

The Influence of Dynamic Capability and Performance on the Competitiveness of Private Higher Education

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The study of the relationship between dynamic capabilities and competitiveness in the context of private Higher Education (HE) is interesting. Due to the dynamic environment and level of intensive competition, private HE needs to build sustainable competitiveness by increasing its capabilities in order to quickly adjust to environmental changes. This study aims to examine the effect of dynamic capabilities on private HE performance and competitiveness in Indonesia. The sample size consisted of 58 private HEs in the LLDIKTI Region III DKI Jakarta, with 178 respondents consisting of private HE leaders. The collected data was analysed by using the SEM. The results showed that dynamic capabilities affect private HE competitiveness both directly and through mediating organisational performance. In term of implementation, private HE needs to continuously identify changes in the external environment, understand internal capabilities, and reconfigure internal capabilities to improve performance and competitiveness.

Key words: *Dynamic Capability, Performance, Competitiveness, Higher Education.*

Introduction

Globalisation is often associated with dynamic market environment conditions and uncertainties, furthermore these require that firms have the ability to immediately respond to

the actions of competitors. This is important however, considering the possibilities of rapid environmental changes eroding competitive advantage (Alon et al., 2011). This has further led to the focus on building sustainable competitiveness and the higher education (HE) sector is no exception (Kising'u et al., 2016). A rapid transformation has been reported by Kising'u et al. (2016) and Labas et al. (2018) to be highly needed by HE to deal with environmental changes. Therefore, the word “competitiveness” has become a keyword for private HE to survive and compete in the education industry.

Several studies on the contribution of dynamic capabilities in building performance and competitiveness have been found in scientific publications, but there is limited information on the application of this concept in private HE. This study was conducted to enrich previous works of research by identifying the influence of dynamic capabilities on the performance and competitiveness of private HEs in Indonesia. This is necessary considering 96% of the 3171 units of HEs recorded in 2018 were private, thereby leading to increased competition to obtain students.

Literature Review

Competitiveness is one of the fundamental strengths required by organisations to survive competitive markets (Ramoniene and Lanskoronskis, 2011). The concept has been debated among researchers (Stefan, et al., 2016) and no standard definition was found due to the differences in the types of problems faced by organisations, market structures, and the external environment. Porter (1990) and Ambastha and Momaya (2004) described the competitiveness of firms as the ability to compete in certain business environments, while Carmona Olmos (2012) and Stefan, et al. (2016) defined it as the excellent and competitive position expected and achieved by organisations. Furthermore, the concept was observed in detail by Feurer and Chaharbaghi (1994) to be the ability of an organisation to deliver better value, provide a higher return on investment, or maintain a competitive position over competitors.

Most research works conducted on competitiveness recognise the superiority of RBV theory and believe its attributes enable organisations to maintain and develop a competitive advantage (Barney, 1991; Wernerfelt, 1986). According to Banerjee, et al. (2018) and Hongyun, et al. (2019), the use of this approach involves the efficient and effective utilisation of a company's resources to beat the competition in the industry and this means competitiveness is largely determined by the characteristics within the firm. Moreover, an organisation is viewed as a collection of assets and capabilities, therefore, to have a high position in the competitive market, this model focusses on the development or acquisition of valuable resources and capabilities, which are difficult or impossible to imitate by competitors, to improve performance (Akio, 2005; Armstrong and Shimizu, 2007; Barney, 1991; Barney and Hesterly, 2008). This simply means the heterogeneity of the resources and capabilities owned by a

