The Influence of Risk Perception on Business Model Innovation

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Abstract
Entrepreneurship in Indonesia is believed to be poorly developed compared to other Asian countries. Many efforts have been done to foster the entrepreneurial spirit, particularly the ways to change the mindset of young people that when they graduate from universities, seeking for jobs is not the only option. They can also be entrepreneurs. The lack of students' interest in the business and entrepreneurship is influenced by the perception of risk in business model innovation. Risk perception is the evaluation of people's decision making that is associated with a particular scenario. This study aims to empirically examine the effect of risk perception on business model innovation and measure the influence level of risk perception on business model innovation. This analysis uses the independent variable; the perception of risk. The dependent variable is business model innovation. The researchers set some criteria to choose some respondents such as the active status of students at Faculty of Entrepreneurship, Garut University. The reason for choosing the entrepreneurship students because they have learned more about entrepreneurial procedures so that they have a better understanding of risk perceptions of business model innovation. Researchers used a causal research design on 30 respondents. Data were collected by distributing online questionnaires via e-mail and analyzed using SPSS 25 software. The statistical method used simple linear regression analysis, with hypothesis testing the t-statistic test. The results of this study indicate that risk perception has a significantly positive effect on business model innovation. This research has an impact for business actors to continue to consider risk perceptions because it has an influence on business model innovation.

Keywords: Business Model Innovation; Entrepreneurship Education; High Education; Risk Perception; Student

1. Introduction

The development of entrepreneurship in Indonesia is currently still very low when compared to other Asian countries. In developed countries in Europe and America, a new entrepreneur is born every ten minutes. This growth brings tremendous economic improvement to the nations. A nation will much likely be prosperous if there are at least 2% entrepreneurs of the population (Lisarah et al., 2021). The lack of interest of business and entrepreneurship among college graduates is unfortunate. There have been a variety of programs to foster the entrepreneurial interest among the youth, most importantly by changing their mindset towards careers, from job seekers to start-up business entrepreneurs. This issue is a challenge for schools and universities as the institution that generates graduates. Graduates of schools and universities are still reluctant to go directly to become entrepreneurs (Tetep et al., 2022).

Students' interest in entrepreneurship cannot be separated from the influence of the internal factors. Interest is a source of motivation that encourages a person to do whatever they want to do when they are free to choose. Interest is not permanent, but temporary or changeable. Interest in entrepreneurship must be cultivated early among students. Interest is a tendency to feel attentive and like some things or activities. Interest in something is learned first, affects subsequent learning and affects subsequent interests. Forming courage in other aspects encouraged by educators in educational institutions that provide practical and interesting subjects might arouse students' interest in entrepreneurship (Lisarah et al., 2021).
Figure 1: Entrepreneurs Data Based by Education

Based on Figure 1, the data of entrepreneurs based on the last level of education released in February 2022. College students' interest in entrepreneurship is lower than high school graduates. Only 28% of business owners are bachelor graduates. In starting a business, an entrepreneur needs to design a plan. To design a business plan, many ideas emerge to be applied in a business model strategy. In a business context, the principle is how to turn an idea into a business in a fast and efficient way. Therefore, business model innovation simplifies complex business realities into basic elements that are easy to create. Business model innovation (BMI) as part of the business model concept continues to evolve over time (Chesbrough, 2007).

The development of the business world in the current era of globalization has made a relatively strict competition among the entrepreneurs to attract consumers in order to make a profit. Businesses today are dealing with fierce competition. Every entrepreneur is demanded to be more creative and proactive while running their business because the competition can be very easily created, so one must have a brilliant and sophisticated rationale in expressing his ideas (Mahmoud et al., 2020). Therefore, the process of business model innovation is considered risky because it contains various ambiguous and/or uncertain steps. Risk perception as a decision-maker's evaluation of the risk associated with a particular scenario (Mary-Joan et al., 2019). Risk perception greatly affects the level of trust. The smaller the risk perception of an individual, the greater the level of trust, and vice versa (Pontoh et al., 2022).

Risk perception will also influence the type of learning that entrepreneurs prefer, and will impact the business model innovation process. Entrepreneurs' risk perception is defined as the entrepreneur's assessment of the risks inherent in a situation. When a new business model is being conceptualized, entrepreneurs will feel the uncertainty of the situation and environment. Entrepreneurs with different risk perceptions may adopt different types of learning, which may have different effects on business model innovation (Zhao et al., 2020). Based on the description above, the authors are interested in conducting research with the title "The Effect of Risk Perception on Business Model Innovation".

