# DEVELOPMENT OF BUSINESS MODEL 4.0 TO IMPROVE SMALL COMPETITIVENESS IN DEVELOPING COUNTRIES: A CASE STUDY IN INDONESIA

#### Agus David Ramdansyah<sup>1</sup> and Aan Khurosani<sup>2</sup>

<sup>1,2</sup>Economics and Business Faculty, University of Sultan Ageng Tirtayasa, Banten, Indonesia

### ABSTRACT

Until now, Micro, Small and Medium Enterprises (SMEs) are considered to still not have high competitiveness, even though they have the potential to increase income and absorption labor. They still face obstacles both internally and externally. Several factors that are expected to improve MSME competitiveness have been identified in several studies. This study aims to confirm the design of the model and its indicators that can affect the competitiveness of SMEs through primary data which are then processed quantitatively. Based on data from 522 SMEs in 8 regencies/cities in Banten Province, Indonesia. Six main variables that make up SME competitiveness are identified, namely the availability and condition of the business environment, business capability, policy and infrastructure, research and technology, financial support and partnerships, and variables performance.

**KEYWORDS:** SMEs, competitiveness, 4.0 business model.

## **INTRODUCTION**

Small and Medium Enterprises (SMEs) have succeeded in increasing income and employment in Indonesia. The contribution of SMEs in GDP in 2013 reached 57.56% of the total national GDP with a total of 57.9 million units or 99% of the total existing business units. SMEs are also able to increase 97% of the total workforce in Indonesia, (Ministry of Cooperatives and SMEs, 2014). However, this condition has not made SMEs in Indonesia have high competitiveness. They still experience many obstacles both internally and externally, so that the economic growth and income of the people do not yet look very competitive. There are three factors that can affect the competitiveness of SMEs and can be used to measure the competitiveness of SMEs; The scale of business, productivity and the level of application of technology.

Other factors, such as education level, skills, entrepreneurship, financing accessibility, ease of licensing and transaction costs, etc., can also be used to describe the SMEs competitiveness level. (Adebayo, et.al, 2019)states that although the size of SMEs competitiveness is very diverse, identification of SMEs competitiveness needs to include three characteristics, namely potential, process, and performance. Many studies have been conducted regarding SMEs competitiveness with varied results. One of the

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most important results is from (Manet. al., 2002) who analyze competitiveness level of SMEs by combining the concepts of competitiveness and entrepreneurial competence. The results show that; first, competitiveness is a continuous process, and not a static process. Second, competitiveness models in Companies context or SMEs need to consider three dimensions of competitiveness as conceptualized, namely potential, process, and performance. (Buckley et.al., 1988) state that Potential dimension covers competitiveness scope and organizational ability. Meanwhile the "Process" dimension reflects managing work ability; while "Performance" is result of various factors that shape it such as (1) character, behavior, skills and knowledge possessed by entrepreneurs; (2) market and business environment strategic; and others. Third, high competitiveness level of a SMEs can be maintained through fulfillment of four capabilities types; (1) company's ability to increase market share, profits and value added growth manage sustainability; (2)company's ability to access and various resources and capabilities(controllability); (3) company's strategic ability to assess its competitiveness level compared to other companies (relativity); and (4) company's ability to continue in create competitive advantage (dynamism).Fourth, SMEs competitiveness model needs to consider the influence of internal aspects, external environment and business owner perspective or behavior.

Fifth, based on the three approaches (Manet. al., 2002) develop a conceptual model to relate characteristics of manager or SMEs owner and long-term performance of company. The relationship is hypothesized into three principal tasks of an entrepreneur (a) forming scope of competitiveness; (b) creating organizational capabilities; and (c) determining goals and strategies for achieving them.

(Ivanová and Čepel, 2018) devised a framework regarding a company's competitiveness and its determinants. Where company competitiveness is reflected in product competitiveness and can be characterized by internal factors and external factors. These internal factors include (1) expertise or education level of workers, (2) entrepreneurial expertise, (3) availability or access to capital, (4) Organizational and management systems (5) availability or technology mastery, (6) availability or mastery of information, and (7) availability or control / access to other inputs such as energy, raw materials, and others.

Measurement of competitiveness can also be seen from several perspectives. According to (Gál, 2010), it can be measured in terms of performance. However, in terms of a comprehensive view, it can be measured by its influence until final results have been achieved. Based on (Buckely et. al. 1998), competitiveness is considered a continuous process, not only the performance produced, but also the process of doing so.

