating products and services and they have to be of high quality to withstand competition. Competitiveness is the ability of a company to overcome paradigm changes, market competition, enlarge and maintain profits, expand market share, and increase business scale. The stronger a company maintains its competitiveness, the more its value goes up in the market. This research was conducted on small and medium enterprises (SMEs) in Indonesia. The study's main objective is to examine if government policies and firm size play a role in moderating the effects of innovation on business performance. This research is based on survey data collected from 84 SMEs. Analysis was conducted using structural equation modeling and correlation analysis. The results of the study reveal that government policies and firm size have a moderating effect on innovation toward business performance.**

Keywords: innovation, government policy, firm size, business performance, SMEs

I. INTRODUCTION

A company that is in a competitive business and market environment has to recognize the need for ongoing innovation, so as to provide new products and better services [1,2]. Further, a company can achieve competitive advantage by having resources and abilities that are valuable, unique and difficult to be copied by others. However, the sustainability of competitive advantage depends on the innovative capacity of the company [3-6]. Innovation is not only important for a company's sustainability, but is one of the factors that is considered successful in increasing revenue [7]. When a company's strategy is to innovate, it will produce products that can compete and have a competitive advantage in the free market. Innovation enhances organizational growth, controls future success, and is a business driver for sustaining organizational survival in the global economy [8]. SMEs are a very important driver of innovation, and technological progress [9]. SMEs often have the flexibility to adjust inputs, processes, products, and prices quickly, in response to environmental changes, and this is an important business survival tool [10]. Compared to large companies, SMEs may be more willing to make risky investments, and practice innovative behavior to improve business performance [11,12]. Therefore, SMEs need to evaluate competitive strategies that are carried out, and incorporate innovations into SME activities to achieve long-term success [13,14].

SMEs make important contributions to innovation, and to the development of local and global economies [15,16]. Previous research has studied innovation in large companies in developed markets; however, only a small number of empirical studies have focused on SMEs in Indonesia and emerging markets. Their presence is seen as increasingly important [17]. The two types of innovation that may occur in SMEs, are product innovation and process innovation. Product innovation is the introduction of new or developed goods and services. Significant changes occur in product innovation related to the characteristics or usefulness of goods or services. Process innovation is the adoption of new or better production and shipping methods. Process innovation includes significant changes in engineering, equipment, and / or software.

Innovation as a strategy is needed by companies to improve efficiency. When a company operates at a low cost, it will have competitiveness. High company strength in the free market puts the company at the forefront, and the company grows.

Synergy between various types of innovations in the management of SMEs is important to improve business performance. Empirical studies, have examined the relationship between innovation and business performance. Innovation and business performance have a positive relationship [18]. Product innovation is a significant determinant of business performance [19]. Product innovation, process innovation, and marketing innovation affect a company's ability to benefit in a variety of ways [20]. This means that higher profits depend on the level or type of change that is applied. There is a significant relationship between innovation (product innovation and process innovation) and company business performance, meaning, that using innovative practices will produce competitive advantages and will lead to better business performance [21]. Product innovations and process innovations are carried out in SMEs to improve business performance [20,22,23]. Flexibility in production must develop innovation capabilities in order to gain organizational performance improvement [24]. If production flexibility helps improve

business performance, managers must use this flexibility to produce organizational capabilities based on product innovation, process innovation, and organizational innovation. Technological innovation (product innovation and innovation process) is needed to strengthen the competitiveness of SMEs in the face of increasingly fierce competition [25]. By increasing product and process innovation, higher business performance can be achieved [20,26,27].

Business performance is related to the results achieved in meeting the company's internal and external goals [28]. Business performance can be measured both by the financial indicators and non-financial indicators [29]. The majority of companies prefer to use financial indicators to measure their performance. However, these indicators are not the only measure of business performance. Non-financial indicators are needed to adjust to changes in the company's internal and external environment [30].

Business performance is the result of interactions between actions taken in relation to competitive forces that enable companies to manage internal resources and adapt to external environment, thereby integrating the concepts of efficiency and effectiveness [31]. In this context, business performance is related to overall company achievement which results in a new and / or better efforts made to gain profits and growth [32,33]. Business performance is an indicator of good or bad management decisions. Management can interact with the internal and external environment through information. This information is further elaborated or summarized in the company's financial statements. Business performance can be measured by financial and non-financial instruments. These indicators are the level of sales, rate of return, return on capital, turnover rate, and market share achieved [34]. Business performance is measured by financial indicators that include sales growth, asset growth, and business profit growth. Assessing business performance through business growth consisting of sales growth, growth in company assets and business profit growth [35] Business performance in SMEs is also measured by financial and non-financial measures. Business performance is measured in terms of three aspects, namely profitability, production levels, and market share [24]. In this study, business performance indicators used are profit levels, production levels, and market share. In this study business performance shows the development of a company as measured by the growth in production, marketing, and business profit.

