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by Florentina Kurniasari

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Firm Competitiveness and Firm Performance - The Impact of Alliance Formation in Early Stage Digital Start-ups

Prio Utomo[a], Florentina Kurniasari[b], [a,b]Universitas Multimedia Nusantara, Tangerang, Indonesia, Email: [a]prio.utomo@umn.ac.id, [b]florentina@umn.ac.id

The quality of digital start-ups' entrepreneurial activities is essential for the wealth of the nation. The digital start-up, as with other small and medium enterprises, is known to have limitations in assets, processes, and knowledge for them to compete and have a sustainable business. This study provides an initial view of how these start-ups deal with this limitation through alliances by understanding the diversity and characteristics of alliance formation, and how it is impacting their competitiveness and performance. The analysis of responses from 103 start-ups using the structural equation model (SEM) shows that alliance formation in the early stage of digital start-ups has a positive and significant impact on both firm competitiveness and performance through the view of the alliance's functionality, structure, and attribute.

Key words: *Alliance Formation, Firm Competitiveness, Firm Performance, Alliance Function, Alliance Structure, Alliance Attribute, Start-Up.*

Introduction

The wealth of a nation depends on the quality of its entrepreneurial activity since they are creating jobs, developing new solutions to problems, creating technology that improves efficiency, and exchanging ideas globally (Ács, Szerb, & Lloyd, 2017). The small and medium enterprise (SME) is the main actor in entrepreneurial activity; for example, in the United States (US) as the world's most entrepreneurial country, entrepreneurial activity has been increasing in the past three years (Morelix, Fairlie, & Tareque, 2017). There are an estimated 543,000 new small business corporations (firms with less than 500 employees) created every month. They contribute 1.1 million nett new jobs, 99.7% of US businesses, 28.8 million business units, and 97.7% of US export trade (SBA, 2016). As a comparison, micro, small, and medium sized enterprises (MSME) are also significant in Indonesia. There are 56.54 million small and

medium enterprises (99% of business in Indonesia) that contribute to 60.34% of Indonesia's GDP and 97.22% of national employment in 2015 (BI & LPPI, 2015). The latest economic census report reveals that there are 27.14 million companies that work in the non-agriculture sector, where 26.71 million (98.33%) are micro enterprises. Small-medium companies (around 447,400 companies) are medium-large (BPS, 2017).

SMEs have limited resources that include all assets, capabilities, processes, information and knowledge that are under their control to improve a firm's efficiency and effectiveness (Parnell, Long, & Lester, 2015; Volery, Mueller, & von Siemens, 2015). They are pressured by globalisation and competition due to their scarcity of resources (Woschke, Haase, & Kratzer, 2017). The longevity of these entrepreneurial firms is also very short. Within three years, 92% of start-ups failed. More than 90% of start-ups fail, due primarily to self-destruction rather than competition. For the less than 10% of start-ups that do succeed, most encounter several near-death experiences along the way (Marmer, Herrmann, Dogrultan, & Berman, 2011).

In the real world, a company does not work alone. It relates to other companies and allies, as a response to the market and social forces. For a firm to improve its odds of survival, they need to actively balance between maintaining substantial autonomy while maintaining stable external relationships, particularly with partners in possession of valuable and needed resources, which leads to interdependency between firms (Pangarkar & Wu, 2013). This external relationship comes in the form of alliances to achieve superior performance, attain a competitive advantage by acquiring resources that unique as well as un-substitutable by the competitor. Alliances will stabilise resource flows between different markets and increase market power in their primary industry (Xia, Wang, Lin, Yang, & Li, 2018). The study of alliances has developed significantly during the past decades. Wang & Rajagopalan (2015) tried to develop a framework for the study of alliances by studying alliances' capability and trying to distinguish the level of alliances (individual, a portfolio and dyad) and stages of alliances (pre-formation and post-formation) that determine the effect of value creation and value capture. Other studies try to understand the effect of external factors such as venture capital to the formation of alliances (Blevins & Ragozzino, 2018). Despite these studies, the manager is still facing failure in developing and forming alliances, especially how the alliances are impacting its company, especially in the limited resources company. Thus, this study will study alliances formation from the perspective of the paradox of management in exploitation and exploration activities that became a challenge in the forms of functional, structure, and attribute domains (Lavie & Rosenkopf, 2006).

