

# 6. Is there a relationship pattern between small medium enterprise strategies with performance in technology business incubator.pdf

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## Is there a relationship pattern between small medium enterprise strategies with performance in technology business incubator?

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**Abstract:** This research aims to test and analyse the relationship pattern between dynamic environmental-resource-capability-SMEs development strategy with SME's technology business incubator (TBI) performance in a partnership program that follows the pattern of CSR at company ports in Indonesia. This is a survey research, using primary and secondary data. Questionnaires were given privately to executives (general manager and manager) implementing CSR. Interviews were used to complete the data analysis and were carried to some general managers and managers. Partial least square (PLS) was used for data analysis technique. Results showed that there is a positive correlation between the relationship pattern of dynamic environmental-resource-capability-SME development strategy-SME *technology business incubator (TBI) performance* of port company partners that follow TBI CSR pattern partnership program.

**Keywords:** environment; resources; capability; technology business incubators performance; small medium enterprise strategies.

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**Biographical notes:** Muafi is currently Lecturer and Researcher at the Universitas Islam Indonesia Yogyakarta majoring in Management. He completed his doctoral program at Universitas Brawijaya in 2008 and his Master of Management Science at Universitas Airlangga Indonesia in 1997. His area of expertise is in human resources management with interest in strategic human resource management, organisational behaviour and change management. The subjects that he has taught include strategic human resource management, strategic management and organisational behaviour. He has secured a research grant from the Kemenristek Dikti Indonesia and Kemenkeu Indonesia.

## **1 Introduction**

Business incubator (BI) has a very significant role in supporting the growth of entrepreneurs, helping the early stage for companies to grow and develop properly (Al-Mubarak et al., 2013; Al-Mubarak and Busler, 2013; Muafi et al., 2012). BI provides an important contribution to international economy, and not only beneficial for the improvement of economy but also for economic development. In fact, more than 7,000 incubation programs in the world can support the development of new business growth (Al-Mubarak et al., 2013; Al-Mubarak and Busler, 2013). The National Business Incubation Association (1997) and Al-Mubarak and Busler (2011a) explained that the BI program accelerates the success of economic development from entrepreneurial companies through asset deployment of resources and services. Technology incubator is also another important aspect that exist (Ghasemizad, 2009; Ghasemizad et al., 2011; Dipta, 2003). The government gives full support to the growth and development of SMEs through technology incubation, as well as business incubation. The term *technology business incubator* (here in after abbreviated into TBI) was then given by Ghasemizad (2009) and Ghasemizad et al. (2011).

This research was conducted through a collaboration of researchers with one of the state ports enterprises (SPE) in Indonesia. It has CSR pattern partnership program in various target areas in East Java and Central Java. It is known that these SPE ports have a CSR partnership program in collaboration with universities and local governments. Some CSR managers who were assigned to the partnership program realised they were still faced with constraints, some of which are that they were not yet able to implement the SME partner development strategy well, feared that this would negatively impact on TBI performance. This is because SME partners are still faced with dynamic and hostile environments, in addition to the limited resources and capabilities.

In this research, researcher used *resources-based view* approach which assumes that SMEs should have to have a set of resources and different capabilities to be superior (Grant, 2002; Newbert, 2008) to improve their performance. Several previous studies have concluded that there is a positive relationship pattern between environment-organisation's strategy-resource-capability-performance (Singh and Mahmood, 2014; Lukas et al., 2001; Li, 1991; Luo, 1999; Muafi, 2009a, 2009b; Amit and Schoemaker, 1993; Barney, 1991; Tuan and Yoshi, 2010). This research intends to fill the research gap by integrating environment-strategy-performance by considering aspects of organisation's resources and capabilities. It is also apart from the limited researches that focused on measuring TBI performance associated with SME development strategy through a CSR partnership pattern in Indonesia.

## **2 Theoretical framework and hypothesis**

### *2.1 BI and technology*

National Business Incubator Association (NBIA) defines BI as: "business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management

and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding" (Al-Mubarak and Busler, 2012). Kuratko and LaFollette (1987) added that BI also includes; effective talent, technology transfer, movement of capital, and technical know-how.

The concept of BIs has a significant development since the 1950s. This concept has grabbed the attention of various parties including universities, private companies, and governments. In the USA, for example, incubator has been growing since the early 1980s. Further incubator developments occurred in developing countries in the mid-1990s, including in India, China, Malaysia, Singapore, the Philippines and others, reaching up to 4,000 (Bank Indonesia, 2006).

Some of the reasons underlying the establishment of incubators in general are that most newly established businesses failed to grow and develop, not all talented people become entrepreneurs, and the world economic condition nowadays become increasingly competitive. For newly established businesses, there is a need of efforts to increase the skills and expertise through intensive training and mentoring. As for facing the competitive world economy, efforts to create new jobs are required (Bank Indonesia, 2006). In Asia, an increased effort to support entrepreneurship is through the BI (Al-Mubarak and Wong, 2011). In Indonesia, incubators have developed since 1992, from the government's initiative represented by the Ministry of Cooperatives in collaboration with universities. The effort continued in 1997 when the Entrepreneurship Culture Development in Higher Education Program was granted, in which one of the program activities was the New Entrepreneurial Incubator (INWUB). Therefore in 1999, the total number of incubators has reached as many as 29, which was largely a university program. According to the Ministry of Cooperative and SME, out of hundreds of Incubators that were created, only 56 incubator units in 2004 throughout Indonesia were mostly carried out by universities and only a few are active (Bank Indonesia, 2006; Muafi et al., 2012).

