

**THE ROLE OF DYNAMIC CAPABILITY IN MEDIATING THE EFFECTS
OF ENVIRONMENTAL DYNAMISM AND MANAGERIAL CAPABILITIES
ON FIRM PERFORMANCE: A PRELIMINARY STUDY**

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Abstract

Small and Medium Enterprises (SMEs) face many challenges from the coming rapid changes such as technology advancement, competitions, limitations and supports from government regulations, and limitations in terms of capital supply, product knowledge, and company management. Building and maintaining the firm performance of SMEs can be achieved through external factors (environmental dynamism) and internal factors (managerial capabilities). By using the dynamic capabilities as an intervening variable, it is expected to have an impact on firm performance by measuring the perceptiveness from owners or managers of SMEs. By using PLS-SEM analysis, the selected samples in this study consisted of 30 owners or managers of SMEs from Surabaya, Indonesia. The results indicated that the environmental dynamism and managerial capabilities have a significant influence on firm performance with dynamic capabilities as the intervening variables. Environmental dynamism also has a significant influence on firm performance. Meanwhile, managerial capabilities do not have a significant influence on firm performance.

Keywords: Firm Performance, Dynamic Capabilities, Environmental Dynamism, Managerial Capabilities, Small and Medium Enterprises (SMEs)

INTRODUCTION

Small and Medium Enterprises (SMEs) is a potential business that is highly considered by the government because the more people in entrepreneurship are, the better and stronger the economy of a region will be. By the presence of SMEs, local resources, local workers, and local financing can be optimally absorbed and used. Many SMEs have difficulty in repaying loans due to the increase of local interest rates, and difficulty in the production process due to the increase of the price for raw materials derived from imported materials. Several factors affecting the performance of SMEs are the influence of internal and external factors. The success of an SME depends on the ability of people in it to manage internal and external factors through the analysis of environmental factors and the establishment and implementation of

business strategies. External factors are constructed from social networks, legality, government support, guidance, technology, and access to information (Sudiarta et al., 2014), while internal factors depend on internal capability management.

This study analyzed environmental dynamism as an external factor in forms of dynamic environmental changes and the needed managerial capabilities as an internal factor in influencing firm performance. Furthermore, this study also examined the implementation of dynamic capabilities as an intervening variable for SMEs in terms of its effects on firm performance. The subjects in this study were SMEs in Surabaya. In particular, besides being the focus of various studies, SMEs also become study material for government policies considering that the strategic role of SMEs in the development process in many countries as what has been seen so far (Hill, 2001; Marino et al., 2008; Tambunan, 2008).

The environment includes various dimensions that can affect the industry and the company in which the environment is an important contingency factor because of its impact on the achievement of the firm performance. Klassen and McLaughlin (1996) found that using appropriate proactive environmental strategies was the key to the significant relationship between environmental dynamism and firm performance. Furthermore, the performance and development of SMEs highly depend on the development of human resources in various aspects, especially in the field of human resources competencies such as knowledge, skills, abilities, and attitude in entrepreneurship. The spirit of entrepreneurship and the increase of productivity supported by technology development become important points in the focus of strengthening human resources. Ardiana et al. (2010) found that the level of knowledge of human resources for SMEs in Surabaya does not affect firm performance. However, the level of skill of human resources for SMEs affects firm performance. Adner and Helfat (2003) showed that managerial capabilities have a significant influence on firm performance.

Dynamic capabilities are the ability of the company to integrate, build, and reconfigure its internal and external competencies to face the rapid environmental changes (Teece & Pisano, 1994; Teece, et al., 1997). Wu (2006) in his research proved that dynamic capabilities are an intervening variable between resources and performance in an unstable environment. Argote (1999) stated that in an unstable environment, company resources, both internal and external, do not directly affect firm performance. The available resources will only be a detrimental factor for managers if they do not pay attention to changes that occur and underestimate existing problems.

Based on the situation and condition of the SMEs described and the problems outlined above, the purposes of this study are: (1). to examine and analyze the effect of environmental dynamism and managerial capabilities on dynamic capabilities of Small and Medium Enterprises (SMEs), (2). to examine and analyze the effect of environmental dynamism and managerial capabilities on firm performance and dynamic capabilities as an intervening variable, and (3). to examine and analyze the

effect of environmental dynamism and managerial capabilities on firm performance of Small and Medium Enterprises (SMEs).