Literature Review

Alliance Formation

The Alliances Formation comes from the notion of an organisation's tie diversity. It is grounded from the resource-based theory (RBT), resource dependency theory (RDT), and organisational learning as part of an organisation study (Pangarkar & Wu, 2013). Lavie & Rosenkopf (2006), from the previous study on organisation inter-dependency, conceptualised the formation of the alliance into three domains: functional, structure, and attribute domains.

The conceptual function of alliances focusses on the value-adding activity of alliances. This value-adding activity comprises value creation activity and value capturing activity. The value creation activities comprise research and development and new product development activities, while value capturing activities include sales and commercialisation. Firms that engage partners in research and development may lead to the development of innovative technology and application, whereas firms that rely on alliances and using existing technology for sales and commercialisation could complement partner capability.

The concept of Alliance Structure refers to the company's decision to partner with parties that have no previous ties (Zanotti, Reyes, & Fernandez, 2018). Forms of recurring alliances between companies are considered as a form of exploitation of existing cooperation. In contrast, alliances formed with new partners are considered as the result of the exploration of new partnerships. By forming partnerships with known companies, companies can rely on previous experience and trust between companies to strengthen the predictability and reliability of collaboration (Ma, 2000), such as the pattern of forming alliances accordingly. Conversely, when partners do not have previous ties with the company, the company cannot rely on direct experience with these partners. Still, the company can expand its reach and seek knowledge.

The concept of attributes in an alliance increases exploration by experimentation and variations in routine, process, and technology as well as application. Exploration requires adaptation to environmental changes by raising variations in the attributes of this organisation and supporting reorientation that enables companies to adopt new attributes and gain new knowledge (Lavie & Rosenkopf, 2006).

Firm Competitiveness

Competitiveness is the source and the consequences of firm performance (Zanotti et al., 2018). It is a relative stand of a company and depends on the reference point, where they were measured and compared (Ma, 2000). The causal nature of these constructs is still debatable in the field of strategy and management. Competitiveness is a complex subject that covers a range of studies at various levels. It has been conceptualised and measured at country, industry,

cluster, and firm-level with different dimensions and approaches. The evolution of this competitiveness research developed broadly in several streams of theoretical and empirical studies, mainly related to competition, competitive strategy, competitive advantage, competitiveness, cluster, and creating shared value (Sölvell, 2015). Also, the benchmark of every level has its indictors and is conducted by different bodies. Sigalas, Pekka Economou, & B. Georgopoulos (2013) tried to build measures of firm competitiveness by involving three aspects: (1) exploitation of all market opportunities; (2) neutralisation of competitive threats; and (3) cost reduction. Firm competitiveness is related to the companies' sustainable economic value constructed by their long-term profitability and job creation. Fundamentally, it depends on the capability of entrepreneurs that explore and exploit new opportunities through small and medium enterprise. Firm competitiveness is the capability of a firm meeting customer requirements at a profit that is realised through an offering on the market of goods and services, which customers value higher than those offered by competitors. It depends on the firm's capability to design, produce and market its product, customer acquisition, and retention. The design and product development capability in the existing literature related to new product development, while to market, customer acquisition and retention related to the marketing capability and the business model. New ventures, called start-ups, are known for their entrepreneurial behaviour driven by millennials that try to deliver value to their customer. They try to bring value to improve society by developing innovative products, services, process, or a platform in a viable and replicable business model. The product development of start-ups has a different philosophy compared with a large corporation in product development wherein start-ups focus on developing the minimum viable product through iteration and experimentation by user and customer involvement that focusses on solving customer problems (Frederiksen & Brem, 2017). A minimum viable product (MVP) is a product or service with just enough features to satisfy early customer needs. It could also allow the user to provide feedback for future product development (Ries, 2011). In the early stage of product development, marketing and customer acquisition and retention are providing a channel for the start-up to get feedback from the customer on the product developed, while in the more mature start-up this capability is considered as a transition from its informal, learning and discovery-oriented phase into formal departments with sales, marketing, and business development

