The structural model of startup: The moderating effect of enterprise leadership and networking

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ABSTRACT

Many startups fail, and we still do not know why. It is the purpose of this study to know if a relationship exists between business model innovation and startup, and whether networking and competitive advantage can improve their relationship. We hypothesized that business model innovation relates to startup and that networking and competitive advantage significantly enhance the relationship between business model innovation and startup. Fifty-one respondents participate in this study. The partial least square statistical technique is used to analyze the data. This analytical technique is appropriate for parametric analysis for such a sample size. The null hypothesis that no relationship exists between business model innovation and startup is rejected. The null hypothesis that networking and competitive advantage is not related to business model innovation is also rejected. However, the null hypothesis that there is no direct relationship between networking and startup is accepted; the association is not direct but indirect. The null hypothesis that no direct association between competitive advantage and startup is rejected. There is a negative association between competitive advantage and startup. Both networking and competitive advantage improve the relationship between business model innovation and startup. However, they must be used with caution.

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Keywords: Business model innovation
Competitive advantage
Networking
Startup

1. Introduction

A startup is an early stage in an entrepreneurial venture where entrepreneurs are still searching for its replicable and scalable business model (Blank, 2013; Bruyat & Julien, 2001). It is a project of team or individual intended to change their environment through the creation of economic value, usually through innovation (Baregheh, Rowley & Sambrook, 2009). Studies showed that entrepreneurs venture in this stage were facing extreme uncertainty and high failure rate (Haddad et al., 2020) and the probability of failing was very high (Cambridge Associates, 2017; Griffin, 2017). It was estimated that the failure rate is between 50% to 80%, and may reach up to 90% (Krishna, Agrawal, and Choudhary, 2016, Laitinen, 1992; Wetter & Wennberg, 2009). In other studies, they found that 92% of the startup venture fail within the first three years of operation (Marmer et al., 2012; Startup Genome LLC, 2018). It is a large percentage number of failures. Though most startups failed, yet we still do not know the specific reasons (Grifii, 2017). The question of why most startup fails and some other succeed remain questions that attract most researchers (Cooper, 1993; Spiegel et al., 2016).

2. Review of Related Literature

2.1 Business Model Innovation

The business model is about how an organization creates, delivers, and capture value (Osterwalder, Pigneur, Clark, 2010). It enables a firm to successfully implement its strategy (Romero, Sánchez, Villalobos, 2017). There are several business model patterns exist as mentioned by Haddad et al., (2020) and business model as a 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

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luxury, and customer lock-in. All of these can be grouped into three dimensions (revenue streams and payment/pricing models, value proposition, and channels and relations to external actors). One of the popular concepts of the business model was the business model canvas introduced by Osterwalder and Pigneur (2010). It comprises nine basic building blocks. They are value proposition, channels, customer segment, customer relationships, key resources, key activities, key partnerships, revenue streams, and cost structure. However, another business model concept that has a growing interest is the business model innovation (Aspara et al., 2010; Spieth et al., 2014; Hite, 2005; Kee & Rahman, 2018). It is about developing new ways to capture, create, and deliver value (Preuss, 2011; Wells, 2008). Studies showed that business model significantly relates to business performance (Afuah & Tucci, 2001; George & Bock, 2011; Zott & Amit, 2010). The business model could represent powerful competitive tools that cause companies to gain competitive advantage (Amit, Zott, 2012; Porter, 1990; Weking et al., 2018; Zott, Amit, Massa, 2011). In particular of business model innovation, studies showed that it became the success and a valuable capability of an organizational (Aspara et al., 2010; Lindgardt et al., 2009; Chesbrough, 2010; Amit & Zott 2012). In terms of a startup, some business model patterns found to outperform others on different performance measures to the success of a startup (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 startup valuation (Gassmann, Frankenberger, Csik, 2017; Zauberman, 2003; Albourini et al., 2020). It is clear that the business model influence startup. However, most studies in the business model were using a qualitative approach (Lambert, Davidson, 2013; Spiegel et al., 2016), more study on quantitative approach are needed.