Previous studies have found that environmental dynamism has a positive effect on the dynamic capabilities of a company. Therefore, the higher the intensity of environmental dynamism is, the stronger the dynamic capabilities of the company are (Oktemgil & Greenley, 1997; Teece, 2007; Li & Liu, 2014). Rapid changes occur in the field of technology and the level of product and market competition is increasing faster and more competitive in which factors of those changes are not easy to predict. The current condition of the business environment shows that changes and innovation are increasingly uncertain plus inconsistent government regulations (Dess & Beard, 1984; D'Aveni, 1994; Hitt et al., 1998). In facing and anticipating conditions that are full of uncertainties, dynamic capabilities are needed. Companies are required to have the skills needed to adapt to these changes. Dynamic capabilities have become a key driver for company evolution by overcoming market dynamics in forms of rapid changes (D'Este, 2002; Mota & de Castro, 2004; Athreye, 2005). Zahra et al. (2006) stated that dynamic capabilities develop in response to various situations not on environmental dynamism. Therefore, the management of this capability is highly important to get good firm performance.

Previous studies have stated that managerial capabilities have a positive impact on the dynamic capabilities of a company (Helfat et al., 2007; Tripsas & Gavetti, 2000, Harreld et al., 2007). The role of managers in developing the ability of the company to deal with and adapt to new environments is very important and can determine the progress and performance of the organization. They are the determining factors in the implementation and development of various forms of dynamic capabilities (Helfat et al., 2007; Harreld et al., 2007). Cepeda and Vera (2007) stated that managers are the major key in the learning process in organizations to construct new skills that are highly needed in dynamic capabilities so that they can compete in a rapidly changing environment. The decisions from managers will determine the level of knowledge required by the company and the strategies needed to survive and win the market. The perception of the owners or managers of the company is very important and strategic in recognizing opportunities to productively change the routine habits or change the configuration of resources needed, namely their willingness to make changes and their ability to implement these changes (Penrose, 1959).

Previous studies stated that dynamic capabilities have a positive impact on firm performance (Tsai & Shih, 2013; Tiantian et al., 2014; Chien & Tsai, 2012). Wu (2006) in his research proved that dynamic capabilities are an intervening variable between resources and performance in an unstable environment. Dynamic capabilities have a higher effectiveness than resource base view to face environmental volatility and provide a competitive advantage, then, consequently, it will significantly affect the firm performance (Wu, 2006). Hitt et al. (2011) in their research stated that dynamic capabilities create market value by adjusting resources in a strong environmental change and improving firm performance by prioritizing the accuracy,

speed, and efficiency of the organization in market changes that occur. Tiantian et al. (2014) examined dynamic capabilities on firm performance in various levels of changes in the external environment of the company. They found that dynamic capabilities have the most significant influence on firm performance in an intermediate level of dynamism. However, it becomes weaker when the level of change is at a strong or weak level. Chien and Tsai (2012) found out that the dynamic capabilities of a company improve firm performance and become an intervening for the downsizing strategy of the company to significantly improve firm performance.

Klassen and McLaughlin (1996) stated that environmental changes and environmental influences are related to the external situation of the company or patterns of dynamic environmental changes and government policies or regulations which in turn affect the increasing financial performance of the company. Harreld et al. (2007) also stated that many companies struggled and could not continue their operations when the environmental change occurred because they failed to adapt to the new environment. Wardhana and Ardianti (2014) stated the superiority factors of SMEs in surviving through times of crisis are to have several flexibility factors, such as a simple organizational structure, the cost of human resources that is reduced as minimum as possible, and flexibility in its arrangement, placement, and management. SMEs also have a low risk of economic turmoil because they use their capital or joint ventures with several other partners and not having a lot of bank loans. Furthermore, the freedom to innovate and to develop its products is also a key to the success of SMEs in facing the crisis.

