

THE ROLE OF INOVATION, VALUE CHAIN AND COMPETITIVE ADVANTAGES IN INDONESIAN HIGHER EDUCATION PERFORMANCE

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Abstract

Higher educational package in Indonesia need advancement in educational design and delivery, the educational "supply chain" in Indonesia as a whole and therefore includes relationships with feeder schools, from which students come, and employers, to which graduates go need seriously improvement due to the high competitiveness among higher education. With the high number of high education in Indonesia, moreover in capital city, the performances not fulfilled the criteria of good quality, only few that have been reach good quality in accreditation held by Indonesia Ministry of Education. To improve competitiveness on education industry, management is needed, both internally or externally. The relationship between suppliers, the student, and the higher education itself, must well managed. How to order suppliers partly responsible for education quality, good and long-term relationship with suppliers and student, as well as distribution order educational input from upstream to downstream on time get to the end user. Inovation and supply chain management practices in higher education is the very thing needed for the education industry sector in Indonesia, in in order to improve the competitiveness of industries which will have an impact on higher education performance. This research aim to analyze how competitive Advantages mediating relationship between innovation, value chain and higher education performances. Data collection taken from 166 higher education as samples in quatitative research using partial least square as method in data processing. The result shown that innovation and value chain effect on higher education performances mediated by competitive advantages.

Keyword : Inovation, Competitive Advantages, Higher Education, Value Chain, Indonesian, Performance.

Introduction

Higher education in Indonesia should put their institutions into the a ranked achievement category. Therefore, higher education must willing to participate an international standard of academic quality. In other hand, efforts of building the competitiveness for a university

are an absolute must in order to maintain its existence. Hughes (2013) states that the paradigm shift of higher education in the globalization era should be changed from a “national, analogue, industrial economy” orientation to a “global, digital and information-based” one. Facing these challenges, the universities should enhance their performances both in academics and management. Performances measurement has increasingly pushed a call for accountability in higher education. If the national universities are not able to face the challenges effectively, this institution might not be able to maintain their existence in the community and slowly but surely they will lose their role. In response to these challenges, universities in Indonesia have immersed in the process of changes to increase their effectiveness, efficiency and transparency with the purpose to contribute to the growing and improvement of competitiveness. Lu (2012) uses two-stages structure including cost efficiency and teaching research efficiency’ by a two-stage DEA model based on the additive efficiency decomposition approach for assessing the operating performance of universities.

Meihami and Karimi (2014) reported a similar study but the indicators for the higher education performance are undetailed which are only mentioned terms of financial performance, educational performance and research function for higher education performance. Higher education in Indonesia are starting to realize that to provide cheap input, quality and fast, internal improvements education and service are not enough. The participation of suppliers, higher educational transportation and input network is needed. Awareness of the existence of the cheap education, fast graduation and good quality gave birth to a new concept in the 1990s Supply Chain Management (SCM). Network the company is jointly working for creating and delivering a product it is called end users supply chain or supply chain. These companies include suppliers, distributor, store or retail, as well as the company supporters such as logistics services. Approach which is emphasized in the Supply Chain Management is integrated with the spirit of collaboration. Reinforce the need the power of higher education competitiveness that will give competitive advantage in the presence of education industry.

Conditions in higher education today, the demands of prospective students (and their parents) for the quality of higher education, can also be seen from the hard work of entering state universities through independent pathways (non SMPTN and SBMPTN). In fact, in terms of tuition and enrollment fees, can be several times higher than the non-independent route. The conditions that lead to elitism and the commercialization of education further widen the gap between well-known private universities and ordinary private universities or even marginal ones. Whereas all higher education theories put forward equal rights, opportunities, and treatment (equal) to obtain an education as part of the human rights mentioned in the UN declaration (Verger & Bonal, 2011).

