

Arranging the Reliable and Valid Assessment's Instrument for Business Model Canvas Comprehension

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Abstract

Business Model Canvas (BMC) is a Business Model nowadays it is considered important to be mastered by students in entrepreneurship courses as a starting point to plunge into the world of entrepreneurship because in BMC a framework is explained in a simple way to present the elements contained in a business model. Although considered important, it is very difficult to find an assessment instrument for this aspect. Even if there is, it is not a valid and reliable instrument. This article discusses the design of assessment instruments for BMCs at the College Level. There are 9 aspects of assessment used by the author according to Alexander Osterwalder in his book entitled Business Model Generation which consists of 9 blocks of activity areas to map strategies to build strong businesses, consisting of Customers Segment, Value proposition, Customer Relationship, Channel, Revenue Stream, Key Resource, Key Activities, Key Partnership, and Cost Structure. To produce a quality assessment instrument, the authors tested the validity and reliability of the instrument. The current study authors involve expert entrepreneurship to examine the structure and substance of the assessment, also, the authors tested the instrument as a statistical test. This instrument is used to assess students' understanding of concepts in BMC. Based on the validity of experts Entrepreneurship and statistical analysis shows that aspects of assessment are appropriate to be used to test the ability to understand BMC concepts.

Keywords

Assessment of instruments, Quality, Business Models Canvas, Customers Segment, Customer Relationship, Channel, Revenue Stream.

1. Introduction

Business Model Canvas (BMC) is a Business Model that is currently considered important for students to master in entrepreneurship courses. BMC was first introduced by Alexander Osterwalder in his book entitled *Business Model Generation*. BMC is a new method in formulating business concepts that are simpler than making ordinary business plans (Osterwalder et al., 2010).

Mastery of BMC is expected to be the initial provision of students in entrepreneurship, because entrepreneurship is one way to work and pursue careers for life in the future. By entrepreneurship can open jobs, and also can help the government in reducing unemployment. As data from Sakernas as of February 2018, there are 6.87 million open unemployment data or 5.13% (Kurniawan, 2018). Please note that the number of entrepreneurs in Indonesia is only 1.56 percent. Even though the ideal minimum number of entrepreneurs in a country is 2 percent of the total population (Santoso et al., 2016).

In the current era to start initial /entrepreneur *startup* a successful, not only have good ideas and products, but the right business model planning is needed and systematic. The results of the study say that the design of a business model is an entrepreneurial competency to create sustainable value (Mishra et al., 2015), also the development of a business model for *startups* or early entrepreneurs is the most effective factor in entrepreneurship (Cho et al., 2017). In entrepreneurship courses in Higher Education the output produced at the end of the lecture is a *business plan*. In this study the author recommends a business plan prepared by Alexander Osterwalder (Oetomo et al., 2019). This is in line with the research of Jackson, et al., Who said that BMC is very appropriate to be delivered in entrepreneurship courses (Jackson et al., 2015). And BMC can support entrepreneurial learning especially identification of business opportunities (Winkler, 2011). Therefore, in the entrepreneurship course, students are expected to have a conceptual understanding of BMC. This is because in the BMC a framework is explained in a simple way to present important elements contained in a business model.

2. Literature review

The *Business Model Canvas* (BMC) consisting of nine block area of business activity, which aims to map out a strategy to build a strong business (Osterwalder et al., 2010), which consists of 9 blocks models:

- *Customers Segment*, the first when want to open a business must determine who will be served. Set to serve one or more segments. Determining this segment will determine other components in the business model. Segmentation is the activity of dividing markets into different groups of buyers, where each group has the same characteristics. Consumer market segmentation can be based on geographical, demographic, psychographic and consumer behavior.
- *Value Proposition*, the benefits offered by our business in the market segment served. This value proposition will affect the selected customer segment or vice versa.
- *Channels*, is a means to convey value proposition to customers segment served. The channel functions in several stages, from customer awareness to after-sales services.
- *Revenue Stream*, this component is considered the most vital. Generally organizations get income from customers. Although there are some organizations that obtain income not from direct customers.
- *Customers Relationship*, this component is a way of how an organization maintains relationships with its customers.
- *Key Activities*, this component is the main activity of the organization to create a *value proposition*.
- *Key Resources*, is a resource belonging to our business that is used to realize the value proposition. These resources are usually in the form of HR, technology, equipment, channels and brands.
- *Key Partnership*, is a resource that is used to realize the value proposition, but this resource is not our business. The use of key partnerships can be in the form of outsourcing, joint ventures, joint operations or strategic alliances
- *Cost structure*, is the cost composition used to operate the organization to realize the *value proposition* that will be given to customers. *Cost Structure* An efficient is the key to the profit that an organization will obtain.
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The advantage when implementing BMC in preparation *business plan* is because BMC can be used for all types of business models. Another advantage is that BMC will accelerate knowing the overall strengths and weaknesses in the business plan that we compile, the process of analyzing needs and profits is done quickly, BMC can also map businesses to find out the weaknesses since early and understand the strength of business from the right perspective and mapping systematically business that can then be used for decision making and strategic management development in business.

As for how to use BMC first by building consumer relations so that our consumers do not run to competitors. Second, increasing sales

This is expected to reach the sales target. Third, face competitors. No less important because when BMC has been run we will build a solid business to face competitors. Fourth, ensure the business is running. This is because often there is confusion about starting and running a business, at BMC will include anyone who will later support the business that we will run and need. Fifth, having a business system aims to make business more effective and can produce maximum even though we are not routinely in our business.

While understanding is a key word in learning because it is a mental process and the transformation of science. Understanding is characterized by someone in articulating something through expressing ideas, perspectives, solutions and products that are ready to be contemplated, reviewed, criticized and used by others (Dunlop et al., 1996). Understanding is also defined as the process of thinking and learning, because to go towards understanding it needs to be followed by learning and thinking. Understanding is the ability to understand a level higher than knowledge (Krathwohl et al., 2009). Another opinion states that understanding in education is making a connection between ideas, facts or procedures (Koehler et al., 1992). So understanding in learning is a level of ability that expects someone to be able to understand the meaning or concept, situation and facts or procedures that he knows. While the concept is a system of units that represent a number of objects that have the same characteristics (Winkel, 2000).

From the description above it can be concluded that understanding concepts is the ability to obtain meaning from an abstract idea that can be used to group and classify things object. Understanding includes the cognitive domain (C2) in *Bloom's taxonomy*, which is to construct the meaning of learning material, including what the learners say, write and draw (Arends, 2013). Cognitive processes in this category include:

1. Interpreting, this occurs when students can change information from one form to another.
2. For example, this occurs when students can provide examples of general concepts or principles. Modeling involves the process of identifying the basic features of a general concept or principle.
3. Classifying, this occurs when students know that something such as an example belongs to a certain category (concept or principle). Classifying involves cognitive processes that complement the process of modeling.
4. Summarizing, this happens when students express a sentence that represents the information received or applies a theme. Summarizing involves the process of making a summary of information.
5. Concluding, this occurs when students can abstract a concept or principle that explains these examples by looking at the characteristics of each example and most importantly by drawing a connection between these characteristics. Summarizing involves cognitive processes comparing all examples.
6. Comparing, this involves the process of detecting similarities and differences between two or more objects, events, ideas, problems or situations. Comparing includes the search for one-on-one correspondence between elements and patterns of an object, event or other idea.
7. Explaining, this happens when students can create and use a causal model in a system. This model can be derived from theory or based on the results of research or experience.

Understanding the concepts from the above explanation that if students in entrepreneurship courses can interpret, exemplify, classify, summarize, summarize, compare and explain *Business Model Canvas* (BMC) which consists of 9 blocks of business activity areas so that students have the initial provision in moving entrepreneurship.

3. Data analysis

3.1 Instrument design of the tests and assessment's

Tests help researchers determine the results of an experimental treatment based on the position of a variable (Salkind, 2016). Tests for understanding BMC concepts are made by researchers by developing BMC concept assessment rubrics derived from *Business Model Generation* Alexander's book Osterwalder which consists of 9 blocks of business activity areas, namely: *Customers Segment, Value proposition, Customer Relationship, Channel, Revenue Stream, Key Resource, Key Activities, Key Partnership, and Cost Structure*.