According Dipta (2003) and Bank Indonesia (2006), there are several factors that cause incubator underdevelopment in Indonesia, among others are:

- a limited supply of operations which resulted in an inability to find tenants
- b lack of support for seed capital that left incubators to be handled unprofessionally and caused many inwall tenants to miss the opportunities to get seed capital although their efforts actually deserved to be funded
- c lack of commitment and support from the government and their inconsistency in developing incubators.

When in fact the purposes of BI are job creation, fostering a climate for entrepreneurial, commercialisation of the technology, diversifying local economies, accelerating women entrepreneurship, identifying the potential of the spin-in or spin-out business opportunities and revitalisation of the community (Al-Mubarak and Busler, 2011c).

The concept of BI continues to experience a significant growth. This concept is later expanded with the development of technologies needed by SMEs, including the rapid technological developments in the modern world. Some researches have been done by several academics and practitioners by expanding the role and functions of BIs and technology. Moreover, Stanford University has conducted transfer of technology through

incubator innovations since 1979 by commercialising new technologies (Al-Mubarak and Busler, 2011b). Although the literature on the function and the effectiveness of technology incubator are limited (Ghasemizad et al., 2011), it seems that BI and technology are now used as a model for developing countries to develop SMEs. This is also a challenge for all parties, including universities (Mian, 1997, 1994). Cooperation can be done with several universities and industries (Monkman, 2010). Research findings from Ghasemizad et al. (2011) concluded that in improving the effectiveness of BIs and technology, the role of organisational procedures and entrepreneurial procedure has a significant meaning as a relationship mediator between extra-organisational procedures and intra-organisational procedures towards perceived effectiveness on TBI-programmed SMEs.

## 2.2 *BI and technology performance indicators*

Al-Mubarak et al. (2014) offered BIs to expand its programs such as: tangible services, finance, and advisory services, focusing on mentoring, networking, strategic partnering, promoting culture change and fostering entrepreneurial environments, technology transfer, and commercial technology. Meanwhile, Ghasemizad et al. (2011) added that the area expansion for BIs and technology could include; capital attraction, financial management and budget attraction, establishing relations with related companies, the government and suppliers, synergy and agreement between the staff and technology-developer companies and between the government and local or international, technology-developers, and humanitarian management.

All of these programs are directed to SMEs or tenants to achieve the expected TBI performance. There are several indicators to measure TBI performance, including:

### 1 Al-Mubarak and Busler (2011c) includes:

- a job creation
- b profitable enterprises
- c research commercialisation
- d entrepreneurship awareness
- e export revenue
- f policy impact
- g income generation.

### 2 Al-Mubarak and Busler (2013) add indicators:

- a high number of graduate companies and high survival rate of tenants leads to economic development
- b high cooperation of R&D and high innovation leads to technology commercialisation
- c high sustainable growth, high entrepreneurial climate and high smart-growth networking leads to fostering entrepreneurship.

### 3 Ghasemizad et al. (2011) and Ghasemizad (2009) include:

- a services and value added
- b motivation

22 *Muafi*

- c control and evaluation
- d management and policy effectiveness
- e networking
- f performance outcomes
- g geographical proximity.

4 Lalkaka and Bishop (1996) covers:

- a sponsor
- b enterprise creation
- c survival rate
- d employment generation
- e cost per job and non-quantifiable benefits.

5 Al-Mubarak and Wong (2011) covers:

- a the average number of business and jobs created
- b the success rate of graduating firms.

6 Drapier and Chaffer (2015) include:

- a job created, the cost per job created
- b average employment in graduate companies
- c average wage paid for jobs in graduate firms
- d the client survival
- e capital raised
- f graduate revenues
- g innovation and R&D
- h % of total running costs covered by public subsidy.

The summary of performance measurement indicators can be seen in Table 1.

### 2.3 *Environmental-strategy-performance*

Researcher in this study uses an environmental-strategy-performance (E-S-P) plan which connecting between environmental influence towards organisational strategy and also organisational strategy towards organisational performance (Lukas et al., 2001; Li, 2001; Luo, 1999; Beal, 2000). This E-S-P model approach has been successfully applied on some manufacturing industry such as; high-tech industry in China (Li, 2001), manufacturing industry in small business (Luo, 1999), consumer product industry and services (Adu, 1999), paper manufacturing industry and wood processing (Schull et al., 1995). This E-S-P plan is close with approaching process on the stages of management strategy which consists of strategy formulation, strategy implementation, and strategy evaluation. These stages will be connected with some variables such as environmental, organisational strategy, resources, organisational capability and organisational performance.