Improving the quality of higher education must be carried out by higher education providers, both higher education organized by the government, the private sector and the community. The quality of education that has been achieved so far is not sufficient for university graduates. This can be proven from the weak competitiveness of Indonesian

university graduates in the international arena (Marthalina, 2018b). Global competitiveness is entering the world of higher education, so to be able to position higher education institutions in line with world universities, various changes and strategies are needed and in increasing professionalism in higher education management (Mirfani et al., 2012). Therefore, it is urgently need to studies by conducting a study to examine the competitive advantage as mediation between innovation, value chain and Indonesian Higher education Performances. It is believed that competitive advantage being a mediating variable may affect the pattern of relationship between innovation, value chain and higher education performance and this should be looked into seriously. It is hoped that the findings of this study will be able to promote the importance of innovation and value chain disclosure as one of the factors contributing to the improvement of higher education performances in Indonesia.

Literature Study

Competitive Advantage

Competitive advantage according to (Goyal, 2001) is a company's ability to achieve economic profit above the profit that can afford won by competitors in the market in that industry same. Companies that have advantages competitive always has the ability in understanding changes in market structure and able to choose effective marketing strategies. Competitive strategies are intended to maintain profitability and position that lasts when facing competition. Competitive advantage develops from value that companies can create for customer or buyer.

Suhong Li (2006) using competitive measurement dimensions advantages in his research include using delivery dependability, innovation product and time to market. Porter (1995: 5) said: "Competition is the core of success or failure of firms. Competition is the core of a company's success or failure. There are two sides caused by competition, namely the success side because it encourages companies to be more dynamic and compete in producing products and provide the best service for their markets, so that competition is seen as a motivating opportunity. While the other side is failure because it will weaken companies that are static, afraid of competition and unable to produce quality products, so competition is a threat to the company. According to Muhandi (2007) competitiveness is a function of operations that is not only oriented internally but also exits externally, namely responding proactively to the target market. The dimensions of a company's competitiveness as stated by Muhandi (2007) by quoting Ward et all (1998) consist of cost, quality, delivery time, and flexibility.

Lindong (2007) defines competitive advantage in higher education in three based on Porter (1985) dimensions: first, cost leadership as a generic positioning strategy whereby a higher education works hard to accomplish the smallest production and extending costs of their service. Low tuition fees, for instance, could indicate that the institution is able to draw bigger amount of students than competitors. Secondly, differentiation is a type of generic positioning strategy whereby a higher education pursues to be special in the

higher education through some dimensions appreciated by students, such as academic pathways, staggered fee payment, unique features of a course and study incentives.

Higher Education Performance

Performance is a work ability indicated by the work. Goyal (2001) put forward the notion of performance as follows: "Performance is: (1) the process or manner of performing, (2) a notable action or achievement, (3) the performing of a player other entertainment". Higher education performance is something produced by a higher education within a certain period with reference to standards set. higher education performance should be is a measurable result and describe an empirical condition. Higher education of various sizes are agreed upon. Higher education performance refers to how well a company is oriented higher education on the market and its financial goals.

Effective performance appraisal system should contain performance indicators, namely: (1) pay attention to every organizational activity and emphasize the customer perspective, (2) assess each activity using performance measurement tools that certify customers, (3) pay attention to all aspects of performance activities comprehensively influencing customers, and (4) provides information in the form of feedback to help members the organization recognizes problems and opportunities to make improvements. Performance assessment contains tasks to measure various organizational level activities so that generate feedback information for carry out organizational improvement. Repair organization implies improvement organizational management which includes: (a) planning improvements, (b) process improvements, and (c) improvement of evaluation. Performance assessment company can be measured by size financial and non-financial. Financial measure to find out the results of actions that have been done in the past and financial measures This is supplemented by non-financial measures about customer satisfaction and cost effectiveness business / internal processes and productivity. After the management is carried out on a business is expected to have such business performance will improve.