business organisation is the basis of RBV theory (Mahoney, 1995). However, sustainable competitive advantage has been reported to be possible only if there are heterogeneous, highly immobile, valuable, inimitable, rare, and non-substitutable resources (Madhani, 2010; Barney, 1991; Barney and Hesterly, 2008). Resources are said to be valuable if they create strategic value and help firms exploit opportunities or reduce threats (Barney, 1991; Barney and Hesterly, 2008; Wernerfelt, 1986). In addition, they are also expected to be rare or difficult to utilise by competitors in order to be applicable as a tool to develop and execute unique strategies required to stay above the competition in the industry (Barney, 1991, Barney and Hesterly, 2008; Barney and Arian, 2008; Wernerfelt, 1986). These two attributes were reported to be not enough to ensure the effectiveness of resources as a source of sustainable competitive advantage (Bobe and Kober, 2015); it also requires they are difficult to replicate perfectly (Barney, 1991) and ensure there are no other equal strategic substitutes. It is important to note that sustainable competitive advantage is not possible without these attributes (Amit and Schoemaker, 1993; Barney, 1991).

The dynamic capability theory is an extension of the RBV theory, which states that a firm's ability to outperform its competitors depends on certain attributes and these include the resources being valuable, difficult to imitate, rare, and difficult to substitute (Žitkienė and Blusytė, 2015). According to Teece and Pisano (1997), a dynamic capability is defined as the ability to integrate, build, and reconfigure internal and external resources and competencies to cope with rapid changes in the business environment, which is very important in determining firm performance. Furthermore, the concept was explained by Helfat et al. (2007) to be the capability of an organisation to intentionally create, expand, or modify its resources to achieve sustainable competitive advantage in rapidly changing environmental conditions. This means dynamic capabilities are generally inherent in organisational processes and routines and this makes it possible for companies to adapt to changes in the environment by rearranging resources, enabling change and adaptation, and achieving an edge over competitors (Pavlou and El Sawy, 2011). Teece (2007, 2014) discovered three dimensions of capabilities required by a firm to be sustainable despite market and technological changes and they include sensing, seizing, and reconfiguring. Sensing involves a series of entrepreneurial capabilities through the exploration of technological opportunities and markets, listening to customers as well as the evaluation of other elements in the business ecosystem. Seizing includes designing business models to satisfy customers, generate value, and secure access to the needed capital and human resources while reconfiguring capabilities are required when new opportunities are successfully obtained.

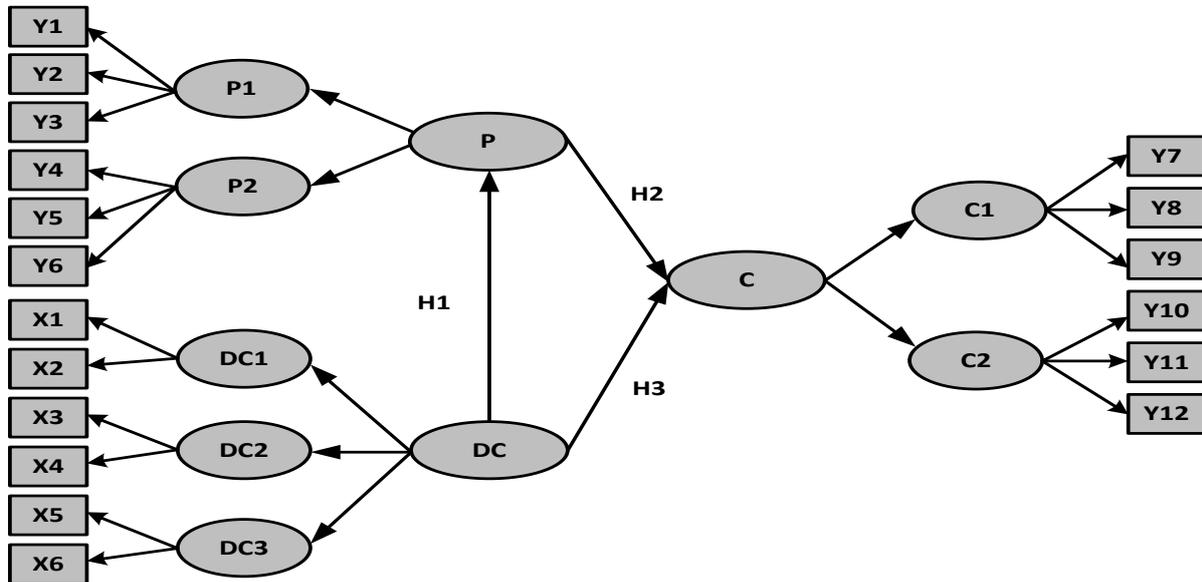
It has been reported firms need to develop dynamic capabilities to survive in a competitive environment (Zhou and Li, 2010). Teece and Pisano (1997) and Eisenhardt and Martin (2000) also argued they need to be equipped with the capability to detect and reconfigure assets, structures and resources to be more sensitive and faster in adjusting to environmental changes,