Previous studies stated that managerial capabilities have a positive impact on the firm performance of the company (Gupta et al., 2014). Gelaskanycz and Hambrick (1997) stated that the ability of managers to formulate and implement strategic initiatives in capitalizing environmental opportunities is a vital point for organizational success. Empirical evidence by Eisendhardt and Schoonhoven (1990) indicated that the executive team is a determining factor not only for organizational strategy but also for improving firm performance. The empirical studies also revealed that excellent organizational performance correlates with the competencies and profiles of senior executives based on the strategies that they have implemented (Michel & Hambrick, 1992). Castanias and Helfat (2001) in their research stated that superior managerial human capital constructed from expertise based on work experience, learning-by-doing, and best practices from books, knowledge, and other sources of information can improve the knowledge needed in carrying out managerial tasks in which it directly impacts the increase of firm performance where the ability of top management combined with the assets and capabilities of the company can increase profits significantly.

Based on the conceptual framework, the formulated hypotheses in this study are as follows:

1. Environmental dynamism has a significant effect on the dynamic capabilities of Small and Medium Enterprises (SMEs).

2. Managerial capabilities have a significant effect on the dynamic capabilities of Small and Medium Enterprises (SMEs).
3. Environmental dynamism and managerial capabilities have a significant effect on firm performance of Small and Medium Enterprises (SMEs) with dynamic capabilities as an intervening variable.
4. Environmental dynamism has a significant effect on firm performance of Small and Medium Enterprises (SMEs).
5. Managerial capabilities have a significant effect on firm performance of Small and Medium Enterprises (SMEs).

RESEARCH METHODS

The type of this study was explanatory research that tried to prove the causal relationship between independent variables, namely environmental dynamism (ED) and managerial capabilities (MC), an intervening variable, namely dynamic capabilities (DC), and a dependent variable, namely firm performance (FP).

The population in this study was SMEs engaged in consumer goods in the field of manufacturing or services from the Family Business Community of Ciputra University in Surabaya. Small and medium enterprises are defined by the Central Statistics Agency based on the quantity of their labor, namely small enterprises having 5 to 19 workers while medium enterprises having 20 to 99 workers. The study focused on the medium-sized enterprises owned by the Family Business Community from students of Ciputra University in Surabaya. The respondents of this study were students who were the owners or managers who were fully responsible for the operations and strategic management of those enterprises. In this study, the criteria were specified based on certain characteristics, namely Small and Medium Enterprises engaged in consumer goods, manufacturing or services, and having 20 to 99 workers. In total, 107 students from this community were asked to fulfill a questionnaire. Of those 107 students, only 99 of them returned the questionnaire with complete filling. After that, the returned questionnaires were selected. It turned out that those that met the requirements according to the characteristics of this study were only 30 respondents.

The variables in this study were (1) exogenous or independent variables consisting of environmental dynamism (ED) and managerial capabilities (MC), (2) an intervening variable consisting of dynamic capabilities (DC), (3) an endogenous or dependent variable consisting of firm performance (PF). Environmental dynamism in this study was the rapid and unpredictable rate of external changes in the industrial environment of a company, such as rapid changes in technology, markets, and intense competition (Dess & Beard, 1984). Managerial capabilities in this study were managerial capabilities of the company to manage resources and competencies of the company optimally to prepare the capabilities to face the changes of external conditions (Adner & Helfat, 2003). Dynamic capabilities referred to the capability of a company to integrate, build, and harmonize internal and external factors to be able to adapt to a rapidly changing environment (Teece et al., 1997). Firm performance

referred to the achievements of the company and the success of personnel, teams, or units of the organization in realizing strategic goals that have been previously set with the expected behavior (Mulyadi, 2007).

In this study, the constructed research model has never been examined as a single unit but rather examined separately between variables. Therefore, PLS-SEM analysis is the appropriate technique of analysis to use. The process of PLS-SEM analysis consists of measurement models and structural models. The process of testing in the measurement model aims to measure the indicators used in a construct.

RESULTS & DISCUSSION

The results of hypothesis testing using the p -value can be seen in Table 1. By employing the PLS-SEM analysis, the estimated results of the direct influence are determined using the p -value where the value must be less than 0.05. The gained value if it is smaller than 0.05 indicates that there is a significant effect between the two variables. Positive or negative effects will be seen on the path coefficient. A negative value on the coefficient means that the variable has an inverse correlation.