Value Chain

A value chain is a model that consists of a collection of activities or specific business activities that occur within a company to design, produce, market, ship and support a product. Value chains can create value and competitive advantage for the company. The analysis is based on efficiency and effectiveness. The value chain consists of a set of main and supporting activities. In the chain general value, supporting activities consist of company infrastructure, management of resources human resources, technological development and efforts to obtain it. While in activity The main consists of inbound logistics, operations, outbound logistics, marketing and sales as well service. Each step taken in a segment will have an overall impact process. So it can be said that all segments are interdependent.

Value Chain Porter

Value Chain Porter (Porter, 1990) is the model used for help analyze specific activities that can create value and competitive advantage for the organization. These activities are divided into 2 types, namely: Main Activities (Primary Activities)

- **Inbound Logistics**, is the activity or activities that are linked by receiving, storing and distributing inputs / raw materials, such as handling raw materials, warehousing, inventory control, vehicle schedules and returns to supplier
- **Operational**, is an activity that is associated with changing inputs or raw materials into the form of final products, such as machining, packaging, assembly, equipment maintenance, testing, printing and other related matters by operating or production process.
- **Outbound Logistics**, is an activity associated with collection, storage and distribution of products to buyers, such as warehousing finished products, material handling, shipping operations, order processes and scheduling.
- **Marketing and sales** (Marketing and Sales), is an activity in persuading or attract buyers to buy, such as advertising, promotions, salespeople, quota and price.

Porter (1990) presents a useful model for understanding competitiveness in a better way. Porter identified four determinants that are necessary to create and sustain competitiveness of firms. These are: 1) Factor conditions: The factor condition includes human resources, physical resources, knowledge resources, capital resources and infrastructure. 2) Demand conditions: Porter stressed the importance of the home market: the home market gives local firms a clearer or earlier picture of buyer needs than foreign rivals can have (p.86). 3) Co-localised and support industries: This gives the advantages of cheap inputs, better co-ordination between steps in the value chain, and access to innovation and upgrading (p.101). 4) Firm strategy, structure and rivalry: Nations or districts can have advantages in having clearer goals, being better organised and by being more competitive due to competition in the home market (p.107).

Value Chain Approach to Higher Education Development

Ruskov & Ruskov (2007) presented an approach to modelling educational processes as a value added chain. They attempt to interpret and compile existing business, governance and education processes reference models and suggest an example, Academic Chain Operation Model (ACOM). They stated that the processes within educational and competence development activities should include all the main educational process: planning, designing, managing and support. There are two major directions for academic processes classification: 1) the main education activities and 2) all the other activities. The activities that are not related directly to the educational process and that do not add value for the students, can be classified as additional. For the normal execution of th educational process it is necessary to plan and perform all supporting activities very well.

So, they decompose the educational processes into following groups: Category, Process Group, Process, and Activity. All of these groups have their own processes. For example, the top level, category, of the Academic Chain Operations Model (ACOM) describes the key issues and the gearing of main processes within the individual units of chains and between them (as networks). Planning, Designing, Managing, and Supporting are the components of the category. Or the next level, process group, describes the sub-processes of the categories. Therefore, the ACOM model enables academic organizations to effectively get knowledge about the processes in their academic value chains.

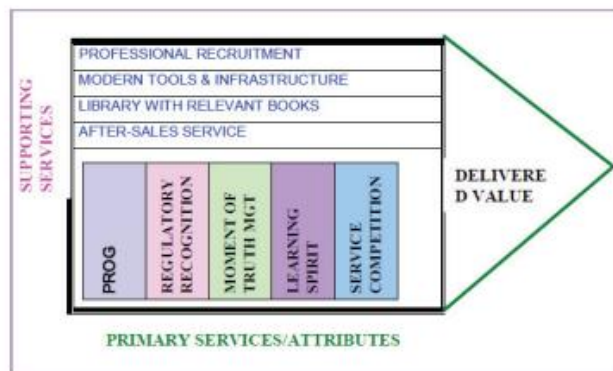


Figure 1. Value Chain in Higher Education

(Source : Makkar, et al, 2008)