Firm Performance

Due to the complexity of start-ups' performance metric – because the stage of the start-up involves its developmental stage – this research will generalise the performance metric due to the fact that there is no universally appropriate performance measurement system for all types of organisations in all conditions (Wadongo & Abdel-Kader, 2014). This study considers the accessibility of information on firm performance and leveraging previous work by Sebora, Lee, & Sukasame (2009) that measured firm start-up performance based on the growth rate, sales, and customer acceptance. The growth has been used by many start-up studies to measure start-up performance (Rompho, 2018), where this study will use sales and the customer growth

numbers. Revenue, operational expenses, and several customers will be used to measure the financial and non-financial performance of the start-up. Though it is arguable that these metrics are irrelevant in the early-stage start-up, these metrics could identify the founder's motivation in developing their start-up and types of funding source that these start-ups currently have.

Early Stage Start-up

There are various definitions of a start-up in the literature, for example, Ries (2011) defined a start-up as; "a start-up is a human institution designed to create a new product or service under conditions of extreme uncertainty." Blank (2013) had his definition; "a temporary organisation searching for a repeatable and scalable business model" – not mentioning the definition of a start-up from the number of employees, the funding size, and the asset owned. Due to its various definitions, this study extends the definition of a digital start-up from the digital enterprise-specific definition by Catinat (2013). The digital start-ups are new micro, small and medium companies that have a high intensity of utilisation of new digital technologies (mainly social, mobile, analytics and cloud solutions) to improve business operations, invent new (digital) business models, sharpen business intelligence, and engage with customers and stakeholders through new (digital) channels. Bosma & Kelley (2019) defined the early-stage entrepreneurial activity is comprised of nascent entrepreneurs that are involved in setting up new businesses and owners of a new business that have established their business for less than three and a half years. Both definitions between digital start-ups and early entrepreneurial activity are used to frame the sample of this research.

The above argument leads us to posit the following hypotheses as depicted in Figure 1:

H1: Alliance Formation has a significant positive effect on Firm Competitiveness. Several recent studies stated that alliance formation has a positive effect on firm competitiveness (Pangarkar & Wu, 2013; Utomo & Simatupang, 2019).

H2: Alliance Formation has a significant positive effect on Firm Performance. The previous study also stated that the formation of alliances also has a positive effect on firm performance (Vries, 2008).

