Capabilities and Core Competencies in Achieving Competitive Advantage of Agroforesty-Based School

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Abstract. This research purposes to prove whether a school not standard in the learning process or having unique resources is able to compete with general schools, which are in accordance with national standard of education in Indonesia. The results of this study showed that dynamic capabilities had a positive effect on core competencies in the agroforestry-based school. Dynamic capabilities did not affect competitive advantage in the agroforestry-based school. Core competencies had a positive effect on competitive advantage in the agroforestry-based school. Core competencies mediated the effect of dynamic capabilities on competitive advantage in the agroforestry-based school. Thus, resource capabilities should be able to form core competencies in educational institutions in order to be able to create competitive advantage for graduates of this school.

Keywords: Dynamic Capabilities, Core Competencies, Competitive Advantage

INTRODUCTION

Developments and advances in the field of information technology have caused major changes in various fields of life. This condition encourages educational organizations, especially schools, to adjust to these developments and progress. The main challenge in education development is the improvement in quality and equity of education (Badan Pusat Statistik, 2017). This challenge requires educational organizations to continue to innovate and improve competitive advantage.

To the best of our knowledge, the studies discussing the concept of competitive advantage, which mainly investigates education services, is scarce. Some studies related to it focus only on the university level (Abreu Pederzini, 2018; Al Shobaki & Abu Naser, 2017; Boscor, 2015; Muijs & Rumyantseva, 2014).

It is a prerequisite for anyone to master the concept of strategy before understanding the competitive advantage itself (Abreu Pederzini, 2018). Both innovation and knowledge are essential in attaining a competitive advantage (Hana, 2013). There are two factors that influence competitive advantage of educational organizations: financial and non-financial. From the financial measure perspective, education aid effectively improve quality education (Birchler & Michaelowa, 2016). In the non-financial aspect, innovation and the process of creative development are the requirements for obtaining a competitive advantage. Competitive advantage relates to the original notions and inventive developmental process owned by any entity (Kasasbeh, Harada, & Noor, 2017).

For an organization to possess a competitive advantage, it must have a dynamic capability (Teece, 2018). Dynamic capability ensures that the structure of an organization is adaptive to changing market demands (Girod & Whittington, 2017). The quality of educational institutions must be the concern of all stakeholders. If the quality of educational institutions is poor, the poverty rate in society will not decrease. School principals or managers should, therefore, have dynamic capabilities for utilizing the limited resources in attaining future organizational goals.

Organizations are said to have dynamic capabilities if the organization is able to do some activities including: (1) environmental sensing, the adjustment of company activities with environmental changes; (2) changing and renewal capabilities, including updating the company's operational processes so that they can adjust to environmental changes; (3) technology flexibility, which is that companies must be able to take advantage of technological developments in order to provide benefits to customers; (4) organizational flexibility, which is the organizational structure that is dynamic, adjusts the company's strategy and is always more flexible than its competitors (Handrimurtjahjo & Kuncoro, 2012).

System theory puts forward that any entity runs under the circumstances that it cannot comprehensively fathom (Burisch & Wohlgemuth, 2016). Various studies on dynamic capabilities and competitive advantage have been carried out. Research by (Violinda & Jian, 2016), (Kaur & Mehta, 2017), and (Chukwuemeka & Onuoha, 2018) showed that dynamic capabilities affect competitive advantage. However, research by Olufemi et al. (Ogunkoya, Banjo, & Shobayo, 2014) showed that dynamic capabilities do not affect competitive advantage. Specifically, in order to have competitive advantage, companies should be able to create new ideas that are valuable and different from their competitors (unique) (Ogunkoya et al., 2014). That is, to achieve competitive advantage, companies should have core competencies. Any entity may have numerous competencies and capabilities. However, these cannot be translated into core competencies if they are not well-managed and well-integrated (Gökkaya & Özbağ, 2015).

In business term, The core competencies are sources of organizations' differentiations that enable them (Smith, 2008). In an educational setting, core competencies relate to the innovative teaching processes, namely, learning competency, educational competency, social competency, and technological competency (Zhu, Wang, Cai, & Engels, 2013). In primary education context, student must have core competence of knowledge application. Core competencies of knowledge application including the abilities of knowledge application work planning, solving problems, research data application, improving organization atmosphere, resources development, various circumstances, transforming knowledge into concrete actions; and creating substantial work pieces (Yeh & Hsiao, 2012).

