The Moderating Effect of Entrepreneurial Leadership and Competitive Advantage on the Relationship Between Business Model Innovation and Startup Performance

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Key Words
Business model, innovation, competitive advantage, entrepreneurial leadership, and startup performance.

Abstract
The primary purpose of this study is to study the moderating effect of entrepreneurial leadership and competitive advantage in the relationship between the business model innovation and the performance of the start-up business. We hypothesized that business model innovation has a significant association with the performance of the start-up, and entrepreneurial leadership or competitive advantage connects substantially to the business model innovation and start-up. Fifty-one respondents participate in this study. The partial least square statistical technique is used to analyse the data, which is appropriate for parametric analysis for such a sample size. The analysis shows a significant relationship between business model innovation and start-up performance. Also, there are significant relationships of entrepreneurial leadership and competitive advantage to business model innovation. However, it shows no direct relationship between entrepreneurial leadership and start-up; the association is not direct but indirect. The null hypothesis that there is no direct association between competitive advantage and start-up performance is rejected. There is a negative association between competitive advantage and start-up. Both entrepreneurial leadership and competitive advantage improve the relationship between business model innovation and start-up. However, they must be interpreted with caution.

Introduction
Startup is a project of individual or team intended to change their environment through the creation of economic value, usually through innovation (Baregheh, Rowley and Sambrook, 2009). Start-up is the early stage in an entrepreneurial venture where entrepreneurs are still searching for its replicable and scalable business model (Blank, 2013; Bruyat and Julien, 2001). Previous studies showed that entrepreneur ventures in this stage were facing extreme uncertainty and a high failure rate (Haddad, et al., 2020). The probability of a start-up to fail is very high (Cambridge Associates, 2017; Griffin, 2017). The failure rate is estimated between 50% to 80% and may reach up to 90% (Laitinen, 1992; Wetter and Wennberg, 2009; Krishna, Agrawal, and Choudhary, 2016). In other studies, they found that 92% of the start-up venture fail within the first three years of operation (Marmer, Hermann, Dogruttan and Berman, 2012b; Start-up Genome LLC, 2018). This percentage rate was a large percentage number of failures. Until recently, we still do not know the specific reasons why startup failed (Griffi, 2017). The question of why most start-ups failed, while some other succeeded remain central questions that attract most researchers in this field (Cooper, 1993; Spiegel et al., 2016).
Review of literature

Business model innovation

The business model is described as how an organization creates, delivers, and capture value and was introduced by Osterwalder, Pigneur, and Clark (2010); it enables a firm to successfully implement its strategy (Romero, Sánchez, and Villalobos, 2017). The business model canvas comprises nine basic building blocks, namely; the customer segment, value proposition, channel distribution, customer relationships, key resources, key activities, key partnerships, revenue streams, and cost structure. According to Haddad et al. (2020), there are existed business model patterns that can represent the aspects of the business model innovation. These business model patterns are subscription, advertising, pay per use, freemium, add-on, premium, contractor, long tail, data as a service, cross-selling, e-shop, crowd-sourcing, multi-sided platform, ultimate luxury, and customer lock-in. All of these business model patterns can be grouped into three dimensions (revenue streams and payment/pricing models, value proposition, and channels and relations to external actors). However, another business model concept that had a growing interest was the business model innovation (Aspara et al. 2010; Spieth et al. 2014). It is about developing new ways to capture, create, and deliver value (Preuss, 2011; Claus, 2016; Wells, 2008).

Previous studies show that the business model innovation has a significant relationship with business performance (Zott and Amit, 2010; George and Bock, 2011; Afuah and Tucci, 2001). Scholars find that the business model innovation can represent powerful competitive tools that cause companies to gain competitive advantage (Zott, Amit and Massa, 2011; Amit and Zott, 2012; Porter, 1990; Weking et al., 2018). Studies showed that business model innovation, in particular, became the success and a valuable capability of a firm (Aspara et al. 2010; Lindgardt et al. 2009; Chesbrough 2010; Amit and Zott 2012). In terms of the start-up, some business model patterns found to outperform others on different performance measures to the success of start-up (Haddad, et al., 2020). The contractor pattern seems to enhance revenue and cash flow, while add-on patterns influence growth. Since the lock-in pattern imposes switching costs, then it is highly correlated with start-up valuation (Gassmann, Frankenberger, Csik, 2017; Zauberman, 2003). It was apparent that the business model innovation affects start-up performance. However, most studies in the business model are qualitative method (Lambert and Davidson, 2013; Spiegel, et al., 2016). We feel that more research on the quantitative approach is needed.