2. Literature Review
2.1. Risk Perception
The concept of entrepreneurial risk perception includes the assessment of risk decision-making, which affects entrepreneurial behaviors. This includes individual assessments and estimation of the probability of the risk level and control, such as, in preparing the entrepreneurship and the belief of such forecasts (Wardana et al., 2020). Risk perception is one of the characteristics of risk takers and is one of the mental functions that interact in the hazard analysis and decision-making of risk takers (Mary-Joan et al., 2019). Risk perception is the risk perceived by consumers related to all uncertainties and consequences a product or service. The more capable the consumers are to cope with the uncertainty and consequences of the product or service, the lower the risk perception of the product will be in the minds of the consumers. On the contrary, if the consumers are unable to anticipate the uncertainties and consequences generated by these products and services, it will result in a higher risk perception of these products in the minds of the consumers (Shafira & Yasri, 2021).

Risk perception is a cognitive and perceptual characteristic of individuals; it varies among individuals. Entrepreneurs' risk perception is important because it impacts entrepreneurs' decisions and behaviors. Risk perception affects the extent to which entrepreneurial vigilance promotes exploratory learning and exploitative learning. This has an effect on the possibility of increasing entrepreneurial vigilance towards business model innovation. Based on the characteristics of these two different types of learning, entrepreneurs' risk perception will have different impacts on the future outcomes (Zhao et al., 2020). Exploratory learning helps entrepreneurs acquire different and new knowledge, but has a high degree of uncertainty and associated costs. When entrepreneurs' risk perception is low,
entrepreneurs believe that the environment is favorable to make changes (Zhao et al., 2020). Dealing with an approach recognized by entrepreneurial vigilance, entrepreneurs will consider more of these to be feasible for the achievement of business model innovation. Under these circumstances, if entrepreneurs adopt exploratory learning, which emphasizes learning by generating variety, they will facilitate innovation and lead to breakthroughs in the long term. In this way, entrepreneurs who have low risk perception are more likely to adopt exploratory learning to achieve success. However, in cases where entrepreneurs have a much higher risk perception, they will perceive the environment as turbulent, hostile, and inhospitable. In this case, it is more likely that entrepreneurs will experience failure and losses. With the threat of uncertainty and significant costs, exploratory learning will be a burden for entrepreneurs who perceive high risk. Therefore, entrepreneurs are often less likely to use exploratory learning to achieve business model innovation capabilities. As entrepreneurs' risk perception increases, the likelihood of adopting exploratory learning decreases.

Exploitative learning helps entrepreneurs develop their ability to be excel at utilizing their prior knowledge. It is controllable and the investment return period is shorter. Entrepreneurs with low risk perception might consider that the probability of success is high (Hamda et al., 2020). In this situation, entrepreneurs are less willing to use exploitative learning. Since exploitative learning is closely built on the existing knowledge base, it will limit the growth and performance of the venture in the long term. However, entrepreneurs who perceive high risk in their environment will believe that the probability of failure is higher. Dealing with an approach recognized by entrepreneurial vigilance, entrepreneurs believe that they may suffer economic losses, so they tend to take conservative actions. Through exploitative learning, entrepreneurs experience lower costs and receive reliable revenues and profits. Thus, entrepreneurs are more likely to adopt exploratory learning to achieve business model innovation when their risk perception is high. As entrepreneurs' risk perception increases, the likelihood of adopting exploitative learning also increases.

Risk perception can be defined as the uncertainty faced by consumers when they are unable to see the possibilities that will occur as a result of the purchase decision made. In other words, the risk perception is not able to estimate the long-term benefits, losses or profits, inconvenience, or answer whether the product is able to provide the expected performance. The high risk perceived by consumers allegedly causes a trust crisis of consumers in purchasing that leads to lower purchasing decisions. Risk perception may also be interpreted as an assessment made by consumers of all possibilities with the consequences or impacts caused Van Lange Paul et al., (2015). The dimensions that can be used to measure risk perception for business actors are: 1) Financial risk, financial losses that must be borne by consumers when making a purchase. 2) Privacy risk, misuse of consumer identity. 3) Social risk, consumer concerns such as what other people think about purchasing a product. 4) Delivery risk, the safety of the product when it is delivered to the consumer. 5) Time risk, the time sacrifice required to search for the product (Dai, 2007).

2.2. Business Model Innovation

Business model innovation is the art of increasing profits and value creation by making simultaneous and mutually supportive changes to both the organization's value proposition towards customers and its underlying operating model (Chesbrough, 2007). At the value proposition level, these changes can address the choice of target segments, product or service offerings, and revenue models. At the operating model level, the focus is on how to drive profitability, competitive advantage, and value creation through these decisions on how to deliver the value proposition.