Similar view is expressed by Pastakia and Oza (2011), who consider inclusive value chain, as a market based arrangement that provides opportunity to generate livelihoods for the poor through creating value by producing and delivery of quality products and services to the end user/customer. According to Harper (2009), inclusiveness comes from the type of value identification, value creation and value capture but more importantly, from value sharing with small holders or smaller links in the chain. Educational value chain introduced by van der Merwe and Cronje, (2004) as a "graphical tool" that developers may use in re-engineering efforts to identify possible bottlenecks that are likely to occur, as well as providing a route to follow when determining the value added elements by technology. They apply a high-level process model, which is defined as the structure depicting all the primary processes and their relations to accomplish the high-level objectives of the modeling exercise. They noted the processes included in an educational value chain should only include the high-level essential processes necessary to reach a predetermined outcome. With the focus on the outcomes, they used the following steps to determine the value chain. (1) Define the outcome or scope on which the value chain will focus. (2) Identify a requirements elicitation methodology that focuses on the identification of the high-level processes within the application domain. (3) Identify the high-level processes within the application domain. (4) Use the high-level process model

developed to derive the sequence of processes needed, to achieve a predefined outcome.

Innovation

Innovation is generally recognized as key to financial improvement, since it conceivably prompts efficiency and focused increases (Abrunhosa & ESa, 2008). There are a few meanings of development. As per Schumpeter (1983) "development is the business or mechanical use of something new another item, processor strategy for a generation; another market or wellsprings of supply; a new type of business or monetary association. The European Commission characterizes development as the recharging and expansion of the scope of items and administrations what's more, the related markets; the foundation of new techniques of generation, supply and appropriation; the presentation of changes in the board, work association, and the working conditions and aptitudes of the work power (CEC, 1995). In the basic terms, advancement includes the abuse of new thoughts. Advancement is a term that may allude to process, a property, or a final product. There is a distinction among advancement and creation. Innovation should not be likened to creation; a development may not really lead on to development.

This differentiation is clarified by Freeman (1982) at the point when he notes that: "innovation is a thought, a sketch or model for another or improved gadget, item, procedure or framework" though "advancement in the financial sense is cultivated as it were with the primary business exchange including the new item, procedure, framework or gadget.." Various meanings of advancement remembered for the writing. "Innovation has been reliably characterized as the appropriation of thought or conduct that is new to the association (Bon and Mustafa, 2013). In this way, development doesn't only result from R&D; it is a multidimensional procedure, with various sources, more often than not originating from complex collaborations among people, association and the institutional setting.

Research Framework

Recent studies on micro and small enterprise value chains confirm that, firm-level upgrading is a key component of inclusive development strategy for increasing the participation, contribution, and benefits of higher education in value chains (Ernst 2004; Kula et al. 2005; Dunn et al. 2006; Lusby and Derks 2006; Bloom et al. 2007). Authors conclude that, upgrading create opportunities for higher education, when lead begin to specialise away from education. There are several factors are associated with higher education innovation and upgrading. It is found that, upgrading is facilitated by encouraging strong vertical linkages to student, fostering effective horizontal relationships among the producers and by improving producers' access to information about costs and benefits throughout the value chain (Bloom et al. 2007; Dolan et al. 1999).

Recent study by Ponte et al. (2014) show that, chain governance, types of value chain drivers and the quality of domestic regulation as main factors for upgrading. By innovating, organizations react to dynamic market changes and to create or maintain their

competitiveness. It can be said that "Innovation is an almost obligatory survival strategy" (Drucker, 1999). The organization that successfully created a competitive advantage is a company that is able to create innovation and creativity through an effective and planned innovation process (Gupta and Macdaniel, 2002). Therefore, ways or are needed new strategies for creating and producing products new or make improvements (tangible or intangible) by increasing creative abilities from company employees or members of the organization. With the development of innovation in terms of focus macro research by experts, there are two different approaches regarding the concept of innovation they put forward as the approach taken by the company in creating innovation. First approach is "innovation as a process", where innovation defined with more emphasis on the innovation process in organizations and social processes that produce innovation as individual creativity, organizational culture, environmental conditions (environment context), and socioeconomic factors (social and economic factors) (Xu et al, 2009; Castro et al, 2011).