2.2 Networking

Networking is essential in startup ventures since it builds trust and ties (Davidson and Honig, 2003). There are two ties in networking, the weak and the strong ties. The weak ties such as acquaintances, and friends of friends, while strong ties such as relatives, friends, and neighbors (Granovetter, 1983; Davidsson & Honig, 2003). Ties in networking relate to early venture success. Studies show that networking had an association with small firm growth (Jack et al., 2010; Acquaah, 2011; Ng & Rieple, 2014; Stuart & Sorenson, 2007; Barr, 1999; Acquaah & Eshun, 2010). It is probably due to the ability to network to obtain access to information and resources (Nichter & Goldmark, 2009).

2.3 Competitive Advantage

For a startup, it is important to have competitive advantage since it leads to business survival and sustainability (Zaridis, 2009). Competitive advantage is a form of strategy for business survival. A study showed that strategy work through business model (DaSilva & Trikman, 2014), it is to create value necessary for business survival. It integrates the capacities to innovate and creating value (Nelson & Winter, 1982; Teece, 2014; Teece et al., 1997). The concept of creating value is the beginning of a search for competitive advantage (Casadesus-Masanell & Ricart, 2009). Competitive advantage is the way to differentiate a company from its competitors. There are three popular strategies of competitive advantage; they are, cost leadership, differentiation, and focus. The company will gain competitive advantage when the benefit as indicated by the levels of satisfaction as perceived by customers is higher than the relative position of its costs (Jones, 2003; Porter & Millar, 1985). Competitive advantage is also gained by providing products of services that are different from their competitors. Studies have shown that business model relates to business performance (Zott, Amit, Massa, 2011; Amit, Zott, 2012; Porter, 1990; Weking et al., 2018). It is our interest to know if competitive advantage maintains the moderating effect on the relationship between business model innovation and business startup.

2.4 The Conceptual Framework

As stated by Griffin (2017), many startups fail in their very early stage of operations, but we still do not know the reasons why. Thus, a study needs to be executed. Studies recently have been done on the relationship between business model and startup success. However, few, if any, to see if networking and competitive advantage can be the moderating variables in their relationships. The conceptual framework of this study is shown in Fig. 1.

Fig. 1. The Conceptual Framework. The moderating effect of networking and competitive advantage in the relationship between business model innovation and startup
2.5 The Hypotheses

The first hypothesis (H₁) states that the business model relates to startup. The second hypothesis (H₂): networking is related to business model and startup. The third hypothesis (H₃): competitive advantage is associated with business model and startup.

3. Method

3.1 Participants

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

3.2 Instrument

In collecting data, a questionnaire was used. Each of the latent variables will have reflective items as observable variables to indicate their construct. Not all of the items are expressed in positive sentences; some are shown in negative sentences. As stated by Wiklund and Shepherd (2005); Menicucci (2018), Turulja and Bajgoric (2018); and Chen et al. (2009), financial indicators are the most important measures of firm performance. For a startup, the two recommended financial indicators are total revenue and the total amount of funds available (Haddad et al., 2020). Another factor that may indicate startup success is the number of employees. Thus, we were using revenue, funds available, and the number of employees as reflective items for startup performances. In measuring business model innovation, the following reflective items were used. These items were based on the concepts of business model innovation, as presented by Claus (2016) and Pedersen et al. (2016). They were, “My employees’ knowledge is more updated than competitors.”, “I continue to use the company's existing technical resources until they are replaced.”, “I still use the traditional process in making out products, my product or service can meet customer needs compared to the competitors.”, “I neglected to take up opportunities that appeared in the market.”, “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.”, and “I always looking for opportunities to save on production costs.” The following reflective items were used to measure networking. “I know each of my neighbors well.”, “I am among those who have few friends.”, “My friends trust me.”, “I rarely communicate with my friends.”, “It's hard for me to find friends who can help me.”, and “I made friends with some famous people.” While the following reflective items were used to measure competitive advantage. “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.”, and “Achieving economies of scale is NOT essential to us.” The items are based on a strong theoretical background to be sure of their content validity. The construct validity of the items was tested by the use of convergent and discriminant validity test. The required loading factor of convergent validity was minimal of 0.7, while the square root of average variance extracted (AVE) was used for testing the discriminant validity. The square root of AVE for the construct must be higher than the correlation of that construct with other constructs for the items to be valid. From the outer loading, as shown in Table 1, we can see that all of the three reflective items of startup were valid since having outer loading of greater than 0.7. Seven out of 10 reflective items of business model innovation were considered invalid, and only three items were valid that had outer loading greater than 0.7. For competitive advantage, three items were deemed to be valid out of six, and for the network, only two were considered valid out of six.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>BMI</th>
<th>CA</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI4</td>
<td>0.767</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI7</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI8</td>
<td>0.873</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA3</td>
<td></td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA4</td>
<td></td>
<td>0.815</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA5</td>
<td></td>
<td>0.823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N4</td>
<td></td>
<td></td>
<td>0.912</td>
<td></td>
</tr>
<tr>
<td>N5</td>
<td></td>
<td></td>
<td>0.889</td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td></td>
<td></td>
<td></td>
<td>0.911</td>
</tr>
<tr>
<td>S2</td>
<td></td>
<td></td>
<td></td>
<td>0.804</td>
</tr>
<tr>
<td>S3</td>
<td></td>
<td></td>
<td></td>
<td>0.793</td>
</tr>
</tbody>
</table>
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
The discriminant test results