The different types of general configurations of business model innovation are composed of: 1) Startup entrepreneurship; The current business model is not available, and the business model is relatively new. 2) Business model transformation; The current business model is not transformed into a business model yet. 3) Business model diversification; The current business model remains in its place and an additional business model is created. 4) Business model acquisition; Additional business models are identified acquired, and integrated (Chesbrough, 2007).

To design a business model innovation, it is necessary to have a Business Model Canvas (BMC). BMC is one of the tools created to help companies estimate what the business is or will be like in the future more (Leih et al., 2015). BMC approach is used to increase value creation for a business, both in the form of industry and MSMEs, the results of which can provide a good framework for clarifying the creation of value propositions in the market. (Mas'ud & Wahid, 2022). The Business Model Canvas was first developed by Alexander Osterwalder and Yves Pigneur, BMC allows business owners or decision makers to view the business from the aspects available on the canvas so that it is easier to analyze or even modify these aspects to be used as a basis for formulating a business model.

The Canvas Business Model is divided into 9 Business Aspects which include: 1) Customer segments, in order to meet customer satisfaction, companies group customers into several different segments based on similar needs, similar behavior, and others. Therefore, business actors must first recognize who the customers or potential consumers are that we are targeting for the products we will create. 2) Value proposition, value proposition or superior value is the reason that makes customers switch from one company to another. Some elements that contribute
to the formation of superior value are Newness, Performance, Customization, Getting the Job Done, Design, Brand / Status, Price, Cost Reduction, Risk Reduction, Accessibility, Convenience / Usability. 3) Channel, in the BMC concept, the channel is a container to deliver the products/services to the target market. In order to function optimally, channels need to be designed by considering aspects of effectiveness and efficiency. The channel not only functions as a communication but also hands in the product/service to consumers until the promise of superior value is truly satisfying and meets customer expectations. In simple terms, the channel can be divided into two, namely having its own channel or belonging to a partner (someone else). 4) Customer relationship, building relationships with customers aims to get new customers (acquisition), retain new customers (retention), and offer old and new products or services to old customers (upselling). There are various types of relationships that can be built with customers, namely personal assistance, dedicated personal assistance, self-service, automated service, communities, co-creation. 5) Revenue streams, sources of income are useful for entrepreneurs to design the revenue streams that we will receive later. There are two types of revenue streams or revenue sources that we can design, namely transaction revenue generated from one-time customer payments and recurring revenue. Recurring revenue is generated from ongoing payments to either provide superior value to customers or provide them with after-sales support. In addition, entrepreneurs can think of ways to get other sources of income by selling assets, usage fees, subscription fees, rent, licenses, brokerage services, commission fees and advertising. 6) Key resources, every business needs key resources. Key resources are resources that enable the organization to carry out the main activities that will help entrepreneurs offer superior value, reach markets, build relationships with market segments, and generate revenue. These key resources can be physical (technology, machinery or equipment), financial, intellectual, or human. 7) Key activities, the main activities indicate that the operational activities that must be carried out by business owners in realizing a superior product/service in accordance with the targeted market segment. Broadly speaking, we recognize three main types of activities that are generally carried out by companies, namely production operations, service operations, platforms and networks. 8) Key partners, we must realize that our business will not be realized by our own efforts. We need to collaborate and partner with companies or people who will support our business to move forward. The most important thing in building partnerships is to know each of the motivations of partner companies and ourselves. Of course, the things that need to be considered here are the cooperation agreement contract before starting a business and how to resolve if there is a dispute. 9) Cost structure, the cost structure that applies in general in an accounting system is fixed costs and variable costs. A correct understanding of the two costs must absolutely be considered for business actors. This will help in preparing financial statements (balance sheet, income statement and cash flow) for business actors. Of course, a basic understanding of accounting needs to be known for business actors (Massepe, 2017).

Analysis of the dimensions of success of business model innovation in accordance with company conditions consists of; 1) Long-term Perspective, this is company planning by considering a long-term perspective. 2) Business Strategy, is the ability of entrepreneurs/companies to analyze the company's external and internal environment, formulate strategies, implement plans designed to achieve company goals, and evaluate to get feedback in formulating future strategies. The strategy in question is a more measurable and systematic planning step that has its own differences and characteristics in terms of products or services produced. 3) Influential Enthusiasts, the success of this factor illustrates the support of certain parties who contribute to the company such as business partners or suppliers. 4) Cooperation, the success factor of cooperation refers to the activities of network actors who support each other as they work towards achieving various long-term plans. Cooperation is a situation characterized when several parties work together to achieve mutually beneficial goals. Effective cooperation will be able to build good relationships between interested parties. 5) Entrepreneurial Skills and Experience, skills encompass the notion of competence, attributes, and the ability to do things well and are closely related to knowledge, expertise, and abilities. 6) A Secure Market, this factor points to the importance of a customer base that will agree to an interdependent producer-customer relationship. Such a relationship can build the trust needed to sign long-term contracts (Leih et al., 2015).