Government policies control the economy by involving technology and consumer stability, which in turn improve business performance [36]. Their role is to improve business performance. This is related to training which has a significant impact on improving business performance [37]. Autonomous governments are proactive in supporting the development of SMEs by providing education, training, and market information, which can improve business performance [38]. These policies collaborate technology between large and small companies to attract customers. They in turn, can increase sales and product innovation [39]. Government's role is to improve the innovative behavior of small businesses, especially in the form of providing assistance such as training, technology, market information and funds [36]. Furthermore, research to explain the causal relationship between innovation and business performance, and develop research models that involve government policies, has a moderating effect on business performance in SMEs in Indonesia. The government policies in this study are moderated government policies that are measured by indicators of capital access, information technology access, training, and market access.

The firm size determines the level of sales. The larger the size of the company, the greater is the income earned. The success of determining the right innovation strategy has an impact on the firms' business performance.

Several research results prove the positive effect of firm size on innovation activities [40]. The size of the company affects competitiveness of the companies, and the result can affect business performance [41]. One of the problems involved is, not being able to innovate. Bureaucracy does not support an environment for creativity, or a structure that is less flexible than small businesses [42]. This study will investigate whether firm size can strengthen the effect of innovation on business performance.

The firm size in general is a manifestation of the number of assets owned by the company. Firm size cannot only be seen from the financial side, but it can also be seen from a growth rate perspective, i.e. in terms of employees, wealth, and sales. Innovation activities that produce superior products require large funds.

The difference between this research and previous studies, is that, this study uses government policy and firm size as a moderating factor between innovation for improved business performance.

II. METHODS

This study is conducted on handmade batik SMEs in Indonesia. Batik is an illustrated cloth, made specifically by writing or applying paraffin to the cloth, and processed in a certain way that is unique to Indonesia. It is a Masterpiece of the Oral and Intangible Heritage of Humanity. Subjects include SME's owners or managers. Purposive sampling is used as the sampling technique, with consideration to the number of batik handmade SMEs that are scattered in Indonesia and cannot be determined with certainty [43]. A total of 84 SMEs were selected. The selection of samples is chosen under the following criteria: 1) SMEs that produce batik cloth, 2) SMEs that have been operating for a minimum of 2 years. Data were collected using questionnaires and interviews. Structural Equation Model (SEM) is used as a data analysis technique, a system of equations that shows the relationship between latent variables (inner model) and the relationship of indicators with their variables (outer models).

III. RESULTS AND DISCUSSION

The results of outer model testing show that all items have an outer loading of more than 0.50, so that all questions can be used. In addition, the validity of each item is also checked using the results from cross-loading calculations. Item validation is high or fulfilling, if the cross-loading coefficient is high in construct, and low in constructs. The innovation

construct model is of second order. Innovation has latent variables below it in levels as a variable dimension, namely: product innovation and process innovation. The construct of government policy, firm size and business performance is first order, this construct is immediately explained by the item. The results of cross-loading explain that all items used have high validation (> 0.50), as an explanation of each construct. The cross-loading coefficient for each item, in other constructs is lower than the loading factor in the construct. Measurements that have high reliability, produce reliable data. A construct is said to be reliable, if the Cronbach's alpha coefficient value is greater than 0.70, but the value of 0.60 is still acceptable for exploratory research. Reliability measurement can be assessed from the composite reliability coefficient, included in either category, if this coefficient reaches 0.70 or more. Two other ways of assessing reliability is by extracting the coefficient of average variance (AVE) and communality that are included in both categories if this coefficient reaches 0.50 or more. The AVE coefficient will have the exact same value as communality. Table 1 shows the reliability test results, that all constructs have a Cronbach's alpha coefficient of more than 0.60, a composite reliability coefficient of more than 0.70, and a AVE coefficient and communality of more than 0.50. Thus, all measurement models used in this study already have high reliability, so the results obtained from respondents on the perception of innovation, government policy, firm size and business performance can be carried out to the next stage for data analysis and discussion.