<table>
<thead>
<tr>
<th></th>
<th>BMI</th>
<th>CA</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>0.842</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>0.584</td>
<td>0.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>0.344</td>
<td>-0.081</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>0.244</td>
<td>-0.123</td>
<td>0.249</td>
<td>0.838</td>
</tr>
</tbody>
</table>

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
Cronbach’s Alpha and Composite Reliability test results

<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>N (networking)</td>
<td>0.767</td>
<td>0.895</td>
</tr>
<tr>
<td>S (startup)</td>
<td>0.849</td>
<td>0.866</td>
</tr>
</tbody>
</table>

3.3 Procedure
Data were collected by questionnaire. It was distributed to the selected respondents online. The questionnaire was presented online with the use of a google survey. It was sent through both email and WhatsApp applications. To have a higher return rate, a phone call follow-up was conducted.

3.4 Statistical Analysis
Partial Least Square analysis was the statistical technique used in analyzing the data with the help of SmartPLS statistical software. The R² will determine the strength of the inner model, while the significant of the hypotheses will be tested with the beta coefficient.

4. Result
The Partial-Least Square statistical technique was used to test the null hypothesis. The null hypothesis that business model innovation cannot predict startup was rejected \( \beta_{std} = 0.497, r^2 = 0.243, P < 0.05 \), the business model innovation can predict the success of a startup, see Table 4. About 24.3% \( r^2 = 0.243 \) variance in startup is explained by business model innovation. As business model innovation improve, the startup success will also increase.

Table 4
The significant value of the variables. BMI (business model innovation), S (startup), CA (competitive advantage, N (networking))

<table>
<thead>
<tr>
<th></th>
<th>( \beta_{standardized} )</th>
<th>r-square</th>
<th>P-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI → S</td>
<td>0.493</td>
<td>0.243</td>
<td>0.001</td>
</tr>
<tr>
<td>CA → BMI</td>
<td>0.615</td>
<td>0.378</td>
<td>0.000</td>
</tr>
<tr>
<td>CA → S</td>
<td>-0.414</td>
<td>0.171</td>
<td>0.009</td>
</tr>
<tr>
<td>N → BMI</td>
<td>0.394</td>
<td>0.155</td>
<td>0.000</td>
</tr>
<tr>
<td>N → S*</td>
<td>0.069</td>
<td>0.005</td>
<td>0.663</td>
</tr>
</tbody>
</table>

