CUSTOMER VALUE CREATION IN VOCATIONAL HIGHER EDUCATION: CASE IN INDONESIA

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Abstract: Vocational higher education has developed as a service that cannot avoid marketisation. One of the higher education marketing tasks is creating the value of its customers. However, the creation of customer value in vocational tertiary education has not been touched by researchers. This study aims to determine the concept and measurement of the dimensions of customer value creation in vocational higher education. In addition, it tries to measure the validity and reliability of its dimensions. This study uses analyzing the concept of customer value creation in several journals to then be associated with value creation in vocational higher education. As for the respondents were academic citizens from each institution consisting of leaders, lecturers, heads of study programs, education staff and students taken proportionally. This research has a total of 876 respondents from 30 institutions and uses a structured questionnaire based on a 7-point scale. The results showed that the creation of customer value in vocational tertiary education can be explained by all of its dimensions. Although not all indicators can explain the dimensions of customer value creation. Indicators that can explain customer value creation are changes in knowledge, general skills, special skills, learning suitability that consider student conditions and objectivity of assessment. The model is quite good with moderate predictive relevance (Q2). This research is limited to vocational higher education in the provinces of West Java and Banten. There is very little data coming from companies that use graduates. The originality of this research is customer value creation in vocational higher education consisting of three dimensions, namely learning outcomes, learning strategies, and learning evaluation.

Keywords: Learning Outcomes, Learning Strategies, Learning Evaluation

INTRODUCTION

The increasing sectoral competition in higher education nowadays encourages universities to consider marketing principles as an effort to attract and retain students (Durkin, McKenna, & Cummins, 2012). Increasing the marketisation of higher education, at the domestic and global level, competes to attract domestic and foreign students (Naidoo & Wu, 2014).

One of the most important tasks in marketing is creating and communicating value to customers to drive their satisfaction, loyalty, and profitability (Kumar, Reinartz, Distinguished, & Management, 2016). Specifically, companies need to understand customer expectations and turn those expectations into value deliverables in the form of product profits (product performance values) and relational profits (O'Cass & Ngo, 2012) .

Vocational tertiary education in Indonesia is a tertiary diploma or applied undergraduate program which aims to produce competent graduates with qualifications that match the challenges faced. The organizers of vocational higher education as regulated in the Permenristekdikti 44 of 2015 can take the form of universities, institutes, high schools, polytechnics, and academies. Meanwhile, to carry out educational programs up to the level of applied S2 and applied S3 can be done by universities, institutes, high schools, and polytechnics. In line with changes in tertiary education policies in Indonesia such as the flexibility of state universities in governance and independent decision making and the right to manage funds independently, transparently and accountably, implying that management of tertiary education is almost the same as business operations. The consequence of that is competition between universities will increase. As such, it is very natural for higher education services to start with managers' understanding of how to create value that their customers expect. However, there is not much literature that discusses customer value creation in vocational higher education. This void is tried to be explored by combining the marketing perspective and the perspective of vocational higher education.

This paper will begin with a literature review. Followed by methods, results, discussion and closing remarks.

LITERATURE REVIEW

Customer value creation behavior is defined as the customer's active behavior in value creation while using physical, virtual, and mental processes or products provided by the company. (Grönroos & Voima, 2013). Customer value creation concentrates on what customers do with services and products within their scope of life. This value creation takes into account the activities of other parties only indirectly, as interpreted by the customer. Whereas co-creation sees value creation activities in the network (Gummerus, 2013). Meanwhile values can only be created with and determined by users (Chan, Ip, & Cho, 2010). Thus, customers are always value cocreators. This awareness is in line with the postmodernist point of view that customers participate to adjust their own world. From some of the notions of CVC above, there are two things that distinguish the concept of CVC between traditional concepts and the concept of co-creation. First is value creation. In the traditional concept, the value of a product is made by the company itself and then delivered to

customers in the form of finished goods that are ready for consumption. While in the concept of cocreation, value is created jointly between the company and the customer. Second, it is about value bases. In the traditional concept, the product is the main value base, meaning that customer satisfaction is determined from the various features that exist in the product. Whereas in co-creation, the primary value base actually comes from the process of interaction between the company and its customers.

The customer participation behavior consists of information sharing, responsible behavior and voluntary in-role feedback (Nguyen Hau & Thuy, 2016). While the value creation process according to information seeking, information sharing, responsible behavior, personal interaction, citizenship behavior, feedback, advocacy, helping, and tolerance (Vega-Vazquez, Revilla-Camacho, & Cossío-Silva, 2013).