TABLE I. CONVERGENT VALIDITY

Construct	Coefficient Alpha Cronbach	Composite Reliability	AVE	Communality
Innovation:				
-Product Innovation	0.686	0.805	0.514	0.805
-Process Innovation	0.820	0.880	0.651	0.883
Government Policies	0.843	0.902	0.784	0.911
Firm Size	0.882	0.928	0.811	0.928
Business Performance	0.896	0.935	0.828	0.935

Convergent validity is a proven validity. When scores obtained by two instruments measuring the same concept, or measure concepts with different methods having a high correlation. In such a case, it is considered to have high validity. When the measuring instrument shows high intercorrelation between the theoretical support of measuring instruments when applied in practice, it shows that convergent validity is high. Discriminant validity refers to the ability to measure the relevant disclosed information that is different from others that measure different or unrelated theoretical constructs.

Discriminant Validity is to see and compare between discriminant validity and the square root of average extracted (AVE). If the value of the square root AVE of each construct is greater than the correlation value between the construct and other constructs in the model, then it is said to have good discriminant validity for the expected AVE value is> 0.5.

TABLE II. DISCRIMINANT VALIDITY

Construct	AVE	Product Innovation	Process Innovation	Government Policies	Firm Size	Business Performance
Innovation:						
-Product Innovation	0.514	0.717				
-Process Innovation	0.651	0.441	0.807			
Government Policies	0.784	0.349	0.573	0.896		
Firm Size	0.811	0.292	0.442	0.732	0.901	
Business Performance	0.828	0.422	0.562	0.634	0.634	0.910

A measurement model fulfills discriminant validity, if the roots of AVE of a construct are greater than the correlation coefficient of other constructs. Table 2, presents the calculation of the AVE roots of a construct and the correlation values between constructs. The test results show that the root value AVE is a variable higher than the correlation value between variables. Thus, it can be concluded that the measurement model of this study has fulfilled discriminant validity. In various evaluation angles carried out on the construct validity and reliability, it can be stated that all question items can be used as a measure of variables.

Multiple correlation is a number that shows the direction and strength of the relationship between two independent variables together, or more with one dependent variable. The direction and strength of the relationship are indicated by the correlation coefficient. Table 3 shows the results from the correlation coefficient on the inner model, the relationship between exogenous variables of innovation, government policy and firm size as a moderating variable, business performance as an endogenous variable. The results of multiple correlation analysis and the magnitude of the correlation coefficient are shown in Table 3.

TABLE III. CORRELATION COEFFICIENT

Variables	Business Performance
Innovation	0.205*
Government Policies	0.475*
Firm Size	0.380*
Innovation x Government Policies	0.129
Innovation x Firm Size	0.089

Figure 1 shows the relationship between innovation variables, government policy, firm size, and business performance.

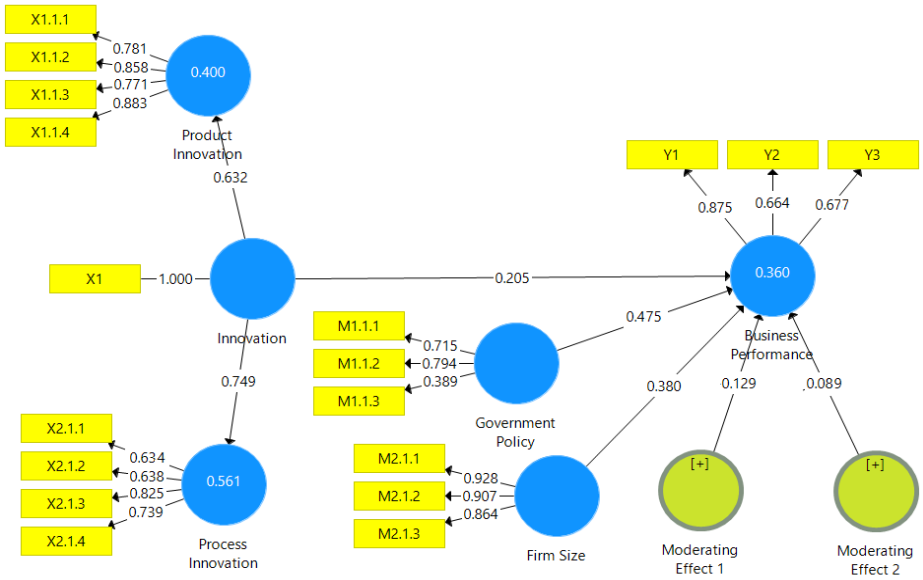

Fig. 1. Multiple correlation.

