

Developing Dynamic Capability by Resources Consolidation and Its Impact on Performance: A Study in Entrepreneurial Ecosystem Perspective

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Abstract - A dynamic capability is a strategic key to addressing the ever-evolving business turbulence environment in the entrepreneurial ecosystem context. The turbulence will be related to external contexts such as government policy, technological development, funding strategy, and network connections. Business turbulence will create a natural selection, and entrepreneurs can survive when they can manage internal entrepreneurship resources such as human capital, brand equity, digital culture, and product development. Both internal and external will represent the entrepreneurial ecosystem context as crucial resources for ensuring that entrepreneurs continue to be flowering. The constantly changing resources, growing, and developing, become an unpredictable phenomenon, requiring a dynamic capability to convert it into entrepreneurial performance. This study is using qualitative approach. The direction of the study is to find out the crucial factor of entrepreneurial ecosystem resources to create performance through dynamic capability as a mediation variable. The analytical instrument is literature study on related and relevant previous paper. It is expected that the result can be the basis for future research by confirming dynamic capability as a construct that fully mediates the gap between resource and entrepreneurial performance in the entrepreneurial ecosystem perspective.

Keywords - entrepreneurial ecosystem context, dynamic capability, entrepreneurial performance

I. INTRODUCTION

Entrepreneurial Ecosystem (EE) allows interdependent interaction between the actors to create a sustainable cycle system that brings advantage in a holistic approach [1]. Recently, entrepreneurs must be considered part of EE to keep their organization surviving [2]. Scholars reveal that business models are evolving and constantly changing [3]. Business developed from a conglomeration model in the 1980s to a specialty that only focuses on one industry. Collaboration is crucial for entrepreneurs to cross the boundaries of industrial development as a unit that forms an ecosystem to face future business challenges [4], [5]. Tight business competition forces entrepreneurs to take relevant steps to create business performance. Entrepreneurs must strengthen the chain of cooperation with suppliers, consumers, business partners, and the social community in the ecosystem scope [6]. The integration of entrepreneurs with other actors in the ecosystem

strengthens the building in the face of business turbulence. According to Teece [7], the entrepreneurial ecosystem is a system that offers mutually beneficial interconnections between actors, thereby strengthening networks and leading to increase business growth. EE makes it easier for entrepreneurs to undertake strategic resources consolidation to create self-sustaining to overcome the business turbulence. However, business resources continue to develop and change along with market growth in EE, so that dynamic capability is needed to transform resources into performance [8]. Dynamic Capability has become a strong construct in many studies in building, managing, renewing resources and responding to market changes [9]. Teece [7] emphasized that robust dynamic capability is when entrepreneurs can elaborate on EE resources in all lines related to market sensing, seizing, and transforming into business performance.

The ability to integrate resources in EE is a challenge for entrepreneurs. These resources include internal and external context. Internal context is the capital on entrepreneurs, such as human capital, brand equity, digital culture, and product development. Meanwhile, in the external context, the researchers highlighted aspects outside of entrepreneurship and as crucial actors in EE, namely government policy, technological development in academic scope, funding strategy in the banking sector, and network connections of society [10]. Comprehensive resources are the key for entrepreneurs, especially SMEs, to face market challenges. SMEs are prominent supporters of national economic growth, especially in Indonesia accounting for 61.07% of gross domestic product (GDP) [11]. It is supported by various studies in economy and business, where SMEs build performance to achieve competitive advantage and encourage an increase in the GDP in a productive economy [12], [13]. Especially during the COVID-19 pandemic, SMEs became the government's focus to restore the national economy through targeted policies. However, entrepreneurs at SMEs have decreased to 39.4% [14] with an unemployment rate of up to 7% [15]. Changing consumer lifestyle made up most SMEs and resulted in a recession in Indonesia of -5.4% in the second quarter of 2020 [16], so there was a significant decline in performance. SMEs struggle when standing alone, they need a driver that encourages business performance restoration, such as

integrating resources in EE [17], [18]. However, resources as input for SMEs are not automatically converted into business performance [10], [19]. Stam [20] also revealed that the resource element of EE is always evolving and changing so that it can become a bottleneck in entrepreneurship activities. The ability of SMEs in managing and utilizing resources depends on competence in forming competitive advantage in line with market conditions that are not constant, so that dynamic capability becomes a crucial mediator for entrepreneurs to process resources on EE into entrepreneurial performance. This study also attempts to address the limitations of Yan [21], which does not include aspects of entrepreneurial capabilities and opportunities by proposing EE resources in the internal and external context.