To improve competitiveness, SMEs must have the ability to compete. To achieve excellent performance, SMEs must consider several factors that affect performance. Some studies called

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competitive ability are factors that affect the performance of SMEs or success or can be referred to as Key Success Factors (KSFs) or Critical Success Factors (CSFs). KSFs are defined as a very important factor in measuring the excellent performance of the company (Chen et. al, 2019).

(Eze et. al., 2018) explains that success factors are important thing in influencing business. (Chawla et. al, 2007)define CSFs as events, situations, conditions, or activities that require special attention because the significance of CSFs can help in creation, decision making, perception, planning, and organizing of SMEs. Some other parties call competitiveness a competitive factor.

(Li, 2011) states that competitive factors become the first level, criteria as second and attributes as the third level. In additional, there are seven competitive factors; management competency, organizational competency, technological capability, financial competency, market share, social responsibility, and regional competitiveness.

High competitiveness is also very necessary in conditions of competing with global markets such as implementation of the Asean Economic Community. This condition will provide challenges but also can get opportunities, so that SMEs are required to increase their competitiveness. (Ayuso and Báez, 2017) states that the main key is SMEs themselves, especially SMEs owners, with the support of their workers.

SMEs owner with entrepreneurial and innovation spirit they have, must be able to become a driving force to improve competitiveness of company. The role of SMEs owners is very important in enhancing competitiveness. (Hunter and Lean, 2014) states that entrepreneurial leadership character is needed by SMEs owner to lead his business. Characters that are stated to have an important role are ambitious, performance oriented, and visionary.

Previous study conducted by (Lantu et al, 2015) has resulted in a note that a deeper study of indicators of competitiveness of SMEs is needed, especially for factors that affect competitiveness so that they can provide a more comprehensive picture of the competitiveness of SMEs. The review needs to cover the context of SMEs competitiveness in certain business sectors and locations. It should be done to provide an overview of development level mapping of SMEs so that they can then be used as a basis for formulating policies to increase the role of SMEs in domestic, regional and international markets.

After the competitiveness of the model is carried out, then it is necessary to continue with quantitative confirmation stage which will have a purpose of this study. This is then carried out through a primary data approach which aims to confirm correctness of qualitative model. Therefore it is necessary to take primary data to measure each variable and indicator contained in the model using a questionnaire. It is

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also functioning to confirm the model. This study is a continuation of initial assessment phase on the model of SMEs competitiveness qualitatively.

The results of qualitative study in the previous stage then need to be quantified in order to obtain a more valid and reliable model of SMEs competitiveness. (Nagy, 2016) states that the power of SMEs will be very different from competitiveness concept of large companies that currently have many measuring instruments. Therefore measuring SMEs competitiveness is still very much needed. Model produced from this study will then be used to develop a SMEs power measurement tool in the next study. This measurement tool aims to look at aspects that need to be improved in developing SMEs in an area.

## **RESEARCH METHODOLOGY**

This study goes through three stages including initial study, survey and data processing stage to test validity of the model quantitatively. Initial study is the stage where questionnaire and reference survey are produced. The output is generated through several processes carried out simultaneously; questionnaires design, previous research studies, and pilot tests. The initial study produced a survey questionnaire and guidance document that was used as a medium in collecting primary data by carrying out surveys in Banten, one of Indonesia Province. Survey was conducted for Small and Medium Enterprises (SMEs) as respondents to answer questions that had been compiled in questionnaire. Survey results will then be used as data to test models that have been built in previous studies. This aims to obtain a statistically valid model. Testing model uses Partial Least Square (PLS) method. It is conducted in 236 SMEs in 8 regencies/cities in Banten Province, Indonesia.

SMEs competitiveness questionnaire consists of three main parts; respondent's profile, business profile, and questions to represent each variable in the study of the SMEs competitiveness. Overall, this questionnaire consists of 96 closed questions as shown in table1.