The main customers of vocational higher education include industrial companies or businesses that are graduates (Vauterin, Linnanen, & Marttila, 2011) (Vauterin, Linnanen, & Michelsen, 2013) In addition, vocational higher education customers are students (Alnawas, 2015) (Woodall, Hiller, & Resnick, 2014).

In the context of higher education in Indonesia, the creation of customer value for both industry and students has been facilitated by the government by issuing Presidential Regulation No. 8 of 2012 concerning the Indonesian National Qualification Framework (INQF). INQF is a competency qualification selection framework that can juxtapose, equalize and integrate education and work training as well as work experience in the context of providing work competence recognition in accordance with the work structure in various sectors. And every level of qualification at INQF has equality with learning outcomes (LO) generated through education, job training and work experience (Budiarto et al., 2018). Here there is an agreement between the education / training service provider with industry and employment as a graduate user customer. Reciprocal relationships between organizations and consumers can include the needs and desires of consumers to create and deliver services / products for them (Prahalad & Ramaswamy, 2004). From the perspective of educational institutions, the information conveyed by the industry sector and the world of work regarding the profile of graduates in the future is very important to be formulated for the development of learning offered.

Vocational education is a form of education that is prepared for individual competencies on a job (Finch et al., 2016). While the graduate competency standard is a minimum criterion regarding the qualifications of graduates' abilities which includes attitudes, knowledge, and skills expressed in the LO formulation of graduates (Budiarto et al., 2018). And to obtain LO graduates, it is necessary to have standard processes that include: the characteristics of the learning process; learning process planning; implementation of the learning process; and student learning load. Learning strategies (LS) used by students improve their academic performance. In addition, no less important is needed an assessment of learning which consists of an assessment of the process and learning outcomes. (Chen, Chiu, & Wang, 2015). Tan & Laswad (2015) propose to design learning assessments to ensure students are not biased towards certain learning styles that will increase their validity and fairness. Assessment techniques can be in the form of portfolios (Lam, 2017) formative

and summative assessments (Dixson & Worrell, 2016) both in the form of written and oral tests.

Based on the foregoing thoughts, the dimensions proposed for CVC in vocational higher education in this study are: 1) LO consisting of attitudes, knowledge, general skills and special skills; 2) LS that considers the characteristics of students, lecturers and learning resources; 3) Learning Assessment (LA) is learning process and outcomes using instrument rubrics and portfolios.

In the context of vocational higher education, CVC is the ability of higher education institutions to understand customer expectations, namely students as prospective graduates and the industrial world as users of graduates. And change these expectations into new value offers that are more promising efficiently both physical, virtual and mental processes.

RESEARCH METHODS

This research focuses on the development of three dimensions measured through 10 question items using a 7-point Likert scale.

As for the respondents representing 30 institution are important elements of the polytechnic consisting of the director or deputy director of lecturers, education staff, heads of study programs and students. Data is taken as one shoot. In detail the questionnaires obtained were 305 questionnaires from lecturers, 49 questionnaires from education staff, 104 questionnaires from the head of the study program, 43 questionnaires from leaders and 375 questionnaires from students. and 375 student respondents. The total number reached 876 questionnaires. This amount is in accordance with the proportion of each group of respondents and can be considered to represent the elements of each institution

This study uses a quantitative approach based on surveys with structured questionnaires and uses statistical analysis techniques based on variants. Using a structured questionnaire based on a 7-point Likert scale. And in accordance with the objectives and the research model, partial least square (PLS) was used, namely to test the causal relationship between latent variables and relatively small sample sizes (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). Furthermore, the data is processed with the help of Smart PLS 3.0.

To test the validity and reliability of data related to the variables above, it is done by looking at alpha cronbach, composite reliability and Average Variance Extracted (AVE) using the Smart PLS 3.0 professional series.