taking opportunities, and reforming resources to create strategies required to generate value for customers and improve organisational performance. Dynamic capability is a variable with the ability to perform this function by helping firms manage internal and external resources to improve organisational performance and gain higher competitive advantage (Wu, 2007; Wang and Ahmed, 2007). Therefore, the concept is very important for firms to adapt to changing environments by providing the right knowledge and time for the right people and encouraging knowledge sharing to ensure effective performance (Adeniran and Johnston, 2016; Alon et al., 2011; Tseng and Lee, 2014).

In addition to the effect on performance, dynamic capabilities also affect organisational competitiveness. Jiao et al. (2010) discovered the competitiveness in dynamic markets can only be obtained by sensing changes, understanding the consequences, and reconfiguring specific resources and processes to adapt to the environment. Therefore, firms need to renew their resources through a dynamic capability process to sustain competitiveness (Teece et al., 1997; Helfat et al., 2007). A dynamic capability would further help managers in managing and optimising internal and external resources to improve organisational performance and competitiveness (Wu, 2006). This is, therefore, a source of competitive advantage (Barney, 1991; Ambrosini and Bowman, 2009).

This study aimed to examine the direct effect of dynamic capabilities on competitiveness and through the use of performance as a mediating variable. Competitiveness in the ever-changing market was reported to be conducted through sensing of changes, understanding the consequences, and reconfiguring specific resources and processes (Jiao et al., 2010). The use of dynamic capabilities has also been found to increase organisational performance and competitiveness (Wu, 2006). Moreover, the ability of an organisation to align its capabilities with changes in the external environment has an impact on optimising the implementation of concepts and organisational performance (Takahashi, et al., 2017), as well as corporate competitiveness (Pokorná and Cástek, 2013). However, the performance of a firm is seen as a short-term achievement and it is used as a tool to develop a sustainable competitive advantage. Therefore, the structural model for the relationship between dynamic capabilities, performance, and competitiveness is shown in Figure 1. From this framework, the hypotheses formulated are as follows:

Figure 1. Structural Model of Private HE's Competitiveness



1. H₁: Dynamic capability has a positive effect on performance
2. H₂: Higher education performance has a positive effect on competitiveness
3. H₃: Dynamic capability has a positive effect on competitiveness

Research Method

This study is constituted by causal and quantitative research. The analysis unit was the private HE in the LLDIKTI Region III of DKI Jakarta, and the observation unit was the leader of private HE. Data was collected using questionnaires (Likert scale) and non-probability sampling. The sample size consisted of 178 respondents including the rector, dean, head of the study program, and head of quality assurance.

The data was analysed in two steps and these involve the measurement and structural models (Hair et al., 2010). The measurement model was first analysed before the structural model using CFA second order to confirm the reliability and validity of the research data (Hair et al., 2010). The reliability of the scale measuring each dimension was assessed by calculating the Composite Reliability (CR), which according to Bagozzi and Yi (1988) should be more than 0.60 to achieve internal consistency reliability. Standardised loading factor items are required to exceed 0.50 to achieve convergent validity (Hair et al., 2010; Lowry and Gaskin, 2014). The structural model was also analysed in two steps and the first involved testing the partial relationship between the latent variables. The second step involved the use of SEM to test the model as a whole by using a suitability test to determine if the sample covariance matrix is suitable with those of the estimated population and the indicators of the goodness of fit include χ^2 , χ^2/df , p-value, RSMEA, GFI, AGFI, CFI, IFI, NFI, and RFI.