The guideline for assessment instruments in measuring the understanding of the concept of BMC with a score of each aspect of assessment is a maximum of 3 and minimum 1. Determination of the final value of accumulation of each aspect of evaluation is at least 9 and 27, as presented in the table below:

Table 1. Instrument Understanding Concept Assessment BMC

No	Aspect of Rating	Deskripsi	Score
1	<i>Customer Segments</i>	Determine the segmentation or target of product sales completely and precisely starting from age, social status and income	3
		Determine the segmentation or target of product sales in full but incorrect starting from age, social status and income	2
		Cannot determine the segmentation or target of product sales	1
2	<i>Value Proposals</i>	Determine the value of the product and the benefits of the product offered in full and innovative	3
		Determine the value of the product and the benefits of the product that is offered in full but less innovative	2
		Cannot determine the value more than the product g offered	1
3	<i>Channel</i>	Determine where the customer can get the product so that the value offered will be accepted by consumers in complete and detailed	3
		Determine where the customer can get the product so that the value offered will be acceptable to consumers with complete but less detailed	2
		Can not determine where customer can get product	1
4	<i>Customer Relationship</i>	Determine how to establish relationships with consumers and they know products that are sold in full and affordable easily	3
		Determine how to establish relationships with consumers and they know products that are sold in full but consumers cannot reach easily	2
		No can determine how to establish relationships with consumers	1
5	<i>Revenue Stream</i>	to determine where the sources of income that can be obtained and paid for by the consumer of an innovative range of products offered	3
		to determine where sources of revenue to be obtained and paid for by consumers but not innovative in it	2
		Cannot determine where sources of income	1
6	<i>Key Resource</i>	Determine the resources needed to run a business physically, intellectually, human, financially in full	3
		Determine the resources needed to run business both physical, intellectual, human, financial but incomplete	2
		Cannot determine the required resources	1
7	<i>Key activities</i>	Determine the key activities that can be carried out, so that the value of the products produced consists of production, problem solving and platforms / network in detail	3
		Determine key activities that can be done, so that the realization of the values possessed by the product produced, consists of production, problem solving and platform / network is less detailed so as to inhibit production	2
		Can not determine key activities that can be done	1
8	<i>Key Partnership</i>	Determines account n or other parties that support the	3

		running of a complete business consisting of non competitors, partnerships, suppliers and joint ventures	
		Determine partners or other parties that support the operation of the business but are incomplete both in non competitors, partnerships, suppliers and joint ventures	2
		Cannot determine partners or other parties that support the running of the business	1
9	<i>Cost Structure</i>	Determines the costs incurred to carry out all ongoing business activities, both driven by costs and driven by value so that production can be fully maximized	3
		Determine costs incurred to carry out all ongoing business activities, but incomplete both driven by costs and driven by value so that production cannot be maximized	2
		Cannot determine the costs incurred to carry out all ongoing business activities	1

3.2 Testing instruments

Before the instrument is used to collect research data, the instrument must have good quality in measuring the ability of the research subject. Instrument must be reliable, true and can be accounted for (valid) and reliable. An instrument is said to be valid if it has the ability to measure the subject of research properly and carefully. While the instrument is said to be reliable if it has the consistency of the measurement results, relatively unchanged even if tested on different situations and times. In this instrument content validity is carried out, calculating the degree of validity and reliability.

3.2.1 Content Validity Test Instrument Understanding the Concept of BMC

Content validity is done to determine the suitability of the instrument with the objectives and material taught. Content validity has been done with experts namely Prof. Dr. Ery Tri Djatmika Rudijanto WW, MA, M.Sc as Deputy Director of Postgraduate of Malang State University as expert *entrepreneurship* well as and Dr. Suryono Hadi Elfahmi, an entrepreneur and postgraduate lecturer at Merdeka University in Malang and other validations from entrepreneurship lecturers in Darul Ulum Lamongan Islamic University, mother Nisaul Barokati, S.Pd, M.Pd. In general, the results of validation carried out by experts stated that the instrument was appropriate with learning objectives, the instrument includes all aspects of assessment, but in learning the order of indicators needs to be adjusted in the delivery to students. After confirming to the learning objectives and aspects of assessment, the instrument is considered to have fulfilled the requirements as a valid measuring instrument.

