

The Role Of Alliances Formation In Organizational Ambidexterity And Firm Competitiveness: An Empirical Study In Indonesia Digital Startup Firms)

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Abstract— The creation of a country's wealth depends on the competitiveness of its entrepreneurs and that fundamentally relies on the survivability and capabilities of its small and medium-sized enterprises (SMEs). In order to survive, an SME firm must become ambidextrous, with the capability to manage the paradox in learning, innovation, and transformation in their limited condition, so that they can become more competitive and offer products or services that meet the market demand. To become ambidextrous, a company needs many resources. One way to acquire resources is through alliances. This study models the relationship between alliances formation and firm competitiveness as mediated by organizational ambidexterity using partial-least squares modelling using data from 137 startups in Indonesia. The results showed that organizational ambidexterity has a full mediation effect in the relationship between alliances formation and firm competitiveness. This study argues that the choice of an appropriate partner that is manifested in the Alliances Formation has the main purpose to enable the start-up company to acquire resources to manage the paradox of management in learning, innovation, and decision for transformation. This ability will make them competitive and can design, produce, and market its products superior to those of its competitors.

Index Terms— Alliances, Alliances Formation, Competitiveness, Organizational Ambidexterity, Exploitation, Exploration, Start-up

1 INTRODUCTION

THE wealth of a nation is created at the microeconomic level and comes from the sophistication of businesses and the environment where firms operate [1], [2]. This relates to the companies' sustainable economic value constructed by their long-term profitability [3] and job creation [4]. Companies are the micro units where competition actually takes place and they form competitiveness for nations at an aggregate level [5]. This firm competitiveness is fundamentally dependent on the capability of entrepreneurs that explore and exploit new opportunities through small and medium companies [6]. Entrepreneurship is very crucial for the growth of economy of every country [7].

These small and medium companies are, in nature, limited in resources, processes, structure, and experience [8]-[10]. For them to survive, an organization must attain vital resources through its networks or interdependency with other organizations for survivability and continued success [11], [12]. This network is essential for an organization to achieve its desired outcome [13]; it facilitates market entry, acquiring new technology, leveraging economies of scale, and enhancing new product development capabilities [14]. The research into organization interdependency has been growing and becoming an interest of many scholars in the past few years [15]. However, there is still limited attention and study on the

organization interdependency in the digital era, where a small company can get an economy of scale and access to the resources to compete and disrupt the incumbent market [16], [17]. The understanding of the interdependency of startup companies where they make alliances to acquire resources and increase their survivability therefore is the focus of this research.

2 LITERATURE REVIEW

2.1 Alliances Formation

The formation of alliances comes from the notion of an organization's tie to diversity and is grounded in resource-based theory (RBT), resource dependency theory (RDT), and organizational learning as part of organizational study [18]. After an organization decides to enter into alliances, they need to select the appropriate partners for engagement [19]. [20], in their previous study on organization inter-dependency, conceptualized the formation of an alliance into three domains: functional, structure, and attribute domains.

The conceptual "function" of alliances focuses on the value adding the activity of alliances. The marketing and production-related alliances can be considered as knowledge-leveraging, as the purpose of the partnership is to leverage the existing knowledge for production and marketing purposes. The research and development-related alliances can be regarded as knowledge generating, as there is new knowledge being developed because of these alliances [20]. "Structural" function defines whether there is or is not a prior relationship with the partners [21]. By forming alliances with a partner with a prior relationship, success of the alliance can be increased, as it can also rely on prior experience and inter-firm

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trust. Such alliances enhance the predictability and reliability of collaboration [22], [23]. In contrast, when partners have no prior relationship to a firm, the firm can only broaden its reach and seek for knowledge that cannot be acquired from this new partner. "Attributive" function refers to a firm forming alliances with partners whose organizational attributes are considerably the same or different from those of its former partners [20], e.g., experience, size, and industry focus.

2.2 Organizational Ambidexterity

Organizational ambidexterity (OA) stems from the notion of organizational capability to deal with conflicting activities: exploitation and exploration [24]. These are two opposing activities that require a different kind of environment, context, and structure [25]. The study on organizational ambidexterity becomes an emerging research trend in the organization management [26]. The study covers a lot of disciplines and perspectives, including alignment and adaptability, possibilities, competencies, innovation, learning, strategy, and practice development [27]. Despite the various research streams on OA, these researchers only focus on one perspective of the paradox or conflicting activity, which removes the complexity of organizational behavior in the real world [28]. Expanding the initial concept from dynamic capability [29], [28] showed that a company attains its competitive advantage through sensing, seizing, and reconfiguration through absorptive, integrated, and adaptive capabilities that reflect organization learning, innovating, and optimizing paradox.