SEM with Lisrel 8.8 software was used to analyse the model concerning the relationship between dynamic capability, performance, and competitiveness. Moreover, due to the latent variable having more than one dimension, the second-order CFA measurement model was used. The competitiveness variable has two dimensions and they include those in a product and those required to sustain a competitive position with three indicators each. Furthermore, the performance variable also has two dimensions including academic and managerial, each of which has three indicator variables, while the dynamic capability variable has three dimensions and they include sensing, seizing, and reconfiguring, each of which has two indicator variables.

Results and Discussion

Based on reliability and validity tests, the data had good reliability and validity. Second order CFA for dynamic capability, performance, and competitiveness variables confirmed the model is fit and had high internal consistency. It also showed that all indicators were valid as its construct measures. Tables 1 present the results in more detail.

Table 1: Second-Order CFA of Latent Variables

Latent variables	Dimensions	Indicators	Standardised factor loading	CR
Dynamic Capability	Sensing (DC1)	-X1	0.73	0.6
		-X2	0.82	
	Seizing (DC2)	-X3	0.74	0.6
		-X4	0.78	
	Reconfiguring (DC3)	-X5	0.78	0.6
		-X6	0.61	
Model fit: $X^2 = 2.58$, $df=6$, $X^2/df=0.46$, $p\text{-value}=0.86$, $RMSEA=0.00$				
Performance	Academic (P1)	-Y1	0.74	0.7
		-Y2	0.54	
		-Y3	0.79	
	Management (P2)	-Y4	0.77	0.7
		-Y5	0.59	
		-Y6	0.76	
Model fit: $X^2 = 3.56$, $df=8$, $X^2/df=0.44$, $p\text{-value}=0.89$, $RMSEA=0.00$				
Competitiveness	Product (C1)	-Y7	0.60	0.7
		-Y8	0.85	
		-Y9	0.78	
	Ability to maintain a competitive position (C2)	-Y10	0.82	0.7
		-Y11	0.73	
		-Y12	0.73	

Model fit: $X^2 = 3.94$, $df=6$, $X^2/df=0.66$, $p\text{-value}=0.68$, $RMSEA=0.00$

The structural model was estimated to validate the proposed conceptual model. The result of the SEM supported the adequacy of the proposed model with the structural model fit of $\chi^2 = 16.63$; $p\text{-value}=0.12 > 0.05$; $GFI=0.97$; $AGFI=0.93$; $CFI=0.99$; $IFI=0.99$; $NFI=0.98$; $RFI=0.97$; $RMSEA=0.054$. The results also showed the model converges well and can be a representation of empirical data structures. Meanwhile, all the proposed hypotheses, H_1 , H_2 , and H_3 were supported. The structural path model is shown in Figure 2 while the results of the hypothesis are reported in Table 2.