**Table 1** TBI performance measurement

Indicators outcomes	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Job creation	*	*			*	*	*	*	*
Profitable enterprises/cost per job	*				*		*	*	
Research commercialisation	*	*			*		*		
Entrepreneurship awareness	*						*		
Export revenue	*						*		
Policy impact	*						*		
Income generation	*						*		
High number of graduate companies		*				*		*	*
High survival rate of tenants lead to economic development		*			*			*	
High cooperation of R&D		*							
High innovation lead to technology commercialisation		*						*	
High sustainable growth		*							
High entrepreneurial climate		*							
High smart-growth networking lead to fostering entrepreneurship		*	*	*					
Services and value added			*	*					
Motivation			*	*					
Control and evaluation			*	*					
Management and policy effectiveness			*	*	*				
Performance outcomes			*	*	*	*	*	*	*
Geographical proximity			*	*					
Capital raised								*	

Source: (1) – Al-Mubarak and Busler (2011c); (2) – Al-Mubarak and Busler (2013), (3) – Ghasemizad et al. (2011); (4) – Ghasemizad (2009); (5) – Lalkaka and Bishop (1996); (6) – Al-Mubarak and Wong (2011); (7) – Al-Mubarak and Busler (2012); (8) – Drapier and Chaffer (2015); (9) – European Commission’s Enterprise DG (2002).

#### 2.4 Perceived environmental hostility-organisational strategy

Related with the business environmental, organisational theory shows that environmental is an important resource from organisational contingencies (Lawrence and Lorsch, 1967; Ward et al., 1995). Environmental hostility is regarded as one of the most important attributes for explaining strategic behaviours and outcomes (Elbanna, 2009). Some academics and practitioners have different environmental organisation measurements. Environmental organisations can actually be divided into two typologies, namely; hostile and benign environments (Muafi, 2009a). The characteristics of hostile environment are: precarious industry settings, harsh, overwhelming business climates, relative lack of exploitable opportunities, high risks, pressure and dominance. On the contrary, the

characteristics of benign environment are: provide a safe setting for business operations due to their overall level of munificence and richness in investment and marketing opportunities and manipulatable (Covin and Slevin, 1989; Robertson and Chetty, 2000; Muafi, 2009a; Kean et al., 1998).

Hitt et al. (2007) explained that through an integrated understanding of the environmental, companies can obtain the information needed to understand the current conditions and can predict the future. State-owned enterprises needs to have a development strategy of small and medium enterprises which they built so that it could be develop successfully and have an improvement in their organisational performance. It is caused by the cluster of small and medium enterprises is located apart and the environmental complexity that is heterogen and large (Suparyono, 2012). It is known that Indonesia is an archipelago and has diverse tribe, culture, local language and religion (Muafi, 2016). This requires readiness from the general manager and manager to do a strategy formulation and implementation of the strategy development of small and medium enterprises rightly because it is faced with a hostile environment.

Hypothesis 1 (H1) There is a significant positive effect on perceived environmental hostility faced by SME partners towards SME development strategy.

## 2.5 *Resources-organisational capability*

Regarding resources, Grant (2002) divides it into:

- 1 tangible
- 2 intangible
- 3 human resources.

Resources that are valuable, unique, and rare can affect organisational capabilities (Grant, 2002; Tuan and Yoshi, 2010; Ainuddin et al., 2007; Barney, 1991; Peteraf, 1993; Tuan and Takahashi, 2009).

Barney (1991) stated that resources and capability is two mutually dependent variables. Wernerfelt (1984) stated that "a firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semi-permanently to the firm". Resources are firm-specific assets that are difficult if not impossible to imitate (Teece et al., 1997). Resources that are unique, rare and valuable can bring up competitive advantage for the enterprises (Barney, 1991). Baden-Fuller (1995) and Parida (2008) stated that the enterprises will have distinctive different capability when they succeeded doing integration from different resources. Rongwei et al. (2010) shows empirically that resources that owned by an organisation on a certain industrial cluster will give a big contribution to improve organisational capability and organisation performance on that cluster. The under review resources cover tangible (financial, physical), intangible (technological, reputation), organisational and human resources. All of those will be able to give a significant contribution towards four dimensions of dynamic capabilities which are market orientation capability, social network capability, learning and absorption capability, and integrated cooperation capability. A success business of an organisation has to be able to combine between resource and dynamic capabilities so that the business can be last in a long term and continue to develop.



Whereas the capabilities of the organisation itself (technology, product design, production, marketing, networks, and services) can affect the organisation's strategy (Grant, 2002) in order to grow and develop (Sapienza et al., 2006) and to improve organisational performance (Tuan and Yoshi, 2010; Muafi, 2009a, 2009b). Distinctive capabilities are a source of competitive advantage (Mintzberg and Quinn, 1991). Liao and Ma (2009) and Lockstrom (2011) research results confirmed that companies should have the ability to mobilise resources and capabilities as well as adjusting themselves to the changing dynamic environment in order to achieve high performance or growth. Findings from USAID (2005) grouped four key factors that can affect the growth of SMEs, namely:

- 1 business environment
- 2 social aspect
- 3 company's age and capability
- 4 individual aspect.

These four aspects are interrelated with SME development strategy.

Hypothesis 2 (H2) There is a significant positive effect on the owned resources of SME partners towards SME's capabilities.