Core competencies are possible to acquire through the supportive transformational leadership, entrepreneurial competence, as well as technical competence (Ng & Kee, 2018). Core competencies become the main foundation of an organization in building competitive advantage. This is consistent with the results of research by (Teguh & Devie, 2013), suggesting that core competencies have a positive effect on competitive advantage. Dynamic capabilities enable organizations to build, integrate, and configure their core competencies (Krzakiewicz & Cyfert, 2017). Furthermore, organizations that are able to effectively identify and implement core competencies can encourage these themselves to achieve competitive advantage (Agha, Alrubaiee,& Jamhour, 2012)

Madrasah Tsanawiah or MTs (Islamic Junior High School) of PAKIS is located in Gunung Lurah Village, Cilongok Subdistrict, Banyumas. The name PAKIS itself means Piety, Achievement, Knowledge, Integrity, and Sincerity. The school is different from conventional schools, where, besides being taught general subjects, the students also receive agroforestry lessons, which is to integrate agriculture with forest areas. Students also learn organic farming, animal husbandry, and entrepreneurship. In addition, the school fee at MTs PAKIS is free. Although the school is relatively unique, it turns out that the local community's interest in a new school model like that of MTs PAKIS is still quite low. This is indicated by the low interest in continuing their study to MTs PAKIS from the nearest elementary schools in Figure 1 below.
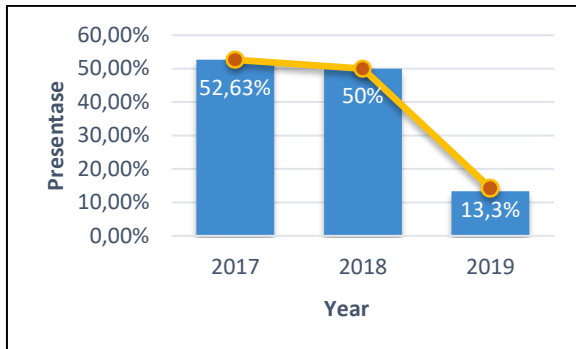
Figure 1. People's Interest in Continuing Their Studies to MTs PAKIS
Source: Student Interview Result (2019)

Figure 1 shows that over the past three years, people's interest in continuing studies in MTs PAKIS has been declining. A significant decrease occurred in 2019, reaching 36.7%. Furthermore, based on the results of interviews with the principal of MTs PAKIS, it was said that 10% of students had withdrawn from school in the 2017/2018 school year. Educational volunteers who are still actively teaching at MTs PAKIS to date are only 5 people. As a result, there is often a shortage of human resources as teachers and inadequate quality of them due to their irrelevant educational backgrounds, so the material taught is not in accordance with the applicable curricula. This shows that MTs PAKIS has a relatively low competitive advantage compared to its rival schools.

Based on the description above, this study aimed at: (1) analyzing the effect of dynamic capabilities on core competencies in the agroforestry-based school; (2) analyzing the effect of core competencies on competitive advantage in the agroforestry-based school; (3) analyzing the effect of dynamic capabilities on competitive advantage in the agroforestry-based school; (4) analyzing whether core competencies mediated the effect of dynamic capabilities on competitive advantage.

METHOD

This study used quantitative approach with the type of associative research aiming at determining the effect of dynamic capabilities (X) and core competencies (M) on competitive advantage (Y). The research method used was census method as all members of the population were respondents in the study. The population were all students of MTs PAKIS and 37 parents.

Data collection techniques in this study were interviews and questionnaires. Interviews

were carried out to find out more information about MTs PAKIS. The questionnaires were used to obtain data on the three variables, i.e., competitive advantage elaborated in five statement items, dynamic capabilities consisting of eight statement items, and core competencies consisting of six statement items. After 30 respondents had been tested, it was known that the five statement items of competitive advantage were declared valid with a reliability coefficient of 0.764 (high), the eight statement items of dynamic capabilities were valid with a reliability coefficient of 0.794 (high), and the six statement items of core competencies were valid with a reliability coefficient of 0.614 (high).

Data analysis technique used in this study was path analysis. Path analysis is an extension of multiple regression used to test the effect of intervening variables (Ghozali, 2016). There were two variables in this study, i.e., exogenous and endogenous variables. The exogenous variable in this study was dynamic capabilities, while the endogenous variables were core competencies and competitive advantage. Path analysis calculations were performed using SPSS 23 software for Windows. Sobel test was used to calculate significance of the mediation variable.

RESULTS AND DISCUSSIONS

Results

This research was conducted in August and September 2019 by giving closed and open questionnaires to 37 respondents consisting of 37.84% male respondents and 62.16% female respondents.

Table 1. Average Respondents' Answers for the Variable of Dynamic Capabilities

No.	Indicator	Average
1	Environmental sensing	4.22
2	Changing & renewal	4.19
3	Technology flexibility	4.05
4	Organizational flexibility	4.22
	Total Average	4.17

Table 1 shows that the dynamic capabilities of MTs PAKIS had an average score of 4.17 (high category). In general, MTs PAKIS has unique and interesting physical and non-physical resources. In addition, MTs PAKIS has an extensive network of partners. The existence of MTs PAKIS also received support from the surrounding community.