3. Materials and Methods
3.1. Materials
This study uses a causal research design. Causal research is a study to prove the extent of the relationship between two or more variables. A causal relationship is a relationship that shows causes and effects. In this study, there are independent (affecting) and dependent (affected) variables (Sari, 2019). This study explains the effect of risk perception on business model innovation. Hypothesis is a temporary conjecture that must be tested through scientific research (Rosalina & Wardhani, 2020). Hypothesis development or basic assumption is a temporary answer to a problem that is still presumptive, because it must be tested. Thus, the hypotheses in this study are:

Ho: Perceived risk has no a significant effect on business model innovation.
Ha: Perceived risk has a significant effect on business model innovation
3.2. Methods

To obtain an overview of the influence of the two variables, researchers used data collection techniques in the form of surveys with causal associative research types. Survey is an investigation in order to obtain facts from existing symptoms and seek factual information, either about social, economic, or political institutions of a group or an area. (Terrell, 2012).

Researchers collected data by distributing questionnaires online via e-mail. Questionnaire is a data collection technique conducted by giving a set of questions or written statements to respondents to answer. The Likert scale is used to measure the attitudes, opinions and perceptions of a person or group of people about social phenomena. The Likert scale used in this study is 1 – 5 scale to obtain specific answers of the respondents, whether it tends to agree or disagree. Therefore, the results of the respondent’s answers are expected to be more relevant (Rahmawati & Tridayanti, 2020). The data was analyzed using the Statistical Product and Service Solution (SPSS) software 25 version. The statistical method used simple linear regression analysis, with t statistical test hypothesis testing.

Population is a generalization area consisting of objects / subjects that have certain qualities and characteristics (Zaqi & Pradini, 2022). The population of this study are entrepreneurs with special criteria as an active student at the Faculty of Entrepreneurship, Universitas Garut. The sample is part of the number and characteristics possessed by the population. This sample was taken as it was not possible to study all members of the consumer population (Zaqi & Pradini, 2022). This sample was determined using the formula stated by Terrell that if the population is above 100, the researcher may take a sample of 10-15% or 20-25% (Muhsin, 2019). If the population is 150 students and only 20% is taken. Then, based on the calculation, the resulting sample is 30 people. In this study, the researcher used 30 samples.

The data analysis used includes simple linear regression analysis, correlation coefficient analysis (R), coefficient of determination (Adjusted R2) and partial analysis (t test) with the help of SPSS software version 25. This analysis is used to determine whether there is a positive influence of the independent variable (X) on the dependent variable (Y) with the following regression model (Daniel, 2019).

\[ Y = a + bX + e \]

Description:
Y: Dependent Variable
a: Constant
b: Regression coefficient
X: Risk Perception
Y: Business Innovation Model
e: error

The purpose of simple linear regression analysis in this study is to determine how the influence of the independent variable incentives on the dependent variable work effectiveness. The correlation coefficient (R) shows how much relationship occurs between the independent variables simultaneously on the dependent variable. The R value ranges from 0 to 1, a value closer to 1 means that the relationship is getting stronger, on the other hand, a value closer to 0 means that the relationship is getting weaker. Regression with more than two independent variables uses Adjusted R Square as the coefficient of determination. Adjusted R Square is the adjusted R Square (R2) value. The coefficient of determination (Adjusted R2) aims to determine how much percentage of the independent variable able to explain the dependent variable. The greater the coefficient of determination, the better the ability of variable X to explain variable Y (Daniel, 2019).

The criteria of determined respondents are entrepreneurs with an active student status at the Faculty of Entrepreneurship, Universitas Garut. According to the data above, it shows that the entrepreneurs of the entrepreneurship faculty students of Universitas Garut are mostly female and less than 21 years old. The explanation can be seen in Table 1.
Table 1: Respondent Profile

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8</td>
<td>26.7%</td>
</tr>
<tr>
<td>Female</td>
<td>22</td>
<td>73.3%</td>
</tr>
<tr>
<td>Age 19-21</td>
<td>23</td>
<td>76.7%</td>
</tr>
<tr>
<td>&gt;21</td>
<td>7</td>
<td>23.3%</td>
</tr>
</tbody>
</table>

Source: Data Primer

4. Results and Discussion

The first step taken to determine the coefficient value on the Risk Perception variable on Business Model Innovation. In the table below, it can be seen that the correlation between risk perception and business model innovation produces 0.536 and a significant value of 0.002. If the significant value shows a number smaller than 0.05 then the value is positively and significantly related (Daniel, 2019). This shows that if the perception of risk faced by students is effective, business model innovation increases. The correlation relationship value of 0.536 shows a moderate correlation. Regression coefficient result can be seen in Table 2.