Entrepreneurial Leadership

Entrepreneurial leadership is a person who can restructure their organization that enables them to seize new opportunities and to improve the ability to invent ways wherein they can compete in a highly unpredictable environment (Huang et al., 2014). The characteristics of the entrepreneurial leadership are described as follow, having the aptitude to visualize for the firm future success, forward-thinking, ability to acknowledge opportunities, ability to inspire and influence their team members in implementing progressive entrepreneurial actions (Sawaean, Ali, 2020), solving problems through creative methods, and reinforce a culture of organizational innovation (Rae, 2017). Gupta, MacMillan, and Surie (2004) conceptualized entrepreneurial leadership in three dimensions, Innovation (nurturing creativity among team members and create novel products and services), proactiveness (motivating individuals to continually compete with other organizations, and risk-taking (willingness to face uncertainty and take responsibility). There seems that entrepreneurial leadership has a relationship to firm growth as it creates a competitive advantage and ensuring sustainability (Palalic, 2017). However, the study on the relationship between entrepreneurial leadership and business model is still limited; thus, an investigation on the relationship needs to be conducted.

Competitive Advantage

Competitive advantage is essential since business sustainability is achieved through competitive advantage, which, upon the formulation of the strategy, is created in value to customers. This value may be in cost leadership, product or service differentiation, or the speed of customer service in the niche market. Indeed, competitive advantage is defined as the firm’s capability to differentiate itself compare to the other competitor (Sultan and Mason, 2010). Jones (2003) described the competitive advantage strategy into three generic strategies that cover cost leadership, differentiation, and focus. These strategies are commonly used by firms and able to respond to business objectives efficiently.
Startups must look for strategies and ways to create innovations to gain new competitive advantages (Potjanajaruwit, 2018). It is necessary to create economic values for customers (Barney and Hesterly, 2010) and reducing business operating costs (Zhang and Hartley, 2018). Although it’s essential for the company to deploy its resources to gain a competitive advantage in all the activities of the company’s value chain, the creation of the competitive advantage varies with the business environment. The ability of each company to create competitive advantage will differ; therefore, the competitive advantage is a significant problem for start-ups because it leads to business survival and sustainability (Zaridis, 2009).

The Research Framework

Many start-ups fail in their very early stage of operation, but the reason behind these are still unclear (Griffin, 2017). Thus, the study needs to be conducted. Studies recently have been done on the relationship between business model innovation and start-up success. However, only a few studies that check the moderating effect of the entrepreneur leadership and competitive advantage in the relationships between business innovation and startup performance. The research framework of this study is shown in Figure 1.

Figure 1. The Research Framework.

The Hypotheses

\( H_{a1} \): Business model significantly relates to start-up.
\( H_{a2} \): Entrepreneurial leadership significantly relates to the business model and start-up.
\( H_{a3} \): Competitive advantage significantly relates to business model and start-up.

Methodology

Participants

Startup firms, as the participants of this study, are firms that just established recently, which are the firms established in the last five years. Participants are selected using a purposive sampling technique. Only entrepreneurs that have started their business within a maximum of the past five years will be chosen. Participants may reside anywhere; however, most of the participants will be taken from Indonesia. No limit of ages and gender as long as they are considered an entrepreneur. Seventy-one participants return the questionnaires; however, nine were found to have incomplete information and were considered as outliers. They are removed and left 51 participants.

Instrument

In collecting data, a questionnaire will be used. Each of the latent variables will have reflective items as observable variables to indicate their construct. Not all of the questions are expressed in affirmative sentences; some are shown in negative sentences.