Table 1.
Results of Hypothesis Testing

	Path Coefficients	P -Value	Meaning	Hypothesis
ED → DC	0.18	0.05	Significant	H1
MC → DC	0.58	< 0.01	Significant	H2
DC → FP	0.44	0.01	Significant	H3
ED → FP	0.36	0.01	Significant	H4
MC → FP	0.17	0.16	Not Significant	H5

From Table 1, it showed the direct effect of exogenous latent variables on endogenous latent variables in which environmental dynamism (ED) has a greater direct effect on dynamic capabilities (DC) compared to managerial capabilities (MC). For more details, it can be seen in Figure 1 below.

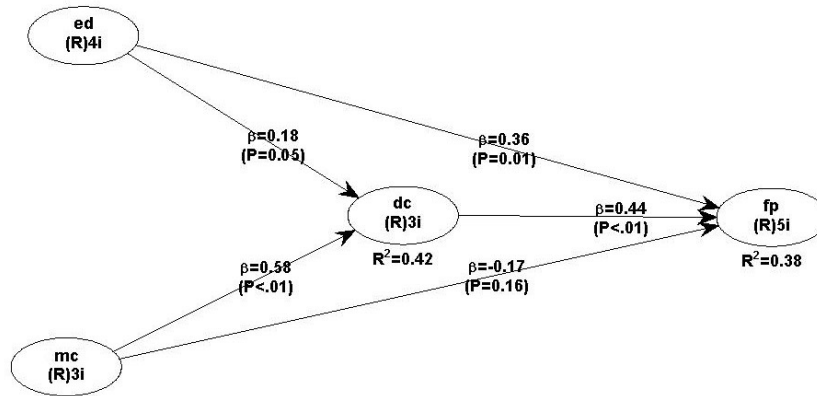


Figure 1. Research Framework

The results of the estimated influence between environmental dynamism (ED) and dynamic capabilities (DC) on Small and Medium Enterprises indicated a path coefficient that was greater than the p -value ($0.18 > 0.05$) meaning that environmental dynamism (ED) has a significant effect on dynamic capabilities (DC). Therefore, hypothesis 1 is accepted. The results of the estimated influence between managerial capabilities (MC) and dynamic capabilities (DC) on Small and Medium Enterprises indicated a path coefficient that was greater than the p -value ($0.58 > 0.01$) meaning that managerial capabilities (MC) have a significant effect on dynamic capabilities (DC). Therefore, hypothesis 2 is accepted. Dynamic capabilities (DC) as an intervening variable were influenced by environmental dynamism (ED) and managerial capabilities (MC). The influence was shown by the R^2 value of 42%. Dynamic capabilities (DC) also had a direct effect on firm performance (FP) of 0.44. Dynamic capabilities (DC) had a significant effect on firm performance (FP) as indicated by p -values of 0.01. Therefore, hypothesis 3 is accepted. The results of the estimated influence between environmental dynamism (ED) and firm performance (FP) indicated a path coefficient that was greater than the p -value ($0.18 > 0.05$) meaning that environmental dynamism (ED) has a significant effect on firm performance (FP). Therefore, hypothesis 4 is accepted. The results of the estimated influence between managerial capabilities (MC) and firm performance (FP) indicated a path coefficient of -0.17 (below 0.3) and a p -value of 0.16 (above 0.05) meaning that managerial capabilities (MC) have no significant effect on firm performance (FP). Therefore, hypothesis 5 is rejected.

To examine the effect of the intervention on the PLS model, Hair et al. (2014) suggested using the Variance Accounted For (VAF) method. Firstly, the researcher has to look at whether the direct effect on a variable is significant or not. Before determining the VAF value, the researcher has to analyze the direct effect of environmental dynamism (ED) on firm performance (FP) and dynamic capabilities (DC) to firm performance (FP). This means that those two correlations must be

separated from the overall influence in this study. The following are the values of the direct influence of those two correlations.