Variable	Sub-Variable	Indicator	Number of Questions
Input;	1. Resources Availability	a. Raw Materials,	12
Resources	(RA)	Machines and	
Availability		Equipment (RME)	
and Business		b. Human Resources (HR)	
Environment	2. Market Conditions	a. Business Competition	7
Conditions	(MC)	(BC)	
(RABC)		b. Market Structure (MS)	

#### **Table 1. Questionnaire Composition**

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Process; Business Capability (BC)	3. Technical/Production Ability (TPA)	a. Worker Ability (WA) b. Production Capability (PC)	10
	4. Managerial Ability (MA)	<ul> <li>a. Business Systems and Policies (BSP)</li> <li>b. Technology Utilization (TU)</li> <li>c. Research and Development (RD)</li> </ul>	8 5
	5. Good Governance and Service Capabilities (GSC)	a. Legal and Administration (LA) b. Service Capability (SC)	7
	6. Entrepreneurial Ability (EA)	a. Innovation (INV) b. Opportunity Identification (OI)	7
Business Performance	7. Internal Performance (IP)	a. Quality (Qty) b. Production (Prod)	9
(BP)	8. External Performance (EP)	a. Market Performance (MP) b. Social Performance (SP)	6
	9. Sustainability and Business Growth (SBG)	a. Financial Performance (FP) b. Business Growth (BG)	7
Moderating	0. External Support (ES)	<ul> <li>a. Legal Policy (LP)</li> <li>b. Economic Policy (EP)</li> <li>c. Socio-Cultural Policy (SCP)</li> <li>d. Infrastructure (Inf)</li> <li>e. Capital Access (CA)</li> <li>f. Business Partner (BPt)</li> </ul>	18

The survey results obtained 240 respondents from 8 regencies/cities in Banten Province, Indonesia. However, not all of them can be used as data in the data processing because there are 9.0 percent invalid data, so there are 236 Respondents data that can be used for the next stage. This invalid data is because the questionnaire collected was not filled in completely.

Respondents who participated in this survey can be seen from several parameters so that it is expected that respondents' profiles will vary and can describe the condition of SMEs businesses in Indonesia. The number of respondents to SMEs is still dominated by men as much as 70%. Most respondents have high school level education. Some business units have not been officially registered as business entities

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(57%). This shows that the majority of respondents are informal businesses. Almost all respondents run their businesses in groups. The business sector that is the most involved by SMEs respondents who are respondents is the processing industry (37%) then trade, hotels and restaurants and services. The scale of the business of SMEs is dominated by small scale with almost 50 percent. The criteria used in this determination are based on the value of assets and turnover generated based on the Law of the Republic of Indonesia Number 20 of 2008 on Micro, Small and Medium Business

Partial Least Square (PLS) is a multivariate statistical technique that can handle many response variables and explanatory variables simultaneously. PLS was developed as an alternative to structural equation modeling (SEM). (Vincenzo et al, 2010) stated that there are several things that distinguish analysis using PLS with SEM, namely:

- 1. Data does not have to be normally multivariate.
- 2. Can be used with a small sample size (minimum of 30 data).
- 3. Besides can be used to confirm the theory, it can also be used to explain whether or not there is a relationship between latent variables.
- 4. It can analyze both constructs formed with reflective and formative indicators
- 5. It is able to estimate large and complex model with hundreds of latent variables and thousands of indicators.

PLS model evaluation is divided into two stages (Vincenzo et al, 2010) as follows:

- 1. Measurement model Evaluation (outer model), that is evaluating a model that connects indicators with latent variables, which include:
- Convergent Validity; loading factor value of latent variables with their indicators. Expected value> 0.7.
- Discriminant Validity; a cross loading factor value that is useful to find out whether the construct has an adequate discriminant by comparing loading value to destination construct where it must be larger than loading value with another construct.
- Composite Reliability; > 0.8 is high reliability.
- Average Variance Extracted (AVE) is expected>0.5.
- Cronbach Alpha as a reliability test. Rated value> 0. 6 for all constructs.
- 2. Structural model evaluation (inner model), namely evaluating model that connects between latent variables which include:
- R Square is the coefficient of determination in endogenous constructs. The R square value is 0.67-

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1.00 (strong), 0.20 - 0.33 (moderate) and 0 - 0.19 (weak)

- Estimate for Path Coefficients is the value of the path coefficient or the magnitude of the relationship / influence of the latent construct done with the Bootstrapping procedure.