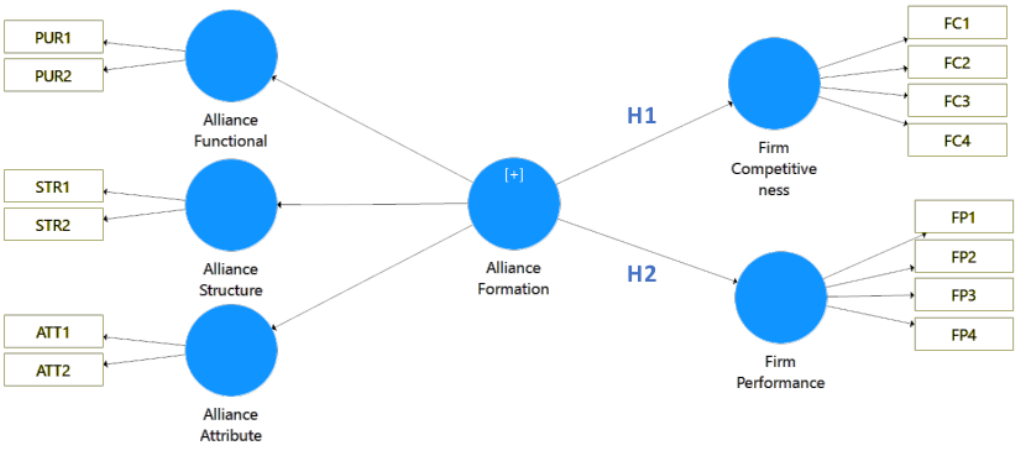

Figure 1. Proposed Research Model

Methods

The primary data was captured using either online or offline questionnaires from 103 start-up companies that listed in the Tech in Asia (TIA) database that is accessible on the website that is generated with random sampling. The start-up is in Jakarta, where it is representing the main concentration of start-up companies in Indonesia. In general, the questionnaires comprise information of the respondent's personal and company information. The questionnaire also comprises of a forced-choices scale where scales are without a neutral category. The forced-choice scale is using a Four-point Likert scale to measure the agreements of the indicator of this study. The four-point Likert was used to avoid the ambiguity selection on the middle point and avoid neutral answers that are usually offered by a five-point Likert scale.

The relational analysis is analysed using PLS-SEM, which involving the Hierarchical Component Model or High-order model. The research model contains two layers of abstraction, the low order construct (Alliance functional, Alliance structure and Alliance attribute) and high order construct (alliance formation), and all indicators of the low order construct are assigned to the high order construct.

Results and Discussion

In the PLS-SEM, this study conducted a model evaluation by evaluating the measurement (outer) model and continued with the structural model (inner). The Measurement (Outer) Model evaluation, as depicted in Table 1, shows that all 14 indicators met the convergent validity, discriminant validity, and composite reliability. The convergent validity of each indicator shows all indicators have factor loading above 0.7 except for the Customer

Acquisition. The discriminant validity and composite reliability show that all variables AVE and CR are above 0.5 and 0.7 respectively.

Table 1. Evaluation of Measurement (Outer) Model

	Variable and Item	Factor Loading
Alliances Functional (AVE=0.768, CR=0.702)		
PUR1	R&D Function	0.844
PUR2	Marketing and Operation	0.907
Alliances Structure (AVE=0.862 CR=0.839)		
STR1	New alliances	0.929
STR2	Alliances Retention	0.927
Alliances Attribute (AVE=0.831, CR=0.797)		
ATT1	Different alliances attribute	0.905
ATT2	Similar alliances attribute	0.918
Firm Competitiveness (AVE=0.641, CR=0.817)		
FC1	Product Development Capability	0.845
FC2	Selling Capability	0.896
FC3	Customer Acquisition	0.677
FC4	Customer Satisfaction	0.768
Firm Performance (AVE=0.780, CR=0.906)		
FP1	Revenue	0.896
FP2	Revenue Growth	0.926
FP3	Customer Acquisition #	0.863
FP4	Customer Acquisition # Growth	0.845

Source: Data Analysis using Smart PLS 3

The Structural model (inner model) evaluation shows the goodness-fit model (R-square) of start-up firm competitiveness and performance constructs, which could be explained by the alliance formation 0.056 and 0.069. It means that alliance formation could explain 5.6% of firm competitiveness and 6.9% of firm competitiveness. The bootstrapping, as depicted in Table 2, results show that the relation between both alliance formation with firm competitiveness and firm performance is significant with the P-value of both relations equals to 0.001 and path coefficient 0.237 and 0.262 respectively.

Table 2. Evaluation of Structural Model (Inner) Model

	R Square	R Square Adjusted
Firm Competitiveness	0.036	0.027
Firm Performance	0.090	0.081
	Path Coefficient	**P Values**
H1: Alliance Formation -> Firm Competitiveness	0.191	0.037
H2: Alliance Formation -> Firm Performance	0.300	0.000