#### *2.6 Organisational capability-SME development strategy-SME TBI performance*

Teece et al. (1997, p.516) defined dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address a rapidly changing environment". Dynamic capabilities thus reflect an organisation's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions (Teece et al., 1997; Leonard-Barton, 1992). This research refers to the view of dynamic capability that "firm's behavioral orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage" as stated by Wang and Ahmed (2007, p.35) and Parida (2008). Parida (2008) in his research generally found the result that dynamic capability (adaptive, absorptive, innovation, networking) has an influence towards entrepreneurial strategy orientation (proactiveness, risk taking, innovativeness) and influenced towards the organisational performance even if in every cluster has different contribution. Specifically, it is:

- 1 regarding the clustering of small technological firms based on network structure and networking capability
- 2 regarding the absolute level for independent and control variables for each cluster
- 3 how ICT and networking capability are linked to entrepreneurial orientation for small firms from each cluster.

On the other hand, Wang and Hsu (2010) found the result that dynamic capability will impact positively towards business performance. Dynamic capability which covers research and development, marketing, and production will be able to improve business performance if it is reinforced with the presence of competitive posture. Competitive posture positively moderates the impact of dynamic capability for marketing on performance. The meaning of the organisational strategy on this research is development strategy of small and medium enterprises.

*Directorate for development of SME:* Vukcevik (2011) explained that SME development strategy could include; creation of environmental stimulation, competitive stimulation through strategy innovation and services, and ICT development. Meanwhile, Dipta (2008) stated that strategies that could be done to develop SMEs through CSR pattern partnership are by; fostering a conducive business climate, improving access to financial resources, improving market access, enhancing entrepreneurship and the ability of SMEs, and SMEs empowerment. Sriyana (2010) also added ease of access to capital, support in infrastructure development, development of business scale, business network development, marketing and business partnerships, human resources development, and improving access to technology.

Associated with organisational strategy, a more dynamic environment has an influence on entrepreneurial strategies to improve organisational performance (Covin and Slevin, 1989). Luo's (1999) research results also explained that there is no significant influence of the static environment on the orientation of strategy innovation, proactive, and high risk. Lukas et al. (2001) added that the interaction between dynamic environments and prospective strategies has an influence on performance. Meanwhile, Muafi's (2009a) research results also explained that in manufacturing companies in East Java, dynamic environment affects the prospector's strategy to improve export performance. The high suitability of strategy and external environment can improve company performance (Muafi, 2009a). Other researches from Muafi (2009b) also concluded that prospector's strategy influence *Athena* organisational culture and the behaviour of *entrepreneurial* company managers in Yogyakarta and Central Java.

TBI program needs implementation of development strategy of small and medium enterprises on seizing the opportunity and minimising threats, using the resources and organisational capability optimally to improve TBI performances. Some findings in E-S-P plan shows that organisational strategy can give a positive influence significantly towards business performance (Lukas et al., 2001; Li, 1991; Luo, 1999; Beal, 2000) especially the performance of TBI in small and medium enterprises. Manager of an enterprises will be pushed to be able to implements the development strategy of small and medium enterprises correctly so that the performance of the TBI in small and medium enterprises in each industry cluster which they built so it can be improved continually in a long term.

Lalkaka (2006) stated that to make TBI succeeded it has to have organisational strategy formulation goodly, also covers establishing the goals and selecting sponsors, creating linkages to professional/business communities, planning the physical facilities to stimulate creativity, leveraging policy and legislative support, building a dynamic management team, selecting the firms most likely to survive and grow, adding value through quality services, mobilising finance for the incubators and enterprises, monitoring performance and assessing impact. As in an orchestra, if the nine strategies can be played perfectly, it would have a success business performance. The result research from Pushpakumari and Watanabe (2009) gives conclusion that business

strategy orientation (proactive strategy and reactive strategy) from small and medium business enterprises will be able to improve its performance. The measure from TBI indicator performance refers to perceptual measure. Considerate with the diverse nature of the good performance indicator from operational definition or measurement of previous research related to SME performance (Pushpakumari and Watanabe, 2009; Muafi, 2016). Research from Adlesic and Slavec (2012) reinforced the result that exploitation strategy is proactively from social network in incubator will influenced TBI performance which measured from commitment to incubator and trust to incubator.

Hypothesis 3 (H3) There is a significant positive effect on SME partners' capabilities towards SME development strategy.

Hypothesis 4 (H4) There is a significant positive effect on SME partners' capabilities towards SMEs TBI performance.

Hypothesis 5 (H5) There is a significant positive effect on SME development strategy towards SMEs TBI performance.

### **3 Research method**

This research was conducted on SME partners TBI program where the company pays attention to the development in the fields of industry, trade, agriculture, animal husbandry, plantation, fishery, and services. Each region has a priority scale based on the results of previous mapping done by the research team. Likewise, the selection of SME partners' locations and SME partners are based on the aspects of increasing reputation, employment, minimising the potential for conflict, the provision of income contribution, business branches opportunities, regional economic growth, and equitable economic and social development. Data sources in this research are from primary and secondary data. The primary data was obtained directly by giving questionnaires to stakeholders, namely the general managers and executive managers of CSR, while the secondary data was obtained indirectly in the form of evidence, records, or historical reports that have been compiled from both published and unpublished data archives obtained directly from the companies. The population in this research was all general managers and managers that implement CSR, totalling up to 130. Samples were taken with a *purposive* technique along with the population characteristics, considered to represent the population in general, with a sample of the following criteria:

- 1 is a permanent employee of the company and has worked for at least five years
- 2 understands the implementation program of BI and technology on CSR pattern SME partners.