As measurements of firm performance, financial indicators are taken as the most important measure of firm performance, as stated by Wiklund and Shepherd (2005); Turulja and Bajgoric (2018); and Chen, Tsou and Huang (2009). For measurements of start-up performance, the two recommended financial indicators are total revenue, and the total amount of funds available (Haddad et al., 2020). Another factor that may indicate start-up success is the number of employees. Thus, we are using revenue, funds received, and the number of employees to measure start-up performances.
In measuring business model innovation, we use ten reflective items based on the concept of business model innovation, as presented by Claus (2016) and Pedersen, Gwozdz and Hvass (2016). The entrepreneurial leadership is measured by the six items from Renko et al. (2015). Finally, six reflective items are used to measure competitive advantage (Pereira-Moliner et al. 2016). All measures consisted of items with five-point Likert scales ranging from 1=strongly disagree to 5=strongly agree unless otherwise indicated. The measurement items are shown in the appendices.

The items taken are based on sound theoretical background; thus, we may consider the items are valid contently. It is also essential to know if the items can build a sturdy construct. We will test the construct validity of the items by using the convergent and discriminant validity test. The loading factor of convergent validity as the minimal requirement is 0.7, and we will use the average variance extracted (AVE) to test the discriminant validity. The AVE for the construct must be higher than the correlation of that construct with other constructs for the items to be valid. To test the reliability of the instrument, we used the composite reliability of internal consistency. Acceptance valid reliability score is a score higher than 0.7.

![Table 1](https://example.com/table1.png)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (business model innovation)</td>
<td>0.792</td>
<td>0.879</td>
</tr>
<tr>
<td>CA (competitive advantage)</td>
<td>0.745</td>
<td>0.854</td>
</tr>
<tr>
<td>EL (entrepreneurial leadership)</td>
<td>0.826</td>
<td>0.920</td>
</tr>
<tr>
<td>S (start-up)</td>
<td>0.849</td>
<td>0.865</td>
</tr>
</tbody>
</table>

Table 1. The outer loading of items in measuring business model innovation (BMI), competitive advantage (CA), entrepreneurial leadership (EL), and start-up performance (S).

The result of discriminant analysis is shown in Table 2. It appeared that the items of the construct were able to discriminate among different constructs. As the square root of AVE of the construct is the highest among another construct. For example, the AVE of BMI (business model innovation) is 0.842 higher than the rest of the square root of AVE value in the same column (in other cases on the same row).

![Table 2](https://example.com/table2.png)

<table>
<thead>
<tr>
<th>Construct</th>
<th>CA</th>
<th>EL</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>0.842</td>
<td>0.587</td>
<td>0.695</td>
</tr>
<tr>
<td>CA</td>
<td>0.587</td>
<td>0.813</td>
<td>0.461</td>
</tr>
<tr>
<td>EL</td>
<td>0.695</td>
<td>0.461</td>
<td>0.923</td>
</tr>
<tr>
<td>S</td>
<td>0.246</td>
<td>-0.127</td>
<td>0.129</td>
</tr>
</tbody>
</table>

Table 2. The discriminant test results.

For the reliability of the instrument, the composite reliability of internal consistency was used. The reliability score of higher than 0.7 is accepted. As shown in Table 3, the composite reliability of the four constructs is higher than the required reliability score. We also show the reliability score of Cronbach’s Alpha to have a comparison, which also indicates higher than 0.7. We can be sure that the measurement of the construct is reliable.

![Table 3](https://example.com/table3.png)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
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</tr>
</tbody>
</table>

Table 3. The Cronbach’s Alpha and Composite Reliability test results.
Procedure
Data will be collected by questionnaire. The questionnaires were distributed to the selected respondents online, and google form will be used to develop the questionnaire. The survey was sent through email or WhatsApp. Later, the followup calls to the participants to have a higher survey return rate.

Statistical Analysis
Partial Least Square analysis is the statistical technique that is used in analysing the data with the help of SmartPLS statistical software. The strength of the inner model will be determined by the $R^2$, while the significant of the hypotheses will be tested with the significant of the beta coefficient.

Result
The Partial-Least Square statistical technique was used to test the null hypothesis. The null hypothesis that business model innovation cannot predict start-up was rejected ($\beta_{std} = 0.490$, $r^2 = 0.240$, $P < 0.05$), the business model innovation can predict the success of a start-up, see Table 4. About 24% ($r^2 = 0.240$) variance in start-up is explained by business model innovation. As business model innovation improve, the start-up success will also increase.