## **RESULTS AND DISCUSSION**

## **Model Validation and Specifications**

This stage is related to formation the initial model of structural equations, before estimation is done using PLS. This initial model is formulated based on a theory or previous research. Model above is a conceptual diagram used in the data processing process with variable descriptions as follows:

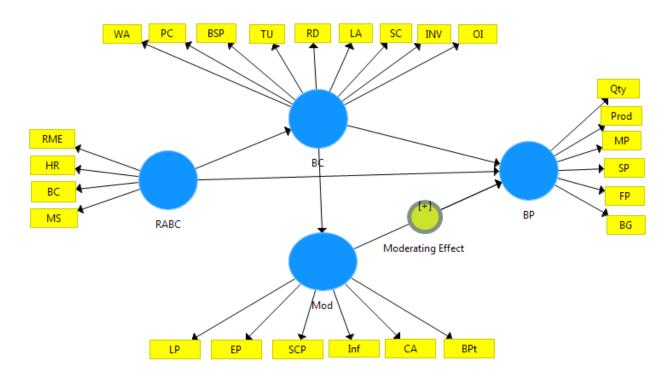


Figure 1. Conceptual Partial Least Square Model Diagram

Pathway model consists of 3 (three) sub-structures. This moderation relationship is tested by Moderated Regression Analysis (MRA) which is a special application of multiple linear regression where regression equation contains an element of interaction (multiplying two or more independent variables).

That estimation model process is carried out using the help of the Smart PLS program. The process can be described as follows:

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## a. Outer Model

Measurement model uses Second Order Confirmatory Factor Analysis (2nd-Order CFA). Manifest variables inside the model of SMEs competitiveness is as follows:

- Resources Availability and Business Environment Conditions (RABC) variables are measured by 2 latent variables, namely Resources Availability (RA) and Market Conditions (MC). RA is measured by two observed variables, namely Raw Materials, Machines and Equipment (RME) and Human Resources (HR). While MCis measured by two observed variables, namely Business Competition (BC) and Market Structure (MS).
- Business Capability (BC) variable is measured by 4 latent variables, namely Technical/Production Ability (TPA), Managerial Ability (MA), Good Governance and Service Capabilities (GSC) and Entrepreneurial Ability (EA). Latent KTP variable was measured by 2 observed variables, namely Worker Ability (WA) and Production Capability (PC). Managerial Ability (MA) is measured by three variable, Business Systems and Policies (BSP), Technology Utilization (TU), Research and Development (RD). Good Governance and Service Capabilities (GSC) variable is measured by 2 observed variables, namely Legal and Administration (LA) Service Capability (SC). While the latent Entrepreneurial Ability (EA) variable is measured by the two observed variables, Innovation (INV) and Opportunity Identification (OI).
- Business Performance (BP)Variable is measured by 3 latent variables, namely Internal Performance (IP), External Performance (EP) and Sustainability and Business Growth (SBG). IP was measured by two observed variables, namely Quality (Qty) and Production (Prod). EP is measured by the two observed variables, namely Market Performance (MP) and Social Performance (SP). SBG is measured by 3 observed variable Financial Performance (FIN) and Business Growth (BG)
- Moderating variable is measured by one observed variables, namely External Support (ES). This ES is measured by 6 observed variables, namely Legal Policy (LP) Economic Policy (EP), Socio-Cultural Policy (SCP), Infrastructure (INF), Capital Access (CA) and Business Partner (BPt)

#### b. Inner Model

RABC variable influences BC, then BC variable influences BP via moderating variable ES variables.

## **Measurement Model Evaluation**

Reliability test is a tool to measure a questionnaire which is an indicator of a variable or construct. A measuring instrument or instrument that contains a questionnaire can provide stable or constant results, if the measuring instrument is reliable or reliable. Therefore it is necessary to do a reliability test. Questions asked are reliable or reliable when answering questions from opponents that are trusted or stable from time to time. The reliability of the research instruments in this study supports the use of

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composite reliability and Cronbach's Alpha coefficient. If alpha> 0.90 then reliability is perfect. If alpha is between 0.70 - 0.90 then reliability is high. If alpha is 0.50 - 0.70, the reliability is moderate. If alpha <0.50, reliability is low. If alpha is low, chances are one or more items are not reliable. (Nunnally, 1978). This shows the consistency and stability of the instruments used are high. In other words, all the constructs or variables of this research have become fit measuring instruments, and all questions used to measure each construct have good reliability.