Table 2 Average Respondents' Answers for the Variable of Core Competencies

No.	Indicator	Average
1	Valuable	4.26
2	Rare	4.05
3	Inimitable	3.89
4	Non-substitutable	3.97
	Total Average	4.04

Based on Table 2, the core competencies of MTs PAKIS had an average score of 4.04 (high category). The main competency of MTs PAKIS was being able to provide benefits to customers, both academic and non-academic benefits. Learning activities in MTs PAKIS were able to enhance students' knowledge and insight, while activities outside of class hours, such as agroforestry activities (farming and raising livestock), out-of-school visits, and entrepreneurship training were able to foster student skills in various fields.

Table 3. Average Respondents' Answers for Competitive Advantage Variable

No.	Indicator	Average
1	Output Quality	4.05
2	Differentiation	4.19
3	Competitive Fee	4.30
	Total Average	4.18

As seen in table 3, the average competitive advantage score of MTs PAKIS was 4.18 (high category). The main advantage of MTs PAKIS was the relatively low school fee compared to the rival schools in the surrounding environment.

Normality and heteroscedasticity tests were carried out before path analysis. The obtained calculation results of the normality test with Kolmogorov-Smirnov were Kolmogorov-Smirnov value of 0.101 and the value of sig. $p > \alpha$ $(0.200 > 0.05)$, then the residual data were normally distributed.

The obtained calculation results of heteroscedasticity test were the significance value for the variable of dynamic capabilities $p > \alpha$ $(0.473 > 0.05)$ and the significance value for the variable of core competencies $p > \alpha$ $(0.423 > 0.05)$, meaning that the regression model does not contain heteroscedasticity. The results of the path coefficient calculation are shown in Tables 4 and 5 below.

Table 4 Results of Path Analysis of Substructure 1

Variable	Coefficient	Beta	t_{count}	Sig.
Dynamic Capabilities	0.470	0.490	3.325	0.002
Constant	2.108			
R-square	0.240			
F-count	11.055			
Dependent Variable		Core Competencies		

Based on the calculation results of the path analysis of substructure 1 in table 4, the structural equation is obtained as follows:

$$M = 2.108 + 0.490 X + e_1.$$

Table 5 shows that the path coefficient was positive 0.490 and the value of sig. $p < \alpha$ $(0.002 < 0.05)$ indicates that the dynamic capabilities had a positive and significant effect on the core competencies.

Table 5 Results of Path Analysis of Substructure 2

Variable	Coefficient	Beta	t_{hitung}	Sig.
Dynamic Capabilities	0.252	0.240	1.529	0.136
Core Competencies	0.493	0.450	2.872	0.007
Constant	1.062			
R-square	0.365			
F-count	9.792			
Dependent Variable		Competitive Advantage		

Based on the calculation of path analysis of substructure 2 in table 5, the structural equation is obtained as follows:

$$Y = 1.062 + 0.240X + 0.450M + e_2$$

The equation above shows that the path coefficient of the variable of dynamic capabilities was positive 0.240 and the value of sig. $p > \alpha$ $(0.136 > 0.05)$, which means that the dynamic capabilities had a positive but not significant effect on competitive advantage. The path coefficient for the variable of core competencies was positive 0.450 and sig. $p < \alpha$ $(0.007 < 0.05)$, indicating that core competencies had a positive and significant effect on competitive advantage. The final path diagram model in this study is figure 2.
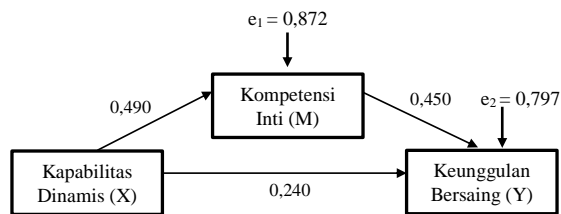
Figure 2. Final Path Chart Model

Furthermore, from the model, the direct and indirect effects between the variable of dynamic capabilities and and that of core competencies on competitive advantage were obtained.

Table 6. Path Analysis Results

Variable	PC	DI	II	Total
X – M	0.490	0.490	-	0.490
X – Y	0.240	0.240	0.490 x 0.450 = 0.221	0.461
M – Y	0.450	0.450	-	0.450

Note: PC (Path Coefficient); DI (Direct Influence); II (Indirect Influence)

Based on the path analysis calculation results on table 5, it was obtained that the coefficient of direct influence of dynamic capabilities on competitive advantage was 0.240, while the coefficient of indirect effect of dynamic capabilities on competitive advantage (through core competencies) was 0.221.