Table 2: Regression Coefficient Results

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Risk Perception</th>
<th>Business Model Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Perception</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
</tr>
<tr>
<td>Business Model Innovation</td>
<td>Pearson Correlation</td>
<td>.536**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS

The second analysis was conducted to determine the level of relationship between risk perception and business model innovation of students of the Faculty of Entrepreneurship, Universitas Garut. The coefficient of determination is used to calculate how much the relationship or contribution of the independent variable is to the dependent variable, or in other words to calculate the effect of risk perception on business model innovation (Daniel, 2019), the contribution of incentives to business model innovation is 28.8%, while the remaining 71.2% is influenced by other factors not found in this study. Then the low is due to the provision of risk perception and model summary can seen in Table 3.

Table 3: Model Summary

<table>
<thead>
<tr>
<th>Model Summarya</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>Change Statistics</th>
<th>Sig. F Change</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.536*</td>
<td>.288</td>
<td>.262</td>
<td>8.121</td>
<td>.288</td>
<td>11.306</td>
<td>.002</td>
<td>2.153</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Risk Perception
b. Dependent Variable: Business Model Innovation
Source: SPSS

Testing Criteria; a) If t count < t table, then H0 is accepted. b) If t count = t table, then H0 is accepted. c) If t value > t table, then H0 is rejected. To show whether the effect is significant or not the criteria are as follows: a) If sig < 0.05 then the effect is significant. b) If sig > 0.05 then the effect is not significant (Daniel, 2019). Based on the table above, it is known that the Constant (a) value is 42.231, while the Risk Perception value (b / correlation coefficient) is 0.464. So that the regression equation can be written: Y = a + bX Y = 42.231 + 0.464 The equation can be translated: 1) a = constant of 42.231, meaning that the consistent value of the effectiveness variable is 42.231. 2) b = regression coefficient number X of 0.464 states that every 1% increase in Risk Perception value, the Business Model Innovation value increases by 0.464. The regression coefficient is positive, so it can be said that the direction of the influence of variable X on Y is positive (Daniel, 2019). Partial test can seen in Table 4.
The fourth analysis was conducted to determine whether the six indicators of risk perception together affect business model innovation. In this study, there is a main hypothesis tested, namely Ha: Risk perception has a significant effect on business model innovation in business actors who are active students of the Faculty of Entrepreneurship, Garut University. The significance value is 0.002 <0.05, so Ha is accepted and can be applied widely outside the research focus. Based on the data bellow, because the sig value <0.05, there is a significant relationship between risk perception and business model innovation. That is, if the perception of risk is high, the business model innovation is also high.

Table 4: Partial Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Perception</td>
<td>0.464</td>
<td>.138</td>
<td>.536</td>
<td>3.362</td>
<td>.002</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Business Model Innovation

Source: SPSS

5. Conclusion

After analyzing the theory and research results above, researchers have concluded that Risk Perception has a positive effect on Business Model Innovation. From the results of the study, it is revealed that the level of correlation between the dependent variable Business Model Innovation is at a moderate correlation, which is between 0.40 - 0.599. Thus, Business Model Innovation is only partly influenced by Risk Perception, the rest is influenced by other factors outside of Risk Perception. And it can be seen from the partial hypothesis test results (t test) obtained that the sig value of 0.002 is smaller than 0.05 or 0.002 <0.05, then Ha is accepted and H0 is rejected. The Risk Perception variable has t-value of 3.362 greater than the t-table, namely 2.037. So because t value > t table, it can be concluded that the Risk Perception variable has an influence to Business Model Innovation. The positive t-value indicated that Risk Perception has a significant relationship (unidirectional) with Business Model Innovation. From the results of the coefficient of determination analysis, it is discovered that Risk Perception has an effect of 28.8% on Business Model Innovation. While 71.2% is influenced by other variables. The ability of the independent variable to explain the dependent variable is moderate. While the results of the simple linear regression test obtained the regression line equation $Y = 42.231 + 0.464$.

Acknowledgments

The author expresses gratefulness to all those who have participated and assisted in the process of this research. This research is a development in the form of applied theory. This study provides information that there is a linear relationship between Business Model Innovation and Risk Perception. The author expects that the results of the study may contribute to the future research, and be well developed.

References