Questionnaires were given to 130 general managers and managers and a total of 115 questionnaires were returned (response rate 88%). The scaling technique used in hostile environments, resources, organisational capabilities, SME development strategy, and TBI performance is a Likert scale, ranging from 1 to 7. Perceived environmental hostility was measured by three items referring to Covin and Slevin (1989) and Robertson and Chetty's (2000) research results. Resource was measured by four items referring to Grant (2002), Tuan and Yoshi (2010), Ainuddin et al. (2007), Barney (1991)

and Peteraf's (1993) research. Capability was measured with six items referring to Grant (2002) and Tuan and Takahashi's (2009) research. SME development strategy was measured by six items referring to Vukcevik (2011), Sriyana (2010) and Dipta's (2008) research. TBI performance was measured with nine items referring to several research such as Table 1. Partial least square (PLS) was used for this research data analysis technique. The reason of using PLS is because it is a powerful technique which can serve as a tool to analyse the latent variables in the models of structural equation with a variety of indicators. Besides, the reason is that PLS does not require a normally distributed data (Muafi and Roostika, 2014; Muafi, 2015a). Validity and reliability tests were also conducted by PLS. In all items, validity testing resulted having a value above 0.5 while reliability testing used Cronbach alpha, together with a cutoff point more than 0.6 (Muafi and Roostika, 2014; Muafi, 2015a).

## 4 Results

### 4.1 Characteristic respondents

Respondents are general managers and managers who work from one of the ports in Indonesia, which has a number of 1,000 to 2,000 employees. Most of the respondents have a total staff of less than 24 people and were hired to conduct the monitoring and evaluation of the implemented CSR programs. Working period of the majority of respondents were from 12 to 19 years, male, and are 42 to 47 years old. 55% have a professional qualification based on their undergraduate education from bonafide universities in Indonesia. They have good work qualities, are experienced, and are holding the positions that suit their expertise.

### 4.2 Validity and reliability tests

#### 4.2.1 Discriminant validity

Reflective discriminant validity indicators can be seen in *cross-loading* between indicators with the constructs as seen in Table 2.

Based on Table 2, it can be seen that the value of *loading* items from each construct has a value greater than the value of other loading items constructs (Chin, 1998; Muafi, 2015a). This shows that the latent constructs' prediction of indicators in their group is better than the indicator in the other groups. Another method to assess the *discriminant validity* is by comparing the correlation of the square root of AVE for each construct towards the latent constructs in the model as seen in Table 3.

Based on Table 3, it can be seen that the overall value of the square root of AVE variables (capability, environment, resource, strategy and performance) has a value higher than the correlation between other variables (Muafi, 2015a). Therefore, it can be said that these variables have good discriminant validity.

**Table 2** Cross loading

	<i>CAP</i>	<i>ENV</i>	<i>PERFOR</i>	<i>RES</i>	<i>STRAT</i>
CAP1	<b>0.624</b>	0.410	0.492	0.373	0.537
CAP2	<b>0.818</b>	0.505	0.618	0.554	0.542
CAP3	<b>0.730</b>	0.403	0.479	0.439	0.485
CAP4	<b>0.725</b>	0.512	0.503	0.529	0.489
CAP5	<b>0.774</b>	0.488	0.576	0.505	0.542
CAP6	<b>0.708</b>	0.411	0.504	0.460	0.514
ENV1	0.541	<b>0.869</b>	0.619	0.465	0.615
ENV2	0.531	<b>0.838</b>	0.553	0.501	0.535
ENV3	0.454	<b>0.743</b>	0.484	0.400	0.420
PERFOR1	0.590	0.466	<b>0.764</b>	0.504	0.511
PERFOR2	0.483	0.475	<b>0.674</b>	0.416	0.541
PERFOR3	0.513	0.544	<b>0.676</b>	0.475	0.523
PERFOR4	0.592	0.454	<b>0.740</b>	0.539	0.532
PERFOR5	0.465	0.465	<b>0.679</b>	0.452	0.423
PERFOR6	0.531	0.544	<b>0.697</b>	0.441	0.553
PERFOR7	0.491	0.475	<b>0.727</b>	0.380	0.497
PERFOR8	0.523	0.524	<b>0.776</b>	0.441	0.524
PERFOR9	0.437	0.400	<b>0.676</b>	0.416	0.398
RES1	0.443	0.473	<b>0.458</b>	<b>0.729</b>	0.483
RES2	0.504	0.396	0.415	<b>0.805</b>	0.411
RES3	0.501	0.436	0.513	<b>0.752</b>	0.507
RES4	0.535	0.399	0.541	<b>0.753</b>	0.432
STRAT1	0.561	0.489	0.553	0.412	<b>0.738</b>
STRAT2	0.546	0.493	0.504	0.402	<b>0.736</b>
STRAT3	0.498	0.463	0.582	0.513	<b>0.796</b>
STRAT4	0.523	0.545	0.495	0.397	<b>0.758</b>
STRAT5	0.580	0.529	0.533	0.544	<b>0.779</b>
STRAT6	0.521	0.451	0.557	0.472	<b>0.762</b>