4.3.2 Degree of Reliability and Validity of Test Instruments Understanding of BMC Concepts

This measurement is done to determine the degree of reliability and validity of BMC concept understanding instruments. To test the reliability and validity of BMC concept understanding test instruments have been carried out to the test class, namely the 7th semester students of Lamul Darul Ulum Islamic University who had received entrepreneurship courses in the previous semester 5. In this test involving 30 students by answering test questions as many as 9 aspects of understanding the BMC concept.

Reliability and validity tests were analyzed with the help of SPSS 22. Reliability and validity included 9 aspects of understanding BMC concepts namely *Customer Segments, Value Propositions, Channels, Customer Relationship, Revenue Stream, Key Resources, Key Activities, Key Partnership, and Cost Structure*. The results of the data analysis instrument reliability test understanding of concepts BMC ditunjukkan in Table 2 below:

Table 2. The reliability Test Output Test Concept Training BMC

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.886	.889	9

data analysis technique for the reliability of instrument use approach *Cronbach's Alpha*. According to Arikunto (2008: 75), the interpretation of instrument reliability is based on the magnitude of the value of *Cronbach's Alpha* which is between 0.80 to 1.00 = very strong, between 0.60 to 0.80 = strong, between 0.40 to 0.60 = enough strong, between 0.20 to 0.40 = low and between 0.00 and 0.20 = very low.

Based on the reliability test results on 9 aspects of understanding the BMC concept, the value of *Cronbach's Alpha* with a significant level of 0.05 was 0.886. This value indicates that the instrument has a very strong ability to be a measuring instrument of research.

The next step is to test the validity of the instrument, data analysis techniques for instrument validity using the approach *Correlate Item-Total Correlation*. This analysis is by correlating each item score with the total score and making corrections to the overestimated correlation coefficient. The results of the instrument validity test data analysis are shown in the following:

Table 3. Output Test Validity of Understanding Concept Concepts BMC

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Customer Segment	17.63	11,689	.637	.875
Value Proposition	.827 .861	12,144		17.17
Channel	11,168 .732 .865			17.73
Customer Relationship	17.70	11 941	.709	.867
Revenue_Stream	13,197 .514 .883			17.10
Key Resource	17:17	12 902	.595	.877
Key Activities	.572 .879	13,068		18.03
Key Partnership	17:20	12 993	.569	.879
Cost Structure	17.60	11,490	.657	.873

According to Azwar, the research instrument is said to be valid if the value of the *Correlate Item-Total Correlation* is > 0.30 . (Azwar, 2015). Based on the results of the validity test it is known that the correlation value of each aspect of the understanding test of the concept of BMC has a *Correlate Item-Total Correlation* value above 0.30 means that the test instrument is declared valid. In addition, if the value is compared with the r table value at a significance of 0.05 with a 2-tailed test the r table value is 0.3061. Based on the r value of the table, know that the value of *Correlate Item-Total Correlation* $>$ r value of the table, meaning that the test instrument is declared valid of *Correlate Item-Total Correlation* $>$ r value of the table, meaning that the test instrument is declared valid.

4. Study results, summary and contribution

There are 9 blocks of business activity areas in Business Model Canvas (BMC), namely: Customer Segment, Value proposition, Customer Relationship, Channel, Revenue Stream, Key Resource, Key Activities, Key Partnership, and Cost Structure according to Alexander Osterwalder in his book *Bussiness Model Generation*. What according to

Entrepreneurship experts is very feasible to use to measure student readiness (Business Plan) in starting entrepreneurship.

While statistical analysis is known that the data is reliable and valid. But in classroom learning, suggestions from the experts in the delivery order are: Value Propositions, Key Activities, Key Resources, Key Partnerships, Customer Relationship, Channels, Customers Segments, Cost Structures and Revenue Stream but this does not have a reliable level and validity.

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Biographies

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