Figure 2. Structural Model of the Research Results

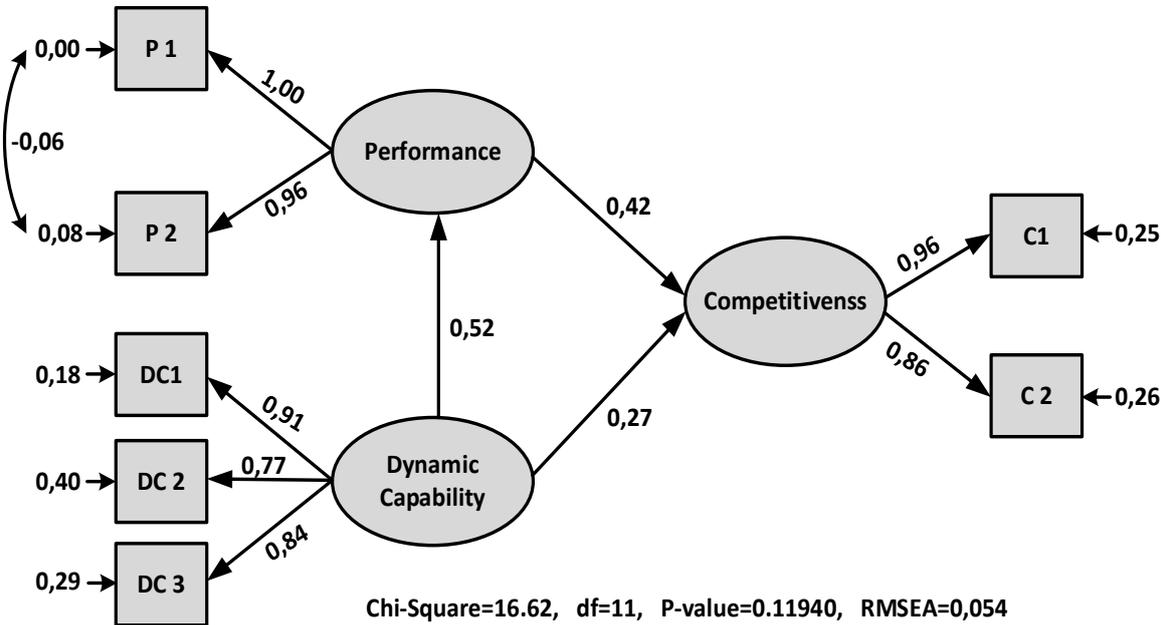


Table 2: Coefficient Values and t-statistic on the Structural Model

No	Path	Coefficient	t-Stat	Conclusion
1	Dynamic Capability → Performance	0.52	7.11	Significant
2	Performance → Competitiveness	0.42	5.03	Significant
3	Dynamic Capability → Competitiveness	0.27	3.11	Significant

The increasingly intensified competition among HE in obtaining students requires that private HE prioritises the development of high and sustainable competitiveness. The changes in the industry environment ultimately require private HE to always adjust internal competencies and this can be achieved through the three steps of dynamic capability which are sensing, seizing, and reconfiguring. The first step is to sense and identify both opportunities and threats from the external environment, as observed in the changes in the interests of high school graduates, needs of graduate users, government regulations, and other strategies for both private and public HE. The second step is to identify the internal organisational activities, programs, services, and facilities to ensure they align with market needs, as well as allocate time to implement new service ideas and existing ones. The third step involves the reconfiguration of the internal workings of the organisation through effective communication between departments to ensure they work in line with goals and objectives in order to realise a shared vision, and also to routinely evaluate the organisation's adaptation to environmental changes.

This study proposed and tested a model to establish the relationship between dynamic capability, performance, and private HEs competitiveness. The first hypothesis developed was on the positive influence of dynamic capabilities on private HEs performance, and the results

showed the existence of a significant and positive influence of dynamic capabilities on private HEs performance. This is in line with the response of most of the respondents that private HEs have always observed both the opportunities and threats in the external environment, continuously identify the internal capabilities, and reconfigure the organisation to adapt to the changing environment. Private HEs management was also reported to be routinely adjusting organisational structure at least every four years, or earlier based on conditions. This means the dynamic capability level has an impact on better performance, both academically and managerially. This is in line with the findings of previous works of research conducted by Wu (2007), Wang and Ahmed (2007), Tseng and Lee (2014), and Hongyun, et al. (2019), which showed dynamic capability has the ability to improve firm performance. In the higher education sector, it is in accordance with the results of Takahashi, et al. (2017) that dynamic capability affects HE organisational performance.