**Table 3** AVE and communality

<i>Variable</i>	<i>AVE</i>	<i>Communality</i>
CAP	0.536	0.536
ENV	0.670	0.670
PERFOR	0.509	0.509
RES	0.578	0.578
STRAT	0.580	0.580

#### 4.2.2 Convergent validity

Convergent validity can be seen from the value of inter-item correlation score of the construct scores calculated using PLS. Convergent validity index was measured by AVE and communality. AVE and communality index results are shown in Table 3.

Based on Table 3, it can be seen that the value of AVE and communality of all the variables have a value greater than 0.5, therefore these variables have good convergent validity values (Muafi, 2015a).

#### 4.2.3 Reliability test

*Cronbach's alpha* and *composite reliability* can be used to see if the research variables are reliable or not. The result can be seen in Table 4.

**Table 4** Values of Cronbach's alpha and composite reliability

<i>Variable</i>	<i>Composite reliability</i>	<i>Cronbach's alpha</i>
CAP	0.873	0.825
ENV	0.858	0.755
PERFOR	0.903	0.879
RES	0.845	0.756
STRAT	0.892	0.855

Based on Table 4, it can be seen that the values of *composite reliability* and *Cronbach's alpha* of all the variables are more than 0.7. This indicates that research questionnaire items are reliable (Muafi, 2015a; Hair et al., 1995).

#### 4.2.4 Structural model evaluation

This research evaluates the structural model on the endogenous variables by using the coefficient of determination ( $R^2$ ) and the value of Q. More clearly can be seen in Table 5.

**Table 5** Latent Variable Coefficient

<i>Coefficient</i>	<i>ENV</i> (environment)	<i>RES</i> (resource)	<i>STRAT</i> (strategy)	<i>CAP</i> (capability)	<i>PERFOR</i> (performance)
$R^2$	-	-	0.572	0.429	0.601
Q square	-	-	0.322	0.202	0.291

The coefficient of determination ( $R^2$ ) in Table 5 show that the percentage magnitude of endogenous construct variants can be explained by endogenous construct. Based on the results of data processing, it shows that  $R^2$  from construct endogenous strategy (Stra) of 0.572. Those results mean that the variants of construct endogenous strategy can be described of 57.2% by construct exogenous variants. The results of the data processing on Cap construct have  $R^2$  of 0.429 which means that the variants of construct endogenous cap can be described of 42.9% by construct exogenous variants Res and Env.

While the data processing in Perf construct have  $R^2$  of 0.601 which means the variants of Perf endogenous construct can be described of 60.1% by construct exogenous

variants Strat and Cap. The structural model of evaluation conducted in this study also looked at predictive relevance, by using the value of Q square. The rule that used is that the value of endogenous variable must be bigger than zero so it will be able to indicate that exogenous construct have predictive relevance on an influenced endogenous variable.

The test with SEM PLS shows that the value of Q square on each exogenous construct is bigger than zero, which is the Strat exogenous construct have a Q square of 0.332; Cap exogenous construct has Q square of 0.202; and the Perf exogenous construct have Q square of 0.291.

The test shows that the Q square on each endogenous construct in this research is bigger than zero. This means the predictive relevance of research model is very well.

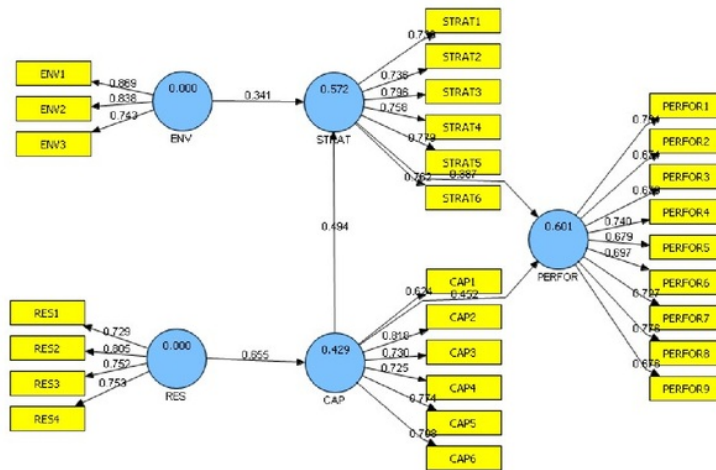
R square and Q square used for this research were to evaluate its structural model. But, the research is also used the effect size in evaluating the structural model. Effect size is used to look at the individual contributions of each absolute value of latent variables in the value of the predictor variable R2 criteria. Effect size has size, among others:

- 1 0.02 belongs to the weak
- 2 medium 0.15
- 3 large 0.35.