<table>
<thead>
<tr>
<th></th>
<th>$\beta_{standardized}$</th>
<th>$r$-square</th>
<th>P-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI -&gt; S</td>
<td>0.490</td>
<td>0.240</td>
<td>0.002</td>
</tr>
<tr>
<td>CA -&gt; BMI</td>
<td>0.338</td>
<td>0.114</td>
<td>0.002</td>
</tr>
<tr>
<td>CA -&gt; S</td>
<td>-0.414</td>
<td>0.171</td>
<td>0.008</td>
</tr>
<tr>
<td>EL -&gt; BMI</td>
<td>0.539</td>
<td>0.155</td>
<td>0.000</td>
</tr>
<tr>
<td>EL -&gt; S*</td>
<td>-0.039</td>
<td>0.001</td>
<td>0.807</td>
</tr>
</tbody>
</table>

* Initial run since it was not significant then was removed in the second run.

Table 4. The significant value of the variables. BMI (business model innovation), S (start-up performance), CA (competitive advantage), EL (entrepreneurial leadership).

The null hypothesis that entrepreneurial leadership cannot directly predict start-up was accepted ($\beta_{std} = -0.039$, $r^2 = 0.001$, $P > 0.05$). There was no direct correlation between entrepreneurial leadership and start-up. However, the null hypothesis that entrepreneurial leadership cannot predict business model innovation was rejected ($\beta_{std} = 0.539$, $r^2 = 0.155$, $P < 0.05$). The entrepreneurial leadership can be used to predict business model innovation. There is a direct effect of entrepreneurial leadership to business model innovation. About 15.5% ($r^2 = 0.155$) change in business model innovation can be explained by entrepreneurial leadership. Although there was no direct effect of entrepreneurial leadership to start-up, however, there was an indirect effect of entrepreneurial leadership to start-up ($\beta_{std} = 0.264$), as shown in Table 5. Therefore, entrepreneurial leadership was a pure moderator between business model innovation and start-up. With the existence of entrepreneurial leadership, the effect of business model innovation to start-up increase by about 6.3% ($r^2 = 0.063$).

<table>
<thead>
<tr>
<th></th>
<th>Indirect Effect</th>
<th>Total Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>BMI</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>0.490 ($r^2 = 0.240$)</td>
</tr>
<tr>
<td>CA</td>
<td>0.165 ($r^2 = 0.027$)</td>
<td>0.338 ($r^2 = 0.114$)</td>
</tr>
<tr>
<td>EL</td>
<td>0.264 ($r^2 = 0.069$)</td>
<td>0.539 ($r^2 = 0.290$)</td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5. The standardized beta of indirect and direct effects

The null hypothesis that competitive advantage cannot directly predict start-up was rejected ($\beta_{std} = -0.414$, $r^2 = 0.171$, $P < 0.05$). There is a direct negative correlation between competitive advantage and start-up. Since the beta coefficient is negative, indicating that as a competitive advantage getting stronger, the success of start-up reduces, see Table 4. About 17.1% change in a start-up was due directly to
competitive advantage. Further, the null hypothesis that competitive advantage cannot predict business model innovation was rejected ($\beta_{std} = 0.338$, $r^2 = 0.114$, $P < 0.05$). Competitive advantage can be used to predict business model innovation. There is a direct positive effect of competitive advantage to business model innovation. About 11.4% ($r^2 = 0.114$) change in business model innovation can be explained by competitive advantage. There is a positive indirect, and negative direct effect of competitive advantage on start-up. When business model innovation is the mediating variable, about 6.2% ($r^2 = 0.062$) of the total change in a start-up is due to competitive advantage, see Table 5. The effect is smaller since competitive advantage positively relates to start-up through business model innovation and negatively related to start-up directly. Therefore, the competitive advantage was a quasi-moderator between business model innovation and start-up. With the existence of competitive advantage, the effect of business model innovation to start-up reduce by 6.2% ($r^2 = 0.062$), which was very small.