Testing of the significance of mediation variable was done using the Sobel test technique. The calculation result of the Sobel test showed the value of t-$_{count}$> t-$_{table}$ (2.119> 2.030), meaning that the variable of core competencies mediated the relationship between dynamic capabilities and competitive advantage.

Discussion

The variable of core competencies mediated the relationship between dynamic capabilities and competitive advantage. Previous studies have not informed the role of core competency in mediating the effect of dynamic capabilities on competitive advantage. Previous research only explained the effect of dynamic capabilities on competitive advantage, then the effect of core competence on competitive advantage. In this study, core competence is a mediating variable that is able to explain how the influence of dynamic capabilities on competitive advantage. This is the novelty of this research, namely core competency plays a role in mediating

the effect of dynamic capabilities on competitive advantage, especially in educational service products

The Effect of Dynamic Capabilities on Core Competencies

The results showed that dynamic capabilities had a positive effect on competitive advantage in the agroforestry-based school, meaning that the better the dynamic capabilities of a school, the more possible the core competencies they will have. These results are consistent with Krzakiewicz and Cyfert (Krzakiewicz & Cyfert, 2017), suggesting that dynamic capabilities can be used as a basis in reshaping core competencies in accordance with the development of the environment. Educational organizations that have the ability to identify events and phenomena that occur in their environment, constantly renew their capabilities, follow and take advantage of developments in information technology, and have a flexible organizational structure can encourage themselves to organize learning processes that are unique and meaningful / provide benefits (values) both academically and non-academically for their students, so it will be difficult to imitate them and to be replaced them by other schools.

The Effect of Dynamic Capabilities on Competitive Advantage

The results showed that dynamic capabilities had no effect on competitive advantage in the agroforestry-based school. Better dynamic capabilities the organization has does not guarantee the organization to achieve competitive advantage. These results are consistent with the research by (Ogunkoya et al., 2014), suggesting that dynamic capabilities do not affect competitive advantage, and different from the research results by Adiputra and Mandala (Adiputra & Mandala, 2017), suggesting that capabilities has a positive effect on competitive advantage.

The Effect of Core Competencies on Competitive Advantage

The results showed that core competencies influence competitive advantage in the agroforestry-based school, meaning that if the organization has core competencies, it will increasingly enable the organization to achieve competitive advantage. The results of this study

are consistent with research conducted by Nursaid which also suggested that core competencies affect competitive advantage (Nursaid, 2017). As stated by Teguh and Devie (Teguh & Devie, 2013), the core strength of companies can be used as a basis in building competitive advantage. These results are in line with the idea of Agha and Alrubaiee, stating that core competence is a vital concept of the competitive strategy in the hypercompetitive era (Agha, Alrubaiee, & Jamhour, 2012). If an educational organization is able to offer learning activities that are useful, rare (unique), difficult to imitate and to be replaced by competitors, it will enable the organization to achieve competitive advantage, i.e., producing quality graduates, providing services that are different from their competitors, and providing competitive fees.

Core Competencies Mediating the Effect of Dynamic Capabilities on Competitive Advantage

The results showed that core competencies were able to mediate the effect of dynamic capabilities on competitive advantage in the agroforestry-based school. The results of this study are consistent with what Agha et al. (Agha & Alrubaiee, 2012) revealed that dynamic capabilities can then be built so as to enable organizations to have core competencies to achieve sustainable competitive advantage.

CONCLUSIONS

Based on the data analysis and hypothesis testing, the following conclusions can be drawn: (1) dynamic capabilities had a positive effect on core competencies in the agroforestry-based school; (2) dynamic capabilities did not affect competitive advantage in the agroforestry-based school; (3) core competencies had a positive effect on competitive advantage in the agroforestry-based school; and (4) core competencies mediated the effect of dynamic capabilities on competitive advantage in the agroforestry-based school. . In this study, core competence is a mediating variable that is able to explain how the influence of dynamic capabilities on competitive advantage. This is the novelty of this research, namely core competency plays a role in mediating the effect of dynamic capabilities on competitive advantage, especially in educational service products

Some suggestions to be considered by MTs PAKIS are: First, it should maintain the concept of an institution with cost leadership strategy; the strategy that should be implemented is cost leadership by looking for funding sources to keep developing in accordance with the demands of the times. Second, MTs PAKIS should pay attention to the quality of the output to meet the expected standards. Third, MTs PAKIS should pay attention to technological developments and maintain good relationships with partners. Fourth, MTs PAKIS should be able to maintain the values given to its customers according to customer needs.

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