	Composite Reliability	Cronbach`s	AVE
		Alpha	
BC	0.892	0.862	0.784
BP	0.837	0.762	0.671
Mod	0.888	0.849	0.671
RABC	0.735	0.715	0.654

## Table 1. Composite Reliability Testing, Cronbach's Alpha and AVE Results

Source: PLS Output, 2019

Convergent validity means that a set of indicators represents one latent variable and which underlies the latent variable. This representation can be demonstrated through unidimensionality which can be expressed using the average value of the extracted variant (Average Variance Extracted / AVE). The AVE value is at least 0.5. This value represents adequate convergent validity which means that a latent variable is able to explain more than half the variants of the indicators in the average.

## **Cross-loadings**

Used for checking discriminant validity in addition to the criteria above. If an indicator has a higher correlation with other latent variables than with its own latent variable then the suitability of the model must be reconsidered. Discriminant validity of reflective indicators can be seen in the cross loadings between indicators and their constructs.

Tuble 2. Cross Louding Testing Result						
Constr	BC	BP	Mo	R		
BC	0.43	0.57	0.4	0.6		
BG	0.52	0.76	0.6	0.0		
BPt	0.62	0.53	0.7	0.4		
BSP	0.73	0.59	0.6	0.3		
CA	0.65	0.64	0.7	0.5		
EP	0.61	0.50	0.8	0.3		
FP	0.56	0.88	0.5	0.2		

 Table 2. Cross Loading Testing Result

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HR	0.51	0.29	0.3	0.7
INV	0.79	0.43	0.5	0.7
Inf	0.63	0.59	0.8	0.4
LA	0.62	0.30	0.4	0.5
LP	0.40	0.34	0.6	0.3
MP	0.55	0.62	0.4	0.5
MS	0.44	0.56	0.4	0.6
OI	0.71	0.61	0.7	0.3
PC	0.60	0.54	0.4	0.5
Prod	0.48	0.69	0.5	0.5
Qty	0.53	0.73	0.4	0.3
RD	0.74	0.35	0.4	0.6
RME	0.63	0.40	0.5	0.8
SC	0.72	0.38	0.5	0.6
SCP	0.55	0.45	0.7	0.4
SP	0.41	0.63	0.4	0.3
TU	0.79	0.62	0.5	0.3
WA	0.65	0.56	0.4	0.3

Based on table 2, cross loadings table it can be seen that the correlation of each construct with its indicator is higher than the correlation of the indicator with other constructs. This shows that latent constructs predict indicators in their blocks better than other indicators

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV)	P Value	R Square
BC->BP	0.759	0.782	0.082	9.206	0.000	
BC-> Mod	0.779	0.787	0.036	21.734	0.000	0.607
Mod-> BP	0.471	0.489	0.103	4.580	0.000	
RABC->BC	0.692	0.692	0.051	13.588	0.054	0.478
RABC->BP	0.417	0.440	0.074	5.618	0.000	0.536
RABC->Mod	0.539	0.545	0.051	10.634	0.000	

 Table 3. Path Coefficients

Based on table 3 it can be seen that there are several significant effects between exogenous variables on endogenous variables. R-square value illustrates the percentage that can be explained by independent variables on dependent variable. While the rest is influenced by other factors. There are several references of R square value that can be accepted in a study, this will depends on research field. Social science research will be more difficult to obtain high R-square values because social phenomena are

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complex and multi-dimensional, so it will be very difficult to be able to see all the variations that exist. R square value obtained in this research is 0.536 for three variables with Business Performance variable as dependent variable, so that it can be stated that this study is able to describe the real conditions in the moderate to high range. This is a good thing considering that this is basic research.

## **Model Evaluation**

SMEs competitiveness model validation in the previous stage shows the factors that influence SMEs competitiveness consist of (i) variables that describe potential dimensions which are resources availability and environmental conditions; (ii) variables that describe dimension process, which isbusiness ability; (iv) variables that describe dimensions performance, which is business performance; and (v) variables that describe moderating factors that facilitate the connection between factors in potential dimensions, process and performance. Explanation of each variable is as follows:

## Availability and Business Environment Condition Variable

Availability and business environment condition variable describe the situation or main capital owned by a business entity in starting its business. This have already existed when business began to run. Several sub-variables of both variables are:

### a. Resources availability

Resources availability is illustrated through availability of raw material, human resources, as well as machinery and equipment as the main capital of business. Information wants to get from human resources availability (HR) is about how strong or large the human resources availability who are ready to work in locations around business it operates. The greater availability of human resources ready to work the greater the opportunity for a business to get a superior workforce for its business.