Both entrepreneurial leadership and comparative advantage predict business model innovation. About 55.5% change in business model innovation was due to entrepreneurial leadership and comparative advantage, as seen in Table 6. There is a 13.9% change in start-up due to entrepreneurial leadership, competitive advantage, and business model innovation. There is no direct effect of entrepreneurial leadership on start-up, but it has an indirect impact through business model innovation, as seen in Figure 2. Competitive advantage has both a direct and indirect effect on the success of start-up through business model innovation.

<table>
<thead>
<tr>
<th>Construct</th>
<th>R Square</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (business model innovation)</td>
<td>0.573</td>
<td>0.555</td>
</tr>
<tr>
<td>S (start-up)</td>
<td>0.173</td>
<td>0.139</td>
</tr>
</tbody>
</table>

*Table 6. The R square of BMI (business model innovation), and S (start-up performance).*

**Figure 2. The final model of the start-up; the moderating effect of entrepreneurial leadership and competitive advantage in the relationship between business model innovation and start-up.**

**Discussion and Conclusion**

The finding of this study shows that there is a positive correlation between business model innovation and start-up performance. It is supported by the previous studies, which also found that the business model significantly relates to business performance (Afuah and Tucci, 2001; George and Bock,
2011; Zott and Amit, 2010). When entrepreneurial leadership and competitive advantage improve, the effect of business model innovation to start-ups getting stronger. However, it is not advisable to use competitive advantage alone without business model innovation since the direct association between competitive advantage and start-up is negative. Competitive advantage can only improve start-up when business model innovation is there since a positive correlation was found between competitive advantage and business model innovation.

Studies show that entrepreneurial leadership has an association with small firm growth (Gupta, MacMillan, and Surie, 2004; Huang et al., 2014; Palalic, 2017). Our study shows that no direct association between entrepreneurial leadership and start-up but indirectly through business model innovation. It implies that in the development of the business model for a start-up, entrepreneurial leadership needs to be considered. It is the business model innovation that has a direct association with start-up and not entrepreneurial leadership. However, entrepreneurial leadership enhances business model innovation.

Our study found that competitive advantage has a positive direct association with business model innovation. It is consistent with previous studies that strategy work through business model (DaSilva and Trikman, 2014), and it integrates the capacity to innovate (Nelson and Winter, 1982; Teece, 2014; Teece et al., 1997). However, competitive advantage has a negative association with a start-up. It implies that for a start-up, competitive advantage cannot be used without the business model innovation. It is recommended for a start-up to put more resources into business model innovation than to competitive advantage.

Some variables, such as networking and competitive strategy, cannot be used alone for a start-up business—other variables need to be there as an intervening variable. Business model innovation seems to be the appropriate intervening variable. The role of networking and competitive advantage is the moderating variable.

This study has a managerial impact on start-ups by taking into account important factors in building their business models, so as to increase success in achieving the company's growth and survival goals more effectively.

Limitations and Direction for Future Research

This study is not without limitation; the model has $R^2$ that is quite small. Therefore, we suggest further research to involve a variety of variables, either as moderating or mediating variables. The small sample size of this study had been handled by the use of bootstrapping in data analysis.

Appendix A.

Business model innovation measurement items (Claus et al. 2016):

- My employees' knowledge is more updated than competitors
- I still use the traditional process in making out the products
- My product or service can meet customer needs compared to competitors
- Changes to the new distribution channel can improve the efficiency of the company's channel functions
- I emphasize innovative actions to increase customer retention
- I develop new income opportunities
- I depend on the current source of income
- I always looking for opportunities to save on production costs.

Entrepreneurial leadership measurement items (Renko et al. 2013):

- Looking for opportunities is easy for me
- It is difficult for me to get a new idea
- I am among those who easily influence my teamwork
- I can see how my business will look like in the future
- Handling problems creatively is difficult for me, and
- I am among those who like to avoid the risk

Competitive advantage measurement items (Pereira-Moliner et al. 2016):

- My business has NOT had a brand image yet
- The quality of the products offered is standard
- There are additional services for each product/service provided
Our costs are far below competitors.
Our production system is more efficient than competitors.
Achieving economies of scale is NOT important to us.

References
public/StartupGenomeReport2_Why_Startups_Fail_v2.pdf