Table 2.
Direct Influence of Variables without the Intervening Variable (DC)

	Path Coefficients	<i>P</i> -Value	Meaning
ED → FP	0.47	0.0001	Significant
MC → FP	0.35	0.002	Significant

After finding out the direct effect, it is necessary to find out the indirect effect of those two correlations above which will be shown in Table 3 below.

Table 3.
Indirect Influence

	Path Coefficients
ED → FP	0.078
MC → FP	0.256

Hair et al. (2014) provided guidelines for interpreting the result of VAF. If the result of VAF is below 20%, it indicates that there is no intervening effect. Meanwhile, if the result of VAF ranges from 20% to 80%, it indicates that there is a partial intervening effect. Furthermore, if the result of VAF is above 80%, it indicates that there is a full intervening effect. From those guidelines, it can be concluded that there is no intervening effect between environmental dynamism (ED) and firm performance (FP). However, there is a partial intervening effect between managerial capabilities (MC) and firm performance (FP).

Table 4.
VAF Value

	VAF Value
ED → FP	0.14 = 14%
MC → FP	0.42 = 42%

The results of the hypothesis testing analysis indicated that environmental dynamism has a significant effect on the dynamic capabilities of Small and Medium Enterprises (SMEs). Environmental dynamism triggers the organization to increase their adaptive ability to face environmental changes that occur from government regulation and policy, technology advancement, or products and strategies from the competitors, to increase their absorptive capability towards all information from current regulations, the latest technology, and up-to-date information on intense market competition, and, eventually, to generate innovative capability in managing

the company. In line with the results of a study conducted by Li and Liu (2014), it stated that dynamic capabilities are the potential ability of the company to systematically solve problems. It is constructed from a tendency to always anticipate opportunities and threats both from external and internal to the company. Through those capabilities, the decision-makers of the company can make the right decisions and implement them in every strategic decision that they make and can change efficiently in understanding and anticipating each problem accurately to ensure the right results in formulating the strategy of the company and in implementing the policy of the company. SMEs need this ability to maintain their existence as a company that has high flexibility and to adapt and to create various innovations to survive the crisis both locally and globally.

Managerial capabilities have a significant influence on dynamic capabilities. Managerial capabilities that emphasize investment in education, training, or learning aspects to human resources (managerial human capital) are the key factor in continuously developing skills and improving capabilities. The ability to socialize through social relations and the community (managerial social capital) is a strategic key for Small and Medium Enterprises (SMEs). Christian and Ardianti (2013) in their research found that the performance of Small and Medium Enterprises (SMEs) in East Java received social capital support that improved firm performance.

Managerial cognition refers to the capability related to the beliefs or the paradigm of thinking possessed by the leaders such as knowledge or assumptions about things that will happen, knowledge about the options to be chosen, and knowledge about the consequences of each choice taken. The results of this study are consistent with the previous study conducted by Harreld et al. (2007), in which it stated that one of the core aspects of managerial roles is being able to develop dynamic capabilities of the company. This further confirms the argument that the better the managerial role carried out by the owners or manager is, the better their role in developing dynamic capabilities will be.

Environmental dynamism and managerial capabilities have a significant influence on firm performance with dynamic capabilities as an intervening variable. From this result, the third hypothesis can be accepted. These results are consistent with the previous study conducted by Wu (2006) in which dynamic capabilities have a significant influence as an intervening variable in transforming the resources and competencies of the company to improve firm performance. This finding indicated that environmental dynamism has a significant influence on firm performance, while indicators, such as products or services that are needed or desired by customers, products or services supplied by competitors, technological advances in the industry, and the influence of government regulations, have a direct and significant influence on firm performance so that changes in the dynamic environment have a direct and significant influence on dynamic capabilities of the company.

Environmental dynamism has a significant influence on firm performance. Therefore, from this result, the fourth hypothesis can be accepted. These results are consistent with the previous study conducted by Klassen and McLaughlin (1996) who

found that environmental dynamism had a significant influence on firm performance. They stated that environmental changes and influences are related to the external condition of the company and patterns of dynamic environmental changes that also depend on government policies or regulations that have an influence on improving the financial performance of the company. Mourougane (2012) stated that Small and Medium Enterprises (SMEs) are more affected by the overlapping regulations and uncertainties in the implementation of policies in managing Small and Medium Enterprises in Indonesia. The success of Small and Medium Enterprises (SMEs) also depends on effective interaction between business owners and the regulator or the government, related groups or communities, and the public in which the established coordination can open new markets, reduce bureaucracy and binding rules, and produce competitive advantages and good performance.