This study aims to find out the crucial factor that related to EE's resources on encouraging entrepreneurial performance and present conceptual framework that offers dynamic capability as mediating role between EE resource and Entrepreneurial Performance.

II. METHODOLOGY

A qualitative approach is used in this study to examine the crucial factor of EE resource on leveraging entrepreneurial performance and find out the mediating role variables that can bridge the use of ecosystem resources to create entrepreneurial performance by proposing dynamic capability. This study is based on a literature review on relevant sources such as published and recognized journals, as well as reports on research institutions as complementary sources. The object focus of the study is Small and Medium Enterprises (SMEs). SMEs were chosen because of their strategic role in supporting the national economy and being one of the vital actors in the integration of the entrepreneurial ecosystem. The journals that are the material are search results using keywords that refer to the entrepreneurial ecosystem and SMEs. Relevant papers were found to be in the 2011 to 2021 timeframe to get the latest discussions regarding the themes raised. The relevance of the paper was initially considered by reading and analyzing based on the title and abstract. Then, analyze the papers that have been sorted based on their contents that have relevant findings. The paper displays the conceptual framework of entrepreneurial ecosystem by connecting the EE resource on entrepreneurial performance through dynamic capability. The measurement list of every construct is shown in Appendix 1.

III. ENTREPRENEURIAL ECOSYSTEM

A. The Element of EE Resource

Based on previous research, EE does not have a clear and standard element in one reference, where each scholars concludes that the EE element is in line with the perspective study in a certain scope. Table 1 shows how the previous study define EE by different perspective.

TABLE 1. THE ELEMENT OF EE

Previous Research	Elements of EE
Isenberg [22]	Human Capital, Market, Policy, Finance, Culture, Supports
Sures & Ramraj [23]	Moral support, financial support, network support, government support, technology support, market support, social support, environmental support
Mason & Brown [24]	Government policy, leadership, finance, human capital, support, culture, market, technology, and knowledge
Spigel [25]	Cultural Attributes (Supportive Culture, Histories of Entrepreneurship), Social Attributes (Networks, Mentors and role model, worker trait, investment capital), material attributes (policies, universities, infrastructure, open markets, supports services)
Sussan & Acs [26]	Leadership, government policy, infrastructure support, formal institution support, technology, and knowledge
Alvadalen & Boschma [27]	Culture, markets, technology, and knowledge
Acs et al [28], [29]	Leadership, government policy, finance, human capital, technology, and knowledge
Davari [30]	Research and Development (RND), financial resources, market, support services, infrastructure, culture, policies, human capital
Stam & van de Ven [20]	Formal institutions, culture, networks, physical infrastructure, finance, leadership, talent, knowledge, demand, intermediate services, productive entrepreneurship
Scuotto [31]	Financial capital (accessible market, funding, and finance), institutional capital (policy, support structure), knowledge capital (research universities, education and training, human capital), social capital (networking, cultural support)
Wurth et al [32]	Social (leadership, human capital, knowledge, physical infrastructure, finance), cultural, political, and economic

Basically, the EE elements that are most widely referred to and used as the basis for ecosystem development is Isenberg [22] through resources in the form of human capital, market, policy, finance, culture, and support. Human capital is a key driver for entrepreneurs in acquiring talent in the knowledge-based economy to create a competitive advantage [24]. Human capital is a crystallization of skilled manpower, including managerial and technical capabilities to create performance [28], [31]. Market is an entrepreneurial aspect related to marketing strategy with market orientation to create innovation [24]. It emphasizes the ability of entrepreneurs to utilize market information obtained through investigations to be managed into strategic knowledge and enable opportunities for customer satisfaction and market expansion [30], [31]. Policy in EE is a resource that looks at the relationship between the entrepreneur and the government as a facilitator or controller of the economy through policy [23]. This is a crucial resource where entrepreneurs and government can work in harmony to support each other to create profits. Finance is a tangible resource that entrepreneurs need to pay attention to develop their business faster through the right funding strategy [24], [26], [32]. Culture refers to the values that entrepreneurs instill in the entire organization and create an entrepreneurial environment [25], [27]. Meanwhile, support for EE describes collaborative activities that