The second hypothesis proposed the positive influence of performance on competitiveness and the results showed the existence of a significant and positive influence of performance on private HEs competitiveness. This means better performance with a focus on both academic and managerial aspects from private HEs would lead to higher competitiveness. It is, however, possible to improve the performance by increasing the ability of lecturers to meet the academic qualifications in accordance with government regulations, provision of lecturers with teaching competencies according to market needs, and the existence of an up-to-date curriculum. This finding is in line with the results of research conducted by Pokorna dan Castel (2013), Hayati and Rukhviyanti (2016), and Soelaksono et al. (2018), that organisational performance has a positive influence on competitiveness.

The third hypothesis was developed to test the positive influence of dynamic capabilities on competitiveness and the results showed the existence of a significant and positive influence of dynamic capabilities on Private HEs competitiveness. This means a higher level of dynamic capability of private HEs increases competitiveness. This result is in line with the findings of the research from Jiao et al. (2010), Teece et al. (1997), Helfat et al. (2007), Wu (2007) and Ambrosini and Bowman (2009).

From the perspective of dynamic capabilities, the results indicated there are significant efforts by private HEs in monitoring the environment, seizing opportunities, reconfiguring resources, integrating and coordinating activities, and efficiently using new administrative and academic knowledge, but at different levels. Moreover, the impact of these efforts is felt on both academic and management performance, which subsequently improved and sustained competitiveness in both the products and ability to sustain the competitive position. It was found that private HEs were generally able to produce graduates with a low waiting period, an increase in the acquisition of research grants for lecturers from the government and those to improve the quality of service from firms in the last three years. Meanwhile, the ability to

sustain a competitive position was shown by an increase in the number of international scientific publications, PhD-educated lecturers, and international partnerships in the last three years.

The success of private HEs in improving or sustaining competitiveness depends on three things and they include input, process, and output. The input is related to the number and quality of student candidates, lecturers, and non-academic staff; processes involve the implementation of "tri dharma" – teaching, researching, and community service, including supporting facilities, and outputs are related to lecturer performance and graduate competencies. In relation to dynamic capability, the management of private HEs needs to routinely conduct sensing, seizing, and reconfiguration. In sensing, the leaders need to sense the interests of prospective students with regard to study programs and expected service quality, market demands on graduate competencies, changes in regulations related to higher education management, and the competitors' strategy on a routine basis and also build a network with stakeholders and optimise marketing activities. Concerning seizing, the leaders need to routinely identify the capabilities of lecturers and non-academic staff, lecture process, lecture and supporting facilities, the marketing strategy conducted so far, technological advances, knowledge, and changes in the concept of service which renders previously effective processes irrelevant for the future. Finally, regarding the reconfiguration, there is a need to routinely adjust the organisational structure, management, teaching methods, and needs. Moreover, competency improvement programs should be conducted for lecturers and non-academic staff on a routine basis to match the needs, development of knowledge and technology, and service quality. Lecture and support facilities should also be evaluated and adjusted to students' expectations and market demands.

Conclusion

Dynamic capability has an important role in enhancing organisational performance and gaining higher competitiveness of private HE. Dynamic capabilities are comprised of capabilities in identifying and exploring customers, competitors and market trends (sensing), capability in identifying the internal environment of private HE organisations (seizing), and capability in restructuring internal capabilities to adapt the external environment (reconfiguring). Organisational performance include academic and managerial performance. In turn, improved performance will increase competitiveness of private HE. Directly, a high level of dynamic capability also be able to increase competitiveness.

This research produced several relevant contributions, both at the conceptual and practical levels. At the conceptual level, it showed the (a) development of dynamic capability, performance and competitiveness constructs for the education service sector has the ability to complement existing constructs which can be used in future research, and (b) evidence of the



role of dynamic capability and performance of Indonesian private HEs in building sustainable competitiveness. As for the practical aspects, some of the results would be useful in organisational management such as the configuration of dynamic capability, performance, and competitiveness and strategic steps in building competitiveness. Further research in the same context is recommended to juxtapose public and private HE, with due consideration that the regulation of HEs in Indonesia has eliminated the dichotomy between the two sections, to verify the consistency of these results in the tested model. Moreover, the indicators can be enriched to make the research results more comprehensive.

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