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

The null hypothesis that networking cannot directly predict startup was accepted \( \beta_{std} = 0.069, r^2 = 0.005, p > 0.05 \). There was no direct correlation between networking and startup. However, the null hypothesis that networking cannot predict business model innovation was rejected \( \beta_{std} =0.394, r^2 = 0.155, P < 0.05 \). The network can be used to predict business model innovation. There is a direct effect of network to business model innovation. About 15.5% \( r^2 =0.155 \) change in business model innovation can be explained by networking. Although there was no direct effect of networking to startup, however, there was an indirect effect of networking to startup \( \beta_{std} = 0.194 \), as shown in Table 5. Therefore, networking was a pure moderator between business model innovation and startup. With the existence of networking, the effect of business model innovation to startup increase by about 3.7% \( r^2 = 0.037 \). The null hypothesis that competitive advantage cannot directly predict startup was rejected \( \beta_{std} = -0.414, r^2 = 0.171, p < 0.05 \). There is a direct negative correlation between competitive advantage and startup. Since the beta coefficient is negative, indicating that as competitive advantage getting stronger, the success of startup reduce, see Table 4. About 17.1% change in a startup was due directly to competitive advantage. Further,
the null hypothesis that competitive advantage cannot predict business model innovation was rejected ($\beta_{\text{std}} = 0.615$, $r^2 = 0.378$, $P < 0.05$).

**Table 5**
The standardized beta of indirect and direct effects

<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>0.303 ($r^2 = 0.091$)</td>
<td>0.615 ($r^2 = 0.378$)</td>
</tr>
<tr>
<td>CA</td>
<td>0.194 ($r^2 = 0.037$)</td>
<td>0.394 ($r^2 = 0.155$)</td>
</tr>
</tbody>
</table>

Competitive advantage can be used to predict business model innovation. There is a direct positive effect of competitive advantage to business model innovation. About 37.8% ($r^2 = 0.378$) change in business model innovation can be explained by competitive advantage. There is a positive indirect and negative direct effect of competitive advantage on startup. When business model innovation became the mediating variable, about 1.2% ($r^2 = 0.012$) of the total change in a startup is due to competitive advantage, see Table 5. The effect is smaller since competitive advantage positively relates to startup through business model innovation and negatively related to startup directly. Therefore, competitive advantage was a quasi moderator between business model innovation and startup. With the existence of competitive advantage, the effect of business model innovation to startup reduce by 1.2% ($r^2 = 0.012$), which was very small. Both networking and comparative advantage predict business model innovation. About 47.4% change in business model innovation was due to networking and comparative advantage predict business model innovation. There is 14.2% change in startup due to networking, competitive advantage, and business model innovation. There is no direct effect of networking on startup, 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 startup through business model innovation.

**Table 6**
The R square of BMI (business model innovation), and S (startup).

<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>0.495</td>
<td>0.474</td>
</tr>
<tr>
<td>S (startup)</td>
<td>0.176</td>
<td>0.142</td>
</tr>
</tbody>
</table>

Fig. 2. The final model of the startup: The moderating effect of networking and competitive advantage in the relationship between business model innovation and startup
5. Discussion

The findings of this study have shown that there was a positive correlation between business model innovation and startup. It is supported by the previous studies, which also found that the business model significantly relates to business performance (Afuah & Tucci, 2001; George & Bock, 2011; Zott & Amit, 2010). When networking and competitive advantage improve, the effect of business model innovation to startups is getting stronger. However, it is not advisable to use competitive advantage alone without business model innovation since the direct association between competitive advantage and startup is negative. Competitive advantage can only improve startup when business model innovation is there since a positive correlation was found between competitive advantage and business model innovation. Studies have shown that networking had an association with small firm growth (Acquaah, 2011; Acquaah & Eshun, 2010; Barr, 1999; Jack et al., 2010; Ng & Rieple, 2014; Stuart and Sorenson, 2007). The association is indirect, either through building trust and ties (Davidson & Honig, 2003) or by easy access to information and resources (Nichter & Goldmark, 2009). Our study has shown that no direct association between network and startup existed but some indirect association through business model innovation was found. It implies that for the development of the business model for a startup, network needs to be considered. It is the business model innovation that has a direct association with startup and not network. However, network improves the business model innovation. The study has found that competitive advantage had a positive direct association with business model innovation. It is consistent with previous studies that strategy work through business model (DaSilva & Trikman, 2014), and it integrates the capacity to innovate (Nelson & Winter, 1982; Teece, 2014; Teece et al., 1997). However, competitive advantage has a negative association with a startup. It implies that for a startup, competitive advantage cannot be used without the business model innovation. It is recommended for a startup to put more resources into business model innovation than to competitive advantage.

6. Conclusion

Some variables, such as networking and competitive strategy, cannot be used alone for a startup 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 is not without limitation; the model has R² 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.

References


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