entrepreneurs can do with partners to create sustainable innovation, such as university or professional services [20], [23]. Partners here are usually associated with research and development institutions to build open innovation from the results of internal collaboration and external knowledge [32].

By seeing from the development of EE from time to time, the resources that are supporting elements of EE are dynamic in line with the times and have different aspects based on the perspective of each scholar. However, broadly speaking, a new aspect that emerges and complements Isenberg's concept is the role of technology and knowledge. Isenberg [22] alludes to the crucial role of human capital in the knowledge-based era but does not elaborate on the importance of knowledge for entrepreneurs to seize opportunities and create business strategies to achieve competitive advantage. Some researchers also said that knowledge and technology cannot be separated by entrepreneurs to survive in the knowledge-based economy. This is due to the role of technology as a form of organization that moves dynamically to achieve change readiness. Technology is the infrastructure used by entrepreneurs to acquire knowledge in the digital era. Technology facilitates the flow of knowledge iterations within the organization as well as internal-external knowledge to run more efficiently and effectively in capturing potential market information. Entrepreneurs today must pay attention to the digitalization aspect by placing technology as a strategic infrastructure in EE [26], [33]. The indicators that build each construct are described in table 2.

B. Entrepreneurial Ecosystem Context

Entrepreneurship studies attract many researchers worldwide because of their core role in economic growth both regionally and nationally [1]. The evolution of entrepreneurial development moving from a conglomeration type to specialization is influenced by various factors such as technological developments, culture, government policies, and people's tastes against market changes [3]. High market competition and business complexity are currently encouraging entrepreneurs to find new strategies to overcome challenges by establishing an entrepreneurial ecosystem. EE opens opportunities for interconnection between actors by sharing knowledge, culture, creating innovations from a collaboration between actors, and integrating resources [34]–[36]. EE is closely related to the Resource-based View (RBV) theory, where capital in EE is a complex aspect of achieving goals [37]. In the RBV theory, resources are classified into internal and external contexts.

1) Internal Context

Resources in EE are connected to the factors of the entrepreneur or what is commonly referred to as the internal context. According to several studies, internal

resources in EE include human capital, the willingness of the actors to share ideas [10], [38], brand equity [39], digital culture [40], and product development [41].

Human Capital

Human Capital is a resource possessed by entrepreneurs to utilize information, knowledge, and creative skills in creating added value [42]. The presence of human capital enables the entrepreneur efficiency as an organizational asset [10]. Although the entrepreneur is not a driver in EE, considering that EE is a dynamic system with a self-regulating connection, the entrepreneur is one of the crucial parts of EE as a connector [35]. Each EE in each region has different drivers, such as Boston, which emphasizes financial actors and non-profit organizations that emphasize human capital as a catalyst. Human capital is the key to EE's success as well as challenges found in Qatar, where the skills needed in technological start-ups are not in line with the education system, it is difficult for entrepreneurs to find and collaborate with human resources with qualified human capital both from Qatari and outside the country [43].

Brand Equity

Brand equity refers to consumers' perceptions of the value of a business organization for its products [44]. It is representative of the market aspect of EE which is market oriented. Brand equity is a crucial aspect considering it is essential for entrepreneurs to be consumer-oriented to increase their chances of winning in market competition [45]. EE enables intercorrelation between business organizations and consumers to create products that are right on target according to market needs and desires. The growth of brand equity in society has resulted in a close relationship with the business organization and has propelled the product to a leadership position in the market [46]. According to Selase Asamoah [39], brand equity is represented by brand awareness, brand loyalty, and perceived brand. Brand awareness arises when consumers recognize entrepreneur products / services without being told and attached to the product. Brand loyalty is high consumer confidence in products. Usually, consumers do not easily move to competitors even though they provide attractive offers, provided that the brand is perceived where the public's assessment of the product is still the same and superior.