2.3 Firm Competitiveness

Competitiveness is a complex subject that covers a range of studies at various levels. It has been conceptualized and measured at the country, industry, cluster, and firm levels with different dimensions and approaches. Its concept development cannot be separated from the Porter researchers that focus on the 5Cs: competition, competitive strategy, competitive advantage, competitiveness, cluster, and creating shared value [2]. [30] defined firm competitiveness as a firm's long-run profit performance and its capability to compensate its stakeholders, e.g., employees and owners. Competitiveness is a firm's capability to fulfill its dual purposes: meeting customer requirements at a profit. This capability is realized through offering market goods and services that are valued by customers as being higher than those offered by competitors, and achieving competitiveness requires a firm's continuing adaptation to changing social and economic norms and conditions [31]. We can draw several attributes based on the above definition that firm-level competitiveness will have innovation, productivity, efficiency, and profitability factors comparable with another firm in their specific market. This research tends to agree on the widely accepted firm-level competitiveness of a company that is its ability to design, produce, and market its products superior to those of its competitors', considering both price and non-price factors [32].

3 METHODOLOGY

3.1 Data Collection

The pre-test survey revealed the difficulty of getting a response from the chosen start-up companies, as it takes 1-3 weeks for a single response. Also, much of the information about the sample is invalid due to a change of address or that the company was closed. The pre-test was conducted using a combination of email, mail, and telephone calls based on data taken from the start-up company directory called Tech in Asia (<http://www.techinasia.com/startup>). Looking at the accessibility to the sample and the structure of the population, this research is used a random sampling method of digital startup companies with a sampling frame of start-up companies that participated in an exhibition between November 2016 – April 2017. There were 137 companies that responded to this study questionnaire.

3.2 Measure in Questionnaire

The quantitative questions are probes using a four-point Likert scale to measure the agreements of the indicators of this study. This method was chosen to avoid the ambiguity selection on the middle point and avoid neutral answers on a five-point Likert scale. It measured three latent variables: 1. Firm Competitiveness (FC) that comprises indicators of the capability of the company to design and develop, sell and market, customer acquisition and retention capability; 2. Organizational Ambidexterity (OA) that comprises of exploitation and exploration; 3. Alliances Formation (AFO) that comprises of structure, attribute and purpose.

3.3 Method of data analysis

The missing data analysis showed that only 1.72% of the total data was missing. This number was below the 15% threshold permitted for missing data, following previous studies [33], [34], which dealt with Expectation Maximization (EM) methods. The mode statistic was used to measure the frequency of the data. The mode is the score or category that has the greatest frequency [35]. The mode is a useful measure of central of tendency because it is used to determine the typical or average value of any scale of measurement. It is helpful because it corresponds to an actual score in the data.

Smart PLS 3.0 was used for the structural equation modeling (SEM) analysis with the partial least squares (PLS) estimation technique [36]. SEM analysis is a second-generation multivariate analysis that allows simultaneous assessment of multiple independent and dependent constructs, including multi-steps paths and mediating and moderating effects. SEM can observe the latent variable (LV) with a high complexity. It can observe non-normally distributed data with all kinds of measurement scales, including interval, nominal, ordinal, and ratio, with a small number of samples proven and widely used [37].

SEM works with two models for reporting: (1) the measurement model (outer model), which describes the relationship between the latent variables and their indicators; and (2) the structural model, which outlines the relationship between the latent variables. PLS estimates the loading and path parameters between latent variables and it maximizes the variance explained for the dependent variables [38].

In several studies, the constructs that the investigation wishes to examine are complex and operationalized at a higher level of abstraction. This higher-order construct or hierarchical latent variable model, or hierarchical component models, are explicit representations of multidimensional constructs that exist at a higher level of abstraction and are related to other constructs at a similar level of abstraction completely mediating the influence from or to their underlying dimensions [39]. Smart PLS deals with this high construct using the Two-Stage Approach [37], [38], [40], [41]. In stage one, the latent variable scores by running PLS algorithm from the latent variable construct with its indicators. In stage two, the measure uses the latent variable score as an indicator for higher order constructs and another construct within the model for structural model evaluation.