Managerial capabilities do not have a significant influence on firm performance. Based on this result, the fifth hypothesis cannot be accepted. This result is not in line with a previous study conducted by Hansen et al. (1999) which stated that managers of the company take the initiative and lead to aligning all company policies and regulating and combining all organizational assets to bring benefits to their company and to have competitive advantages compared to other companies.

The results of this study indicated that the managerial cognition indicators have the lowest average value, while these indicators greatly influence firm performance. Ardiana et al. (2010) in their research found that each variable of competencies consisting of knowledge, skills, and abilities has a significant influence except for the knowledge that has no significant influence. However, if further examined at the same time, those three variables have a significant influence on the performance of Small and Medium Enterprises (SMEs) in Surabaya. From those three variables competency, it turns out that the ability has the most dominant influence on the performance of Small and Medium Enterprises (SMEs) in Surabaya. The results of this study indicated that the owners or managers of Small and Medium Enterprises (SMEs) put more emphasis on managerial human capital. Development of human resources more focuses on education and career development, but less focuses on managing the managerial social capital. The ability to build networks with a community of fellow entrepreneurs or policy-makers will provide access to knowledge or management of services and technology utilization to be more optimal because limited access to information and knowledge from outside will affect the maximum performance of the company. In addition, the results of this study also indicated that the owners or managers of Small and Medium Enterprises (SMEs) lack a strong managerial cognition, the capability to predict what will happen, and up-to-date knowledge and information regarding market conditions including competitive competition and products, product development and cutting-edge technology, opportunities and threats that will occur, and government regulations that must be observed and anticipated. The owners or the managers must continue to sharpen and increase their insight so that they have a sharper vision with a perspective about what they want to achieve in the future through observation and codification of values and

lessons from various events that have been occurred, decisions that have been taken, mistakes that have been made, and environmental situations based on the latest information obtained in which all of them shape managerial perceptions towards a situation.

CONCLUSION

This study is expected to explain the effect of environmental dynamism, managerial capabilities, and dynamic capabilities on firm performance of Small and Medium Enterprises (SMEs). It is also expected to provide benefits and thought contributions to science, Small and Medium Enterprises (SMEs), the government, and other relevant parties both directly and indirectly.

This study found that external factors such as environmental dynamism have a significant impact on firm performance of Small and Medium Enterprises (SMEs) so that the anticipation and management of these external factors are the main consideration and concern for Small and Medium Enterprises (SMEs). Competition and changes, the development of rapid technological advances, and the anticipation and management of government policies must be aware of and must always be updated through the established relation or to actively communicate with related government officials. The managerial capabilities of owners and managers of Small and Medium Enterprises (SMEs) must be improved in anticipating changes in a dynamic environment to maintain good firm performance. Dynamic capabilities as the mediation to face dynamic change situations are urgently needed and to be developed to promote the business. Dynamic capabilities are a new thing in the management of Small and Medium Enterprises (SMEs). The owners or managers of Small and Medium Enterprises (SMEs) are expected to realize and equip themselves by continuously improving their dynamic capabilities to face competitive situations that will be more intensive in the future.

Managerial capabilities have the most impact on dynamic capabilities. The indicators that shape the variables of managerial capabilities consist of managerial human capital, managerial social capital, and managerial cognition. Managerial capabilities are one of the key factors in implementing dynamic capabilities as an intervening variable to improve firm performance. These capabilities must be sharpened and enhanced by owners or managers of Small and Medium Enterprises (SMEs) to keep maintaining the existence of their SMEs in the business field in Indonesia. However, managerial capabilities do not have a significant impact on firm performance indicating that the company must develop the capability of managerial cognition in which the company develops capabilities related to the beliefs or mindset of management such as knowledge or assumptions about things to happen, knowledge of alternatives or options to be chosen, and knowledge of the consequences of each choice taken that will be used as a basis for managerial decision-making.

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