Digital Culture

Digital culture is an aspect that appears in line with technological developments that require entrepreneurs to be ready to adopt digital technology and spread it throughout the organization in the form of culture [24], [27]. The development of technology is one of the determining factors for the success of entrepreneurs in market competition [47]. The ability of entrepreneurs to adapt and acquire the latest technology is the key to

capturing target markets. Today, the internet creates a digital world that opens up the boundaries of time and space [48]. Digital technology is a unique attraction for consumers and challenges entrepreneurs to take advantage of it [49]. Therefore, entrepreneurs must be able to present a digital culture in business organizations to survive in the market. In the context of the digital economy, EE supports digital transformation not only for companies that have a central core in technology but overall in the process of product/service creation, marketing, and interconnection between digital-based actors [50].

Product Development Strategy

Product development strategy is one of the main aspects for entrepreneurs to maintain the viability of their business organization [21]. It is a resource that reflects the human capital of EE to create performance [30]. Product is the main output directly accepted and felt by consumers and seen by the wider community [51]. Therefore, the strategy in product development is a resource that must be considered in EE.

2) *External Context*

Internal resources cannot stand alone to support EE, and external resources are needed to create synergies. EE's success lies in the ability of all actors to collaborate both in the knowledge infrastructure and in mutual relationships.

Government Policy

Policymakers are one of the actors in EE who have a significant role in the aggregate to set policies that are right on target for entrepreneurs and other actors [21]. For SMEs, government policy gives significant impact on creating supportive environment so that they can survive in tight market. Policymakers are expected to provide support both in knowledge and in giving aids to business processes [23], [52]. It is linear with [53], where policymakers focus on creating a framework that makes it easier for entrepreneurs to self-organize in the ecosystem. The role of government in policy formation will impact long-term EE, which aims to accelerate entrepreneurial growth [2], [32].

Technological Development

Technological development represents the RND transfer process originating from the academic sector into the industrial sector or, in this paper, the SME sector [28], [29]. The results of RND carried out at educational institutions such as universities become the primary material for the implementation of technology produced at SMEs by entrepreneurs [21], [30]. Besides, public research is also one of the actors that collaborate with entrepreneurs to support the fulfilment of information and knowledge on research results to formulate business

planning. The presence of technological development makes it easier for entrepreneurs to decide on steps to enter the market according to the preferences of target consumers [52].

Funding Strategy

Funding Strategy is often an obstacle for entrepreneurs, especially start-up companies as SMEs, at the beginning of business development, as happened in Qatar, where banks only invest in secure projects [43]. Access to finance is a crucial tangible resource for entrepreneurs as a capital for business development [21], [31] revealed that finance has positive impacts on entrepreneurial innovation, which will lead to business performance. It shows that the funding strategy is a resource to increase the ability of entrepreneurs to achieve their goals [25], [32].

Network Connection

The interaction of entrepreneurs with actors in the ecosystem creates a network connection and becomes a potential resource for entrepreneurs [54]. Collaboration with stakeholders in EE plays a vital role in the business operator to create innovation [36]. Relationship in vertical and horizontal linkages open the value-capture through a flow of knowledge [20], [31]. Network connection can accelerate SMEs in building engagement with the stakeholder and customer in creating innovation. EE become a platform to exchange ideas and goals to increase the network density.

C. *Dynamic Capability*

Changes in resources in EE are constantly evolving and require Dynamic Capability to convert them into entrepreneurial performance [55]. The influence of the business environment that triggers changes in business strategy encourages entrepreneurs to have the dynamic capability to renew funds and resources rapidly [56]. Business uncertainty in the future presses entrepreneurs to prepare themselves for challenges. According to Wang & Kim [57], the dynamic capability is divided into three components: adaptive capability or sensing capabilities, in which entrepreneurs are encouraged to identify market opportunities, such as market sensing and managing resources [58]. Then, absorptive capability becomes the ability for entrepreneurs to iterate knowledge from both internal and external to the organization. It is linear with the reconfiguring capabilities, transform resource to create added value by the learning process. Innovative Capability is the ability of entrepreneurs to develop innovations from upstream to downstream in both methods, processes, and products. It is linear with the seizing capabilities that enable the management strategy to capture value from the opportunities in the ecosystem [59], [60].