3.4 Research Framework and Model Construct

A research model for this study was constructed to examine the mediation effect of organizational ambidexterity in relation to alliances formation and firm competitiveness. The firm competitiveness is a four-indicator construct, while the alliances formation and organizational ambidexterity are high-order constructs, as depicted in Fig. 1. The alliances formation has three dimensions: alliances structure, attribute, and purpose, and organizational ambidexterity has two dimensions: exploitation and exploration in learning, innovation, and transformation, respectively, as depicted in Figure 1.

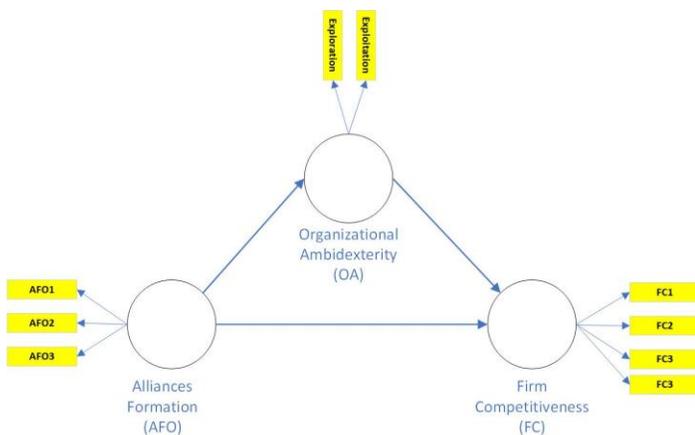


Figure 1. Complete Research Model

4 RESULT AND DISCUSSION

The descriptive analysis showed that very often companies consider all aspects of the alliances to choose the appropriate partners based on their attributes, structure, and function. The least consideration in alliances formation is related to the function of the alliance, especially for the purpose of research and development to generate new knowledge and innovation. There are two aspects in the function and purpose of alliances: knowledge leveraging or knowledge development [20]. For start-ups to leverage and develop new knowledge, they need to overcome their smallness and newness as a company [42],

which causes scale disadvantages and limited resources through its social ties. The social ties will provide these start-ups with lower market price resources as long they have an embedded relationship that is characterized by mutual benefit and a sense of mutual obligation [43], [44].

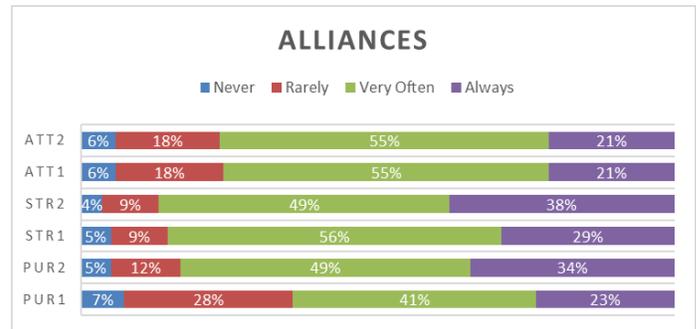


Figure 2. Alliance Response Distribution

The alliance’s function or purpose is to fulfill the value chain function. The value chain [45] or “the business system” [46] is a collection of activities that are performed to design, produce, market, deliver, and support a product. A start-up company can develop a alliances strategy to add value to each of these activities to acquire resources and develop capabilities to solve their customer problem.

The alliance’s structure requires the concept of relational and structural embeddedness [44]. The relational embeddedness and structural embeddedness allow a nascent firm to get lower cost resources due to a history of interaction among individuals that confers a sense of deep-seated trust and trustworthiness among individuals [47], [48]. Structural embeddedness is clan-like relationship that surrounds the focal actor in a highly cohesive, interconnected, dense network of ties to individuals that exhibit shared norms and behaviors, for example family and friends [47]. The main difference between these two is in the reason to provide the resources. The relationship embeddedness results from mutual benefits based on trust, while structural embeddedness results from the perceived obligation to the entrepreneur [49].

The alliance’s attributes relate to the similarity of attributes between companies that allow for experience transfer. A company with similar attributes, similar problems, and similar experience tends to ease the sharing of assets and information between the allied companies, and the information exchanged is more trusted [50]. They extend further that similarity in business strategy, customer, and partner proximity will lead to a greater transfer of experience.