Competitive advantage and organisational performance are two different constructs with an apparently complex relationship (Maa, 2000). Overall, though, studies have shown a significant relationship between competitive advantage and performance (Maa, 2000; Fahy, 2000; Wang and Lo, 2003; Wiklund and Shepherd, 2003; Morgan et al., 2004). As mentioned earlier, despite competitive advantage and performance constructs are often used interchangeably (Porter, 1985), they have real conceptual differences from one to another and have a causal relationship that leads the former to the latter. According to Newbert (2008), competitive advantage is generally conceptualised as the implementation of a strategy not currently being implemented by other firms that facilitates the reduction of costs, the exploitation of market opportunities and neutralisation of competitive threats (Barney, 1991). Performance is generally conceptualised as the rents a firm accrues as a result of the implementation of its strategies (Rumelt et al., 1994).

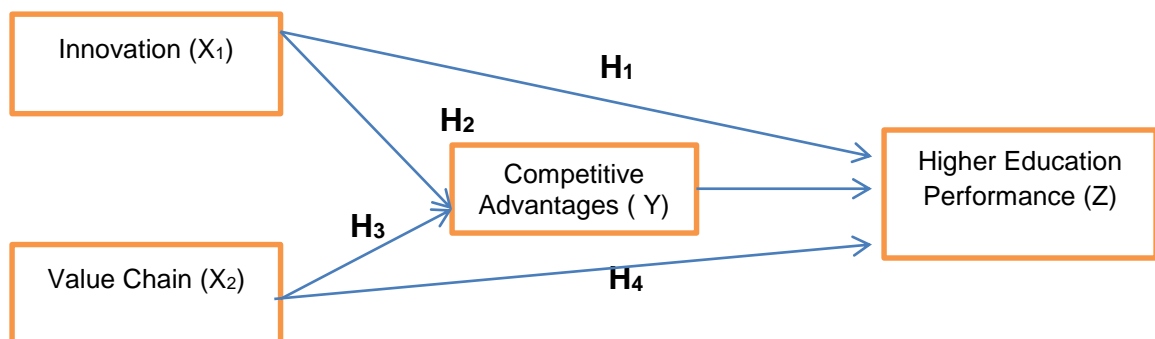


Figure 2. Research Framework

Based on the framework chart above, a hypothesis can be drawn as follows:

H₁: There is an effect of using innovation to Higher Education Performance

H₂: There is an effect of using innovation to Higher Education Performance Through Competitive Advantages

H₃: There is an effect of using value chain to Higher Education Performance Through Competitive Advantages

H₄ : There is an effect of using value chain to Higher Education Performance

Methodology

The populations in this study were 283 Higher education in DKI Jakarta Province. The sampling method uses Slovin technique with alpha 5%, so that the research sample is 166 Higher Education. This is descriptive explorative research with quatitative approach, data analyzing use path analysis. The method of data collection in this study is to use a questionnaire. The questionnaire was used as a data collection tool in this study by using a list of statements, and the research instruments were directed according to the variables used in the research model. With the equation as follows:

$$Y = a + b_1X_1 \quad (1)$$

$$Z = a + b_2X_2 \quad (2)$$

$$Y = a + b_3X_3 \quad (3)$$

$$Z = a + b_4X_4 \quad (4)$$

Result and Discussion

The Innovation variable (X_1) and Value Chain (X_2) has an indirect relationship to the Performance variable (Z), namely through the Competitiveness variable (Y) or the total effect of variable $X_{1,2}$ on variable Z indirectly is b_4 ($b_1 \times b_3$) and b_5 ($b_2 \times b_3$). To find out how much the regression coefficient of each variable, can be seen in Table 1 below:

Table 1. Regression Coefficient Value

Model	Unstandardized		t	Sig.
	Coefficients			
	B	Std. Error		
Innovation → Performance (b_1)	0,467	0,090	4,764	0,000
Value Chain → Performance (b_2)	0,795	0,103	3,785	0,000
Competitiveness → Performance (b_3)	0,576	0,075	6,035	0,000

(Source: Data processed by researchers, 2021)

From table 1 above, it can be concluded that:

- The direct effect of $X_1 \rightarrow Z = b_1 = 0.467$
- The direct effect of $X_2 \rightarrow Z = b_2 = 0.795$
- The direct effect of $Y \rightarrow Z = b_3 = 0.576$
- Indirect effect $X_1 \rightarrow Y \rightarrow Z = b_4 = b_1 \times b_3 = 0.467 \times 0.576 = 0.264$
- Indirect effect $X_2 \rightarrow Y \rightarrow Z = b_5 = b_2 \times b_3 = 0.795 \times 0.576 = 0.457$

The first hypothesis (H_1) states that the probability value (Sig.) Relationship of the Innovation to Performance is 0,000 smaller than the significance level of 5% (0.05). So, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. That is, the relationship between the Innovation has a positive and significant effect on Performance with a regression coefficient of 0.467. The results of this research are in line with the research conducted by Nurjanah (2015) Johnne and Rowntree, 1991; Barker, Metcalf and Connel, 1990; Pratten, 1991; Berry and Taggart, 1994; Dodgson, 1991 and Xu et all (2006) which shows that the Innovation has a positive and significant effect on Performance. The remarks in the first segment clarify that while the the writing we have inspected doesn't enable us to recognize segments as far as Higher Education R&D power nor even the level of development, there absolutely is generous research proof that quantities of Higher Education in an assortment of divisions do take part in imaginative exercises; and that these exercises are probably going to be a significant the determinant of their prosperity (See Rothwell, 1991; Lawton-Smith et al, 1991; SBRC, 1992; Joyce, Seaman and Woods, 1994; Keeble, 1992).

The fourth hypothesis (H_4) states that the probability value (Sig.) Relationship of the Value Chain to Performance is 0,000 smaller than the significance level of 5% (0.05). So, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. That is, the relationship between the Value Chain has a positive and significant effect on Performance with a regression coefficient of 0.795. The results of this hypothesis are in line with the research conducted by Lee (1993) and Philpott (1995) which shows that the Value Chain has a positive and significant effect on Performance.

Conclusion

Certainly, the exactly based, calculated examinations contributed by a few creators have added incredibly to the comprehension of the connection between advancement and Higher Education execution. (See for instance Goss, 1991; The story, 1994; Story, 1993; Oakey, 1990; Oakey, 1991; Johnson, 1990; Rothwell, 1989; Rothwell and Dodgson, 1993; Monck et al, 1988; Smallbone et al, 1993 and Pratten, 1991.) Be that as it may, in a large number of the exact and auxiliary examinations audited here, the diagnostic treatment of advancement inside the Higher education setting is disappointing hypothetically and methodologically. These investigations for the most part don't embark to quantify completely, and afterward to interface, imaginative information sources (watched either legitimately or as a substitute) to creative yields, nor to investigate if the

imaginative exertion has had a quantifiable sway on firm execution (yield, work, sends out, advertise share and so on).

In Opinion with Thompson et al., (2005) that performance can be achieved in many ways, including development of product innovation, technical superiority, product quality and reliability, comprehensive customer service, and unique competitive capabilities. The innovation has additionally gotten extensive consideration as having a vital job in verifying supportable upper hand. Innovation can be characterized as anything new or novel about the manner in which an organization works or the items it produces (Hill and Jones, 2001). Thus, innovation includes advances in the products, production processes, management systems, organizational structures, and strategies developed by a firm. Accomplishing competitive advantages starts with a push to create further authoritative mastery in playing out certain intensely basic worth chain exercises, purposely endeavoring to outfit those abilities that fortify the company's technique and aggressiveness (Prajogo, McDermott, and Goh, 2008). It can be concluded that the activities in the value chain are key in achieving competitive advantage.

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