Tabel 1: Operationalization of Research Variables

Dimensions	Indicator	unit of measure	Code
LO	Attitude	The level of attitude change	cv1
	Knowledge,	The level of knowledge received from the beginning of the lecture to the present	cv2
	General Skills	General skill level	cv3
	Special Skills	Level of ability on specific skills according to the study program	cv4
LS	learning considers the characteristics of students / lecturers	The level of suitability of the method and content of learning with the characteristics of students / lecturers	cv5
		The level of suitability of the learning	cv6

		model and technology with the characteristics of students / lecturers	
	learning considers learning resources	The level of suitability of the content and learning media with existing learning resources such as books, modules etc.	cv7
LA	Assessment of vocational learning processes and outcomes using a portfolio	The level of use of student work (portfolio) in the assessment of the process and learning outcomes	cv8
	Assessment of vocational learning processes and outcomes using rubrics	The level of use of the written test or oral test in the assessment process and learning outcomes	cv9
		The level of objectivity of the assessment given to students	cv10

FINDINGS AND DISCUSSION
Results

The Outer Model has a AVE value> 0.5 in all models. And has a composite reliability value> 0.7 and Cronbach's Alpha> 0.7. Thus, all dimensions that make up the variable are valid and reliable.

Tabel 2: Validity and Realibility

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
LO	0.816	0.816	0.891	0.731
LS	1.000	1.000	1.000	1.000
LA	1.000	1.000	1.000	1.000
CVC	0.789	0.787	0.856	0.543

1. Customer value creation can be explained by the dimensions of learning achievement, learning strategies and learning assessment shown by discriminant validity above 0.7
2. There are only five valid indicators that are indicated by outer loading, each above 0.6
3. This research model has moderate predictive relevance (Q2) with values above 0.02 and below 0.35. This shows that the research model is quite good.

Referring to table 2 above, it appears that all dimensions in this model are valid and reliable. However, as table 3 shows indicators that meet outer loadings (> 0.6), only 5 indicators are recommended, namely three indicators in the LO Dimension, namely: Level of knowledge received from the beginning of the lecture to the present), Level of ability in general skills, Level ability to special skills according to the study program); One indicator at the CB is the suitability of the method and content of learning with student / lecturer characteristics; And one indicator in the Learning Evaluation Dimension is the level of objectivity of the assessment given to students.

Tabel 3: Outer Loadings

	LO	LA	LS	CVC
cv2	0.858			
cv2				0.767
cv3	0.850			
cv3				0.764
cv4	0.857			
cv4				0.773
cv5			1.000	
cv5				0.684
cv10		1.000		
cv10				0.691

The Smart PLS discriminant validity output shows that all dimensions have values above 0.7. This shows that the construct variable manifest is not correlated with height.

In evaluating structural models using PLS it can be seen from R-Square. Changes in R-Square values can explain the effect of certain exogenous latent variables on endogenous latent variables. R-Square value according to Hair et al. (2011) is 0.75 it can be concluded that the model is strong, the model is 0.50 and the model is 0.25 weak. Based on PLS output, the R-Square LO dimension shows a strong model, while the dimensions of LS and LA approach the medium model

Tabel 4. R-SQUARE & Q2 Predicitive Relevance

	R Square	Q2 Predictive Relevance
LO	0.808	0.242
LA	0.478	0.143
LS	0.468	0.140

When viewed from the display of the Q2 Predictive Relevance structural model, this model of Customer Value Creation shows the predictive relevance. Thus the change in Q2 can have a relative impact on the structural model. In general, this structural model is good and has moderate predictive relevance

Discussion

The results found that CVC was built by three dimensions, namely learning outcomes, strategic learning, learning assessment. This finding is new in vocational higher education.

1. Learning Outcomes

   Learning outcomes are explained by three indicators namely the achievement of knowledge, general skills and special skills. In general, students gain enrichment of knowledge and skills, especially those related to the chosen study program. This achievement was achieved by students because of the structured teaching and learning process in the theory class and in the laboratory as well as the existence of independent learning designed by each lecturer. But this finding negates the change in attitude. Whereas ideally learning can actually change the three domains of student potential,