This study conducted a confirmatory factor analysis to measure the convergent validity, internal consistent reliability, and discriminant validity of the outer model. The bootstrap result also showed that all of the indicators are valid formations of its respective latent variables, as depicted in Fig. 3. The alliance’s purpose, structure, and attributes are the constructs that form the alliances formation where the p value < 0.001. The exploration and exploitation are also the construct that form the ambidexterity, including all of the firm competitiveness indicators.

Table 2. Direct Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
AFO -> FC	0.038	0.040	0.090	0.428	0.668
AFO -> OA	0.447	0.456	0.060	7.402	0.000
OA -> FC	0.472	0.475	0.094	5.000	0.000

Table 3. Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
AFO -> FC	0.211	0.217	0.053	3.961	0.000

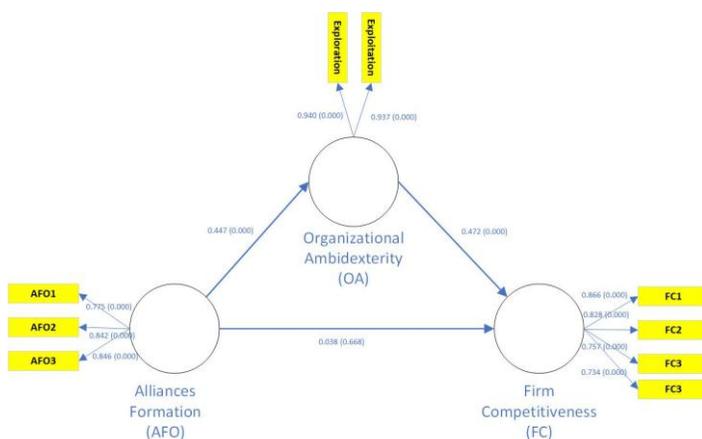


Figure 3. Path Model Analysis (P value)

The previous study results show that the diversity in alliances has a positive impact on firm competitiveness. As an example, the study by [18] argued that a greater number of alliances could potentially multiply the access to skills that enhance competitiveness in start-up companies. In a theoretical perspective, the network will facilitate the creation and exploitation of social capital that is regarded as the source of competitive advantage [51].

The inner model SEM analysis as depicted in Figure 2 showed that alliance formation significantly predicts organizational ambidexterity ($\beta=0.447$, $p<0.001$). It is explained as the diversity of relationships built by the these firms that causes the organization to have a greater opportunity to learn to interact with others and extract complex benefits from it [52]. Surprisingly, the alliance formation does not have a significant relationship on firm competitiveness ($p = 0.747$). Instead, alliances formation has an indirect impact on firm competitiveness through organizational ambidexterity $OA \rightarrow FC$ ($\beta=0.211$, $p < 0.001$). Firm network diversity provides several benefits to the organization. It provides heterogeneity of problem-solving ammunition and overcomes familiarity traps that limit the organization in learning new information [53]. In the majority of companies, during the "birth" and "growth" stages of the organization lifecycle, alliance formation does not directly

affect firm competitiveness. It enables the ambidexterity of the company in learning, innovating, and transforming toward firm competitiveness. The result contradicts [18] study in entrepreneurial firms, where forging a larger number of alliances will lead the company to enjoy superior access to resources and learning benefits, resulting in better performance versus others. We argued that in this early stage of organization, the alliance formation objective is to develop entrepreneurial firm competitiveness by allowing these firms to develop more innovative product and services, a better way to sell them, and more insights into how to retain their customers.

In organizations, the process for gathering input and the transformation process to output could be related to alliances, especially in the small and medium firms where they have limited resources. These processes will relate to exploitative or explorative activity of the organization. [54] argued that there are three types of alliances from an exploitative and explorative perspective: learning alliances, business alliances, and hybrid alliances, depending on the level of exploitative and explorative activity.

5 CONCLUSIONS

The results showed that organizational ambidexterity has a full mediation effect in the relationship between alliances formation and firm competitiveness. This study argued that firm competitiveness, which is the ability of a company to design, produce, and market its products superiorly to those of its competitors, can be attained by managing the paradox of management in learning, innovation, and decision to transform by startup companies. In the condition of limited resources, the selection of a partner is important in acquiring knowledge and resources: (1) To fulfill their value chain function either by knowledge leveraging, e.g., marketing, production, and business operation, or knowledge generating, e.g., research and development, both below market cost; (2) Leveraging new or previous partnerships with either a mutual benefits purpose such as co-branding or services bartering between start-ups and leveraging social relationships with family or friends; and (3) Leveraging the partnership with the same or different attributes.

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