Source: Data Analysis using Smart PLS 3

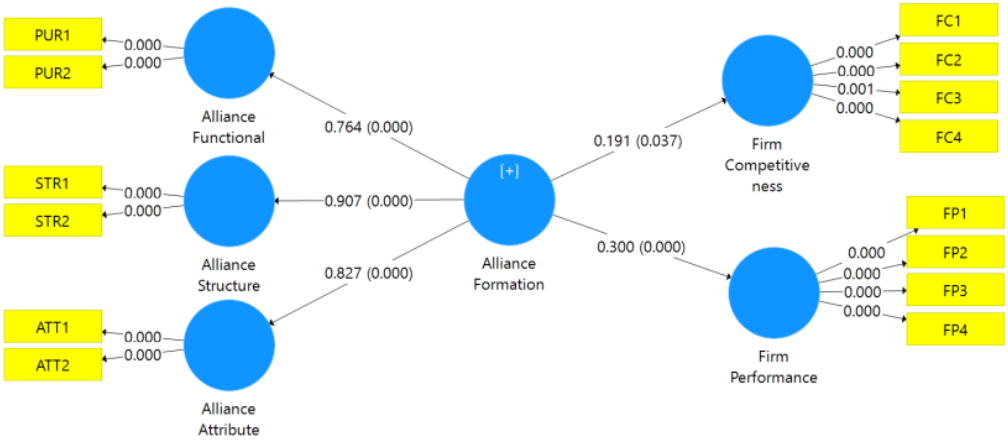

Figure 2. Bootstrapping result (Path Coefficient and P-value)

The explanation of hypotheses testing is as below:

H1: Alliance Formation has a positive effect on Firm Competitiveness. This result aligns with the study by Pangarkar & Wu (2013), Utomo & Simatupang (2019) that stated that alliance formation has a positive effect on firm competitiveness. The multiple alliances could potentially multiply the access to skills that enhance competitiveness in start-up companies through access and exploitation of social capital as a source of substantial competitive advantage. In the context of industry clusters, the alliance formation allows easier mobilisation of resources between a company that will increase its competitiveness.

H2: Alliance Formation has a positive effect on Firm Performance. The previous study also stated that the formation of alliances also has a positive effect on firm performance (Vries, 2008). The formation of an alliance develops a commercialisation network where a start-up allows the gathering of spill-over information on an opportunity to offer their product or services.

The research shows that the start-up needs to develop alliances for value creation activity by partnering on R&D to enhance their offering, as well as value-capturing activity such as sales and marketing. The success of the alliance formation and its impact on firm competitiveness and firm performance depends on two sequences of the process: (1) the capability of the start-up to identify and to select the partners for collaboration; and (2) It is maximising the exchange of knowledge through learning, storing the information capability for co-development, including managing the conflict for a win-win solution (Wang & Rajagopalan, 2015). The variety of the alliance formed to define the function of benefit and also a function of cost by synergistic resource and capability combined with the partners (Wassmer & Dussauge, 2011). The Findikoglu & Lavie (2019) suggested contingency approach on value creation and value capturing activity would be preferable – depending on its needs, a firm may adjust its propensities to standardise, formalise, and centralise alliance management practices. The value capturing relates to customer orientation and resource optimisation activity (O'Dwyer & Gilmore, 2018). Customer orientation relates to the customer relationships built to address customer needs and organisational profit.

The relational analysis between alliance formation with firm competitiveness and performance show that alliance formation has a positive and significant effect on firm competitiveness and performance. The effect of firm performance is slightly higher than the effect of firm competitiveness. This condition could mean that the early effort of start-ups improves and increases their firm performance, which could lead to what it called "premature scaling." Premature scaling is the most common reason for start-ups to perform worse: they tend to lose the battle early on by getting ahead of themselves. They tend to focus on customer acquisition before product/services market fit and a repeatable and scalable business model. They build a product without problem/solution fit, hiring more people with a complex company structure, and focus on profit maximisation too early (Marmer et al., 2011). The recent development of the alliance's capability research shows that alliance formation is the critical point in the development of alliance capability with prior and post alliance, and that start-ups need to be aware of sustainable competitiveness and performance. The previous research in high-tech start-ups shows that the right fit and combination of alliances portfolio will impact firm performance. A sporadic alliance formation and lack of diverse partners cannot bring sufficient learning experience, reducing access to critical information as well as an opportunity for further alliances.

Conclusion

This research is opening a new horizon study on alliance formation, especially in the early-stage company, and how it relates to firm competitiveness and performance. The diversity of alliances that the early-stage company needs to develop are crucial in bringing the firm competitiveness and performance. It could be in purpose to increase the value creation or value

capturing activities, either alliance in the R&D or sales and marketing activity with recurrent or new partners, with the same attributes or not.

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