namely cognitive, affective and psychomotor (Feezel, 1985); (Rovai, Wighting, Baker, & Grooms, 2009); (Budiarto et al., 2018). The absence of attitude change indicators is evident from the number of complaints from companies against the attitude of graduates who are less professional. However, in some institutions efforts have been made for soft skills training to hone positive attitudes and mental readiness of students' work. The obstacles to meet the learning outcomes that come from students include low learning motivation. The obstacle of lecturers is low pedagogical competence. As well as obstacles from the environment include the limitations of learning technology.
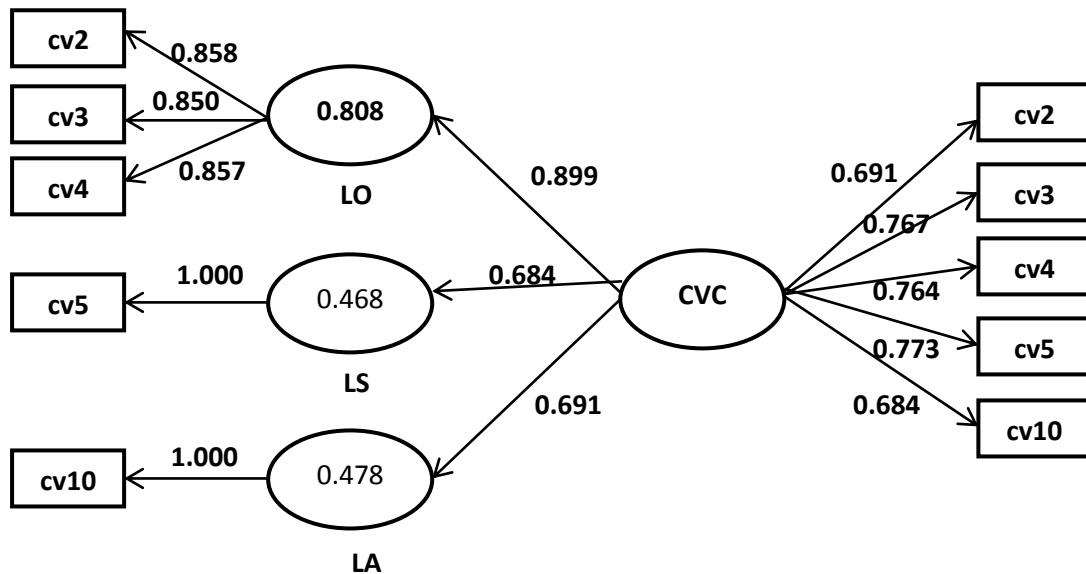

Figure 1: Structural Model

2. Learning Strategies

Learning strategies are only explained by one indicator, namely learning that takes into account the characteristics of students. Empirically found that lecturers pay attention to the abilities of students individually or in groups. In this regard management of time and effort, as well as complex cognitive strategy use were positive predictors of academic performance (Neroni, Meijs, Gijselaers, Kirschner, & de Groot, 2019). But it is unfortunate not to show the suitability of content and media as well as the suitability of learning models and technologies. Though content, media, models and technology are important domains of LS. This finding is different from research (McKnight et al., 2016) found that technology serves a transformative role in learning, provides efficiency for educators and students, makes homework examinations and homework assessments faster and easier. In addition technology helps teachers restructure their time to focus more on instructional planning and delivery. But in some institutions there are already developing LS by utilizing digital technology. While the obstacle is the financial limitations for the procurement and maintenance of learning technology.

3. Learning Assesment

      Learning assessment is explained by one indicator only, the objectivity assessment indicators. Lecturers 'assessment of students' knowledge and skills is conducted with honesty without any subjective interventions involved. To support this, several institutions have conducted assessments through a computerized assessment system. However, it was found that portfolio assessment indicators as well as summative and formative assessments were not significant. This can be seen where in general the institution has not made the portfolio as a valuation technique. Whereas summative and formative assessments are generally conducted in a less structured way. In addition, the test instrument was not designed with good validity and strong reliability. In some institutions it is contained by an internal quality assurance unit in the assessment of learning. So that formative and summative assessments are relatively measured and good.

      As for things that cause the invalidity of the other five indicators, among others, there are different perceptions between the groups of respondents with each other in providing an assessment of the indicators and dimensions stated. As stated above, there were five groups of respondents in this study, namely leaders, lecturers, heads of study programs, education staff, and students

4. Implications

      Vocational higher education institutions in an effort to strengthen customer value creation need to reform to design and organize learning activities in soft skills and attitudes, adapt learning models and technologies, align learning content and media, use portfolio and measure measurable test instruments with validity and reliability. Education managers generally still prioritize learning outcomes.

      This study has limitations on the balance of internal and external respondents. And especially those from graduate user companies. So in the future be prepared to also focus on exploring them.

CONCLUSION AND SUGGESTION

      What stands out from this study is that CVC in vocational tertiary education can be explained by all its dimensions LO, LS and LA. LO can be explained by three indicators namely knowledge, general skills, special skills according to the study program. LS can be explained by indicators of the suitability of the method and content of learning with the characteristics of students / lecturers. Whereas LA can be explained by the objectivity of the assessment given to students. The implications of this finding encourage institutions to pay attention and make improvements on several things, namely changes in attitudes, learning content, learning methods, learning models and technologies as well as formative and summative assessments.

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