Moderating effect 1 is moderating the relationship between innovation and business performance (innovation x government policy). Moderating effect 2 is moderating the relationship between innovation and business performance (innovation x firm size).

Innovation has a significant effect on business performance, with a path coefficient of 0.490. High innovation in the company will improve business performance. Government policies have a significant effect on business performance, with a path coefficient of 0.387. Government policies have an impact on improving business performance. The interaction of innovation and government policy on business performance, has a coefficient in a positive direction, with a path coefficient of 0.214. This shows that government policies strengthen the relationship between innovation and business performance. The results, as seen in Table 3, show that the innovations carried out by SMEs produce high value, and are carried out continuously in order to become highly competitive. Innovation is the most important element for success in a company, to create new value for customers, and for the company to become competitive. Products of SMEs who experience boredom, innovation is the right solution. Therefore, consumers have a lot of choice when selecting products that are practical and necessary. Consumers will be willing to pay a high price, as long as they are satisfied that the product is of good quality. The higher the sales, the more is the profit of SMEs.

Innovation is a corporate mechanism, to create new thoughts, new ideas, by offering innovative products, and improving services that can satisfy customers. The concept of innovation is twofold, namely innovation and the capacity to innovate. Innovation is the mindset about openness, to look, for new ideas. The capacity to innovate is the company's ability to use or apply ideas, processes / new products, successfully. Innovation made by the company. It is basically to meet the market demand, so that the company can have a competitive advantage. Table 3 shows that innovation positively and significantly influences business performance. Product innovation and process innovation play a role in strengthening the relationship between innovation and business performance. Business performance basically depends on the harmony in terms of product innovation and process innovation. Product innovation and process innovation related to work activities can directly influence the product or process. In general, with SMEs production of handmade batik, measurement of innovation can be reviewed in product innovation and process innovation. Product innovation is a process of bringing new technology into a product, such that the product has added value

Consumers are increasingly selective in buying an item, taking into consideration the quality, style, color and price of the item. With rapid innovation, more and better quality goods can be offered to consumers. And with better marketing, goods can be more easily sold. Since the consumers' tastes and needs keep changing, product life cycles get shorter. In addition, domestic and foreign competition is steadily increasing. Therefore, product innovation is necessary to maintain the company's survival. Companies must pay attention to the needs of consumers. Even if the quality of the product is good, if it is not in accordance with the tastes of consumers, they will not be desirable. Consequently, consumers will switch to other products, causing sales to fall. Competitive advantage of a product, is one of the determining factors to the success of new products. This will increase sales. The superiority of new products is very important in a highly competitive global market environment [44]. Product innovation can produce new or unique products. A unique product is an important attribute for the superiority of the product. This can be achieved through innovation and technology [45]. For the success of the company's business, it should quickly react to the new market conditions and customer needs. In addition, companies can continuously look for creative solutions, as well as continuous improvement in product design.

IV. CONCLUSION

The implementation of new ideas brings about innovation for SMEs. Innovation can increase sales, because it creates new value for customers, which becomes a competitive advantage. Innovation is an important function in management that is related to the business performance of an SME. Firm size does not influence SMEs to innovate. Innovations can be on all sizes (small, medium and large businesses). They can be for any product, for example, handmade batik cloth, fashion accessories such as bags, shoes, tissue boxes etc. Increasing the efficiency of the production process can increase profits. Process innovation, on the other hand, is more focused on services that are attractive to buyers or consumers. Innovation has a very important role in managing a business, to improve business performance. The government, which has full right to manage the country, has a role in increasing SMEs to compete at regional and international levels. The developing SMEs will provide great employment opportunities. The purchasing power of the community is increasing. Hence, the right government policy for business development will have a real impact on the business performance of handmade batik SMEs. Future researchers focusing on SMEs, are recommended to include external factors that affect the business performance of SMEs, as variables. Increased knowledge and competence of human resources t produce competitive products. The giving of gifts to employees is helpful in encouraging them to come up with innovative ideas, this can foster better organizational behavior. Government policies and firm size should be favorable towards SMEs of handmade batik industries. Government should facilitate financial and non-financial access, strengthening the effectiveness between innovation and business performance

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