On the other hand, indicators of raw materials availability, machinery and equipment try to capture information on how easy business access is to get the raw materials needed. The ease of access to raw materials around business locations will certainly make it easier for businesses to carry out their production activities. This certainly can facilitate businesses to be more advanced.

## **b.** Market Condition

This is measured from two indicators, market situation and business competition. Both indicators try to see how market condition in location around business environment. Indicators of market situation try to describe size and ability of market in the location around business. Market size wants to show how much potential population can become a market for business, while market ability tries to show purchasing power of market in the location. Meanwhile, market condition is described through business competition indicators that include information about how much intensity of business competition in

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location around business is operating.

#### **Business Capability Variable**

This variable is initially called a process variable. However, to avoid misperception, the name of process variable is then replaced as a business capability variable. In this context they want to describe the extent to which business being run is able to manage existing business processes from technical and managerial side. This variable is measured in four sub variables; technical or production capability, managerial ability, governance and service capability and entrepreneurial ability. These four variables are considered very important in shaping the ability of a business to manage its business as a whole.

### a. Technical / production Capability

It aims to capture information about business capabilities in managing business operation processes day by day. In this case, it is measured in two indicators; worker ability and production ability. Indicators of worker ability illustrate how the capabilities of HR possessed by businesses in supporting production, whether competencies of HR can support the acceleration of production process or vice versa. On the other hand, production capabilities want to describe the extent to which businesses can meet their production targets every day.

### b. Managerial Ability

It describes the extent to which businesses implement a good management system in managing their business. To measure this sub-variable, system and business policies are formed as indicators.

### c. Governance and Service Capability

This sub variables are applied to see the extent of administration and services system is run in business process. They consist of two indicators; legal and administrative, where it intends to see laws application regularity. While service ability measures how business services to consumers.

#### d. Entrepreneurial Ability.

Entrepreneurial ability is closely related to the extent to which business managers can see opportunities and develop their business to be more advanced through innovation and utilization of existing opportunities. Two indicators are formed; innovation and opportunity / market identification to measure entrepreneurial ability.

## **Business Performance Variable**

This variable tries to describe the extent to which businesses can achieve development and progress both financially and non-financially. Three sub-variables are applied to measure this variable; internal performance, external performance and sustainability and business growth.

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- a. Internal performance is applied to measure labor productivity and the products quality.
- b. External performance tries to measure how market performance of the business which is product consumption level, and social performance of the business, namely the extent to which the business has a positive impact on surrounding environment
- c. Sustainability and business growth tries to describe how business achievement in financially and expansion or business development.

#### **Policy and Infrastructure Variables**

Policy and infrastructure variables want to illustrate how the implementation of policies and infrastructure in locations around SMEs operate can support or hinder businesses to operate. In this case, there are several measurement indicators; application of legal policies, application of economic policies, application of socio-cultural policies, and completeness and availability of business supporting infrastructure.

#### **Research and Technology**

Research and technology variables describe the level of utilization of technology and research and development in a business. The use of technology tries to see the extent to which a business utilizes technology for production, management and marketing purposes. Research and development describes how a business utilizes the results of research, and innovates through research and development activities in its business even though the form is simple.

### **External Support**

This variable aims to measure two main things, namely capital and business partners. Capital access tries to see how easily businesses can access existing capital assistance facilities. Likewise the case with business partners, it describes how business involvement in partnership programs both proclaimed by the government and private sector.

## CONCLUSION

This study aims to confirm the design of indicator models that can affect the competitiveness of SMEs in the models in previous studies. The difference is, at this stage of study the design confirmation is done through primary data collection which is then processed quantitatively to give a valid model by statistical test. From the results of the study, it was found that there was a need to adjust the design of the model that had been built in the previous study.

Based on the primary questionnaire data from 19 provinces, it was seen that the model that had been designed in the previous study still needed quantitative validation and was statistically confirmed so that modifications to the model were needed. This can occur because the assumptions made through

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qualitative data in previous studies may have differences with the assumption that quantitative data is analyzed through the Partial Least Square statistical tool. The differences between the qualitative and quantitative models are not too far away so that basically the main basic factors that shape the competitiveness of SMEs are still acceptable. Finally, there are six main variables that shape the competitiveness of SMEs in a province, namely the availability and conditions of the business environment, business capacity, policies and infrastructure, research and technology, financial support and partnerships, and performance variables.

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