#### 4.2.5 Hypothesis test

Hypothesis in this research was done by analysing the relationship between the data needed and the relationship between exogenous and endogenous variables, tested with PLS. Hypothesis testing results can be seen in Figure 1 and Table 6.

**Figure 1** Result of the structural model (see online version for colours)



**Table 6** Coefficient Path

<i>Path</i>	<i>T-statistic</i>	<i>Original sample</i>	<i>Sign</i>	<i>Result</i>
H1 Env → Strat	3.653	0.341	0.001	H1 is accepted
H2 Res → Cap	9.778	0.655	0.000	H2 is accepted
H3 Cap → Strat	5.281	0.494	0.000	H3 is accepted
H4 Cap → Perfor	5.225	0.452	0.000	H4 is accepted
H5 Strat → Perfor	4.573	0.387	0.000	H5 is accepted

Table 6 shows that:

- 1 The influence between perceived environmental hostility towards SME development strategy (Env → Strat) is significant with T-statistics number 3.653. The original sample estimate point is positive with the number 0.341 which shows that the aim relation between perceived environmental hostility towards SME development strategy (Env → Strat) is positive. If so, Hypothesis H1 in this research that stated there is an influence of perceived environmental hostility towards SME development strategy is accepted.
- 2 The influence between the owned resources of SME partners' towards SME's capabilities (Res → Cap) is significant with T-statistics number 9.778. The original sample estimate point is positive with the number 0.655 which shows that the aim relation between the owned resources of SME partners' towards SME's capabilities (Res → Cap) is positive. If so, hypothesis H2 in this research that stated there is an influence of the owned resources of SME partners' towards SME's capabilities (Res → Cap) is accepted.
- 3 The influence between SME partners' capabilities towards SME development strategy (Cap → Strat) is significant with T-statistics number 5.281. The original sample estimate point is positive with the number 0.494 which shows that the aim relation between SME partners' capabilities towards SME development strategy (Cap → Strat) is positive. If so, Hypothesis H3 in this research that stated there is an influence of SME partners' capabilities towards SME development strategy (Cap → Strat) is accepted.
- 4 The influence between SME partners' capabilities towards SMEs TBI performance (Cap → Perfor) is significant with T-statistics number 5.225. The original sample estimate point is positive with the number 0.452 which shows that the aim relation between SME partners' capabilities towards SMEs TBI performance (Cap → Perfor) is positive. If so, Hypothesis H4 in this research that stated there is an influence of SME partners' capabilities towards SMEs TBI performance (Cap → Perfor) is accepted.
- 5 The influence between SME development strategies towards SMEs TBI performance (Strat → Perfor) is significant with T-statistics number 4.573. The original sample estimate point is positive with the number 0.387 which shows that the aim relation between SME development strategy towards SMEs TBI performance (Strat → Perfor) is positive. If so, Hypothesis H5 in this research that stated there is an influence of SME development strategy towards SMEs TBI performance (Strat → Perfor) is accepted.



## **5 Discussion and implications**

The research results concluded that there is a significant positive effect on perceived environmental hostility faced by SME partners towards SME development strategy. This also reinforces the findings of Luo (1999) and Lukas et al. (2001) stating that hostile environment could affect the company's organisational strategy. Likewise, a dynamic environment has a greater influence on entrepreneurial strategies to improve organisational performance (Covin and Slevin, 1989). If the environments faced by SMEs are dynamic, complex, and turbulent, the SME development strategy should be directed at strategies of innovation, entrepreneurial, high risk, and proactive in order to be able to improve TBI performance. This is due to the high suitability of strategy and external environment, which can improve company performance (Muafi, 2009a). The executives that implement CSR should motivate and facilitate SME partners to continue creating products and services of high quality and meet global standards. Moreover, the current ASEAN Economic Community (AEC) demands SMEs to create products and services that are globally competitive. Although up until now, SMEs have been tested as a business group that has a high working spirit, are always responsive, flexible, and smart enough to adapt to market changes. Implementation of the ASEAN Economic Community (AEC) should be a stirring challenge and not considered as a threat. Ready or not, the SMEs in Indonesia should follow the rules created by ASEAN Economic Community (AEC). Standardisation and certification of products are crucial in order to prevent product similarities between Indonesia and other countries. Likewise, companies must be able to create and produce products and services with the price and qualities that can compete with foreign and domestic products.

The research results concluded that there is a significant positive effect on the owned resources of SME partners towards SME's capabilities. This also supports the findings and opinions of various experts, stating that valuable, unique, and rare resources could become a significant asset and could give a significant impact on organisational capabilities (Grant, 2002; Tuan and Yoshi, 2010; Ainuddin et al., 2007; Barney, 1991; Peteraf, 1993; Tuan and Takahashi, 2009). SMEs have to optimise and utilise their resources to increase productivity economically. Their resources have to be able to support the market demand volume with a wide range of demands. Certainly it must be a tremendous and valuable asset if the resources are able to provide a positive contribution in increasing the organisation's capabilities. Considering human resource as an intellectual capital is also important. Intellectual capital can be done by measuring human capital, structural capital (databases and organisational structure), and customer capital (customer and supplier relationship) (Saeed et al., 2013). When intangible asset (intellectual capital) on SMEs can be managed effectively and efficiently, SMEs are expected to be able to achieve high profits.

Moreover, the research results concluded that there is a significant positive effect on SME partners' capabilities towards SME development strategy. This also supports Grant's research (2002), showing that the capabilities of the organisation itself can affect the strategies implemented by the organisation. Based on Liao and Ma (2009) and Lockstrom's (2011) research, SMEs should have the ability to mobilise their capabilities optimally in influencing the strategy to expand their business. Technology, product design, production, marketing, networking, and services are the main capital for SMEs to create products and services that are in line with the expectations and demands of modern

society. Researcher is fully aware that there is still a small number of SMEs that have these kinds of capabilities. Governments, corporations, and universities are obliged to continue to direct and guide them. Referring to Grant's suggestion (2002), in order to identify and assess company's capabilities, a manager must look broadly, deeply, and from different perspectives. Every organisation has some activities where they have the advantage or the potential to excel. For example, Federal Express has the advantage of having a system that guarantees delivery within one day for every area in the USA. For retailers Marks & Spencer located in the UK, they have the ability to ensure high product qualities and are consistent on their merchandise products through a good relationship with their dealer. Some examples of SMEs' innovative products from Indonesia have so much to penetrate foreign markets and promote local knowledge of each area.

The research results also concluded there is a significant positive effect on SME partners' capabilities towards SMEs TBI performance. This supports previous research results that stated that organisation's capabilities itself can affect organisational performance (Tuan and Yoshi 2010; Muafi, 2009a, 2009b). Capabilities owned by SME partners should encourage SMEs to produce performance expected by the executive managers, including:

- 1 job creation
- 2 profitable enterprises
- 3 research commercialisation
- 4 entrepreneurship awareness
- 5 export revenue
- 6 high cooperation of R&D and high innovation lead to technology commercialisation
- 7 high sustainable growth
- 8 high entrepreneurial climate and high smart-growth networking lead to fostering entrepreneurship
- 9 of raised capital.

The managers hope that with the TBI models that are already running, the end products from SME partners should be more qualified and can compete with the products within the country and abroad. TBI program was done by providing capital and training in both business and technology so that they continue to practice and develop their business by creating high-value and innovative products. The companies promised to dispatch SME partners that have the potential for creating superior products to attend local, national, and even international class exhibitions, with the intention of making the resulting products to be recognised by local, national, and international societies. These SME partners need special attention and must be supported by accurate and timely information in order to have a focused business network between SME partners with stakeholders, particularly customers and investors.

The research results concluded there is a significant positive effect on SME development strategy towards SMEs TBI performance. Results of this research also supports Singh and Mahmood (2014), Lukas et al. (2001), Li (1991), Luo (1999) and Muafi's (2009a, 2009b) research. Several strategies that are offered to be implemented are among others; fostering a conducive business climate, innovation strategy and services, ICT development, increasing market access, ease of capital access, and human resource development. Companies can create a conducive business climate by empowering the manners of SME partners, such as by

- 1 creating high quality products and services and compete in a healthy way
- 2 empowering SME partners to carry out correct business ethics and practices
- 3 encouraging the government to make regulations and policies that support SME businesses
- 4 prohibiting all forms of businesses that are harmful and cause a socioeconomic inequality community.

Amabile et al. (1996) stated that in order to become the market leader, companies have to innovate, especially if they are faced with a dynamic and turbulent environmental condition. Companies will have a lot of creative ideas when faced with habits and demands from a hostile business environment (Muafi, 2015a). According to researchers' observations, SMEs in Indonesia are rarely exposed to high innovation. This is because they require different decision-making options compared to large companies (O'Regan and Ghobadian, 2005; Muafi, 2015b). The main reason is the lack of human resource and other resources owned by the SMEs. Prakosa's research results (2005) measured that innovation in SMEs in terms of their openness to new ideas and their capacity to innovate are still relatively poor. Implementation of innovation strategy in Asia is still relatively new, whereas in fact the innovation strategy in Asia is predicted to be the main engine of economic growth in the future (Meyer and Garg, 2005). In general, companies in Asia are more concerned to compete with cheap prices as medium and long-term strategies. Demands for ICT development, increasing market access, ease of capital access, and human resources development are continued to be implemented by companies in stages in order to improve TBI performance, hoping to ensure business sustainability in the future.

The theoretical and managerial implications of this research are that hostile environment has a positive impact for executive managers who implement CSR for developing SME partners to be superior and competitive. SME partners can mobilise their resources in order to maximise their capabilities. Capabilities can be used optimally in order to implement the development strategy of SME partners in order to improve TBI performance according to the executive managers' expectations. TBI program should really be implemented with the correct TBI patterns and measures regularly and in an ongoing basis. CSR partnership program can still be implemented by providing training, capital, coaching, and development for SMEs. The aim is for SME partners to grow and thrive to increase their productivity. Increased SME productivity is urgently needed in order to overcome the inequality between actors, income groups, and regions that are considered to be in poverty alleviation, in addition to improving national competitiveness (Dipta, 2008) and creating regional clusters of competitive SMEs (Muafi et al., 2016).

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ORIGINALITY REPORT

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