D. Entrepreneurial Performance

Entrepreneurial performance is a measure that shows the level of success of an entrepreneur in running his business. The study focuses on entrepreneurial performance, which comes from the following components: annual sales growth, profit growth, market expansion, number of product/services, and employee performance [61], [62].

III. CONCEPTUAL FRAMEWORK OF EE

Based on the discussion of EE resource in escalating entrepreneurial performance, the following hypothesis is formulated with the conceptual framework as follows:

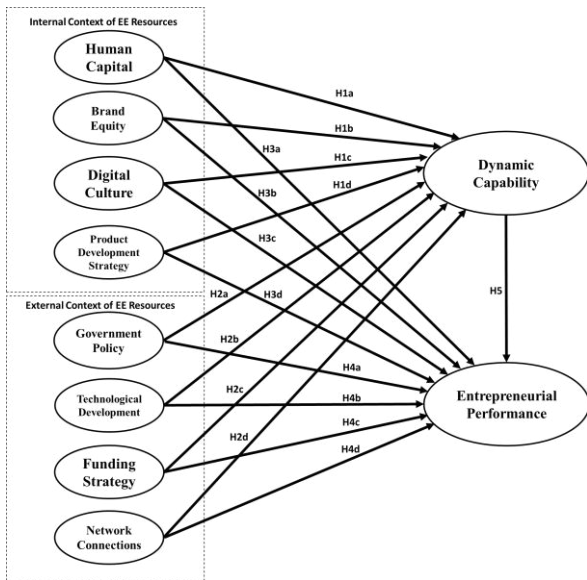


Figure 1. Conceptual Framework

A. Internal context of EE Resources and Entrepreneurial Performance

Internal context is constructed by human capital, brand equity, digital culture, and product development. Human capital represents resource as a valuable asset that significantly impacts performance [63]. Human capital is one of the keys to encouraging competitive advantage [64]. Human capital integrates the HR system in the organization as a basis for policymaking [65]. SMEs must also pay attention to the level of brand equity, which includes consumer loyalty as a strategy to survive in the tight market competition [39]. Brand equity is an intangible asset that belongs to the Valuable, Rare, Inimitable, and Non-substitutable or VRIN criteria aspects by Barney [64], so that it becomes an important component in encouraging entrepreneurial performance. For example, when the brand awareness in consumer brand equity is high, it will reduce costs for the marketing plan because brand awareness will automatically lead target consumers to make purchases without further

action. In addition, consumer confidence that results from high perceived quality will secure the organization's position from the competition with competitors and lead to a guaranteed entrepreneurial performance in the safe zone [45]. Therefore, the actions taken by entrepreneurs in determining strategic resource steps are the key to organizational success.

During the recent rapid technology development, digital technology is a crucial input that entrepreneurs must have, including competence in operating it. This competence grows in a digital culture planted by entrepreneurs in the organization so that digital spread can be evenly distributed across all organizational entities and become a weapon in facing challenges in the digital age [66]. Digital culture facilitates entrepreneurs to think digitally and innovatively in line with market developments that create new consumer experiences based on digital technologies [67]. Digital technology correlates with product development to create disruption in the market with the emergence of inimitable products that are accepted by the community [68]. Ramli [69] emphasized that the new product development strategy is a stronger variable than the market itself to boost entrepreneurial performance. Market development strategy is important, but to enter the market itself requires a product that is right on target so that it can easily create a crowd of consumers. Therefore, the formulation and implementation of product development determines the level of entrepreneurial performance. The hypothesis proposed is as follows:

H1: *Internal context of EE resources: (a) human capital, (b) brand equity, (c) digital culture, (d) product development strategy, has a significant effect on Entrepreneurial Performance.*

B. External Context of EE Resources and Dynamic Capability

Most of the entrepreneur's goal in the business competition are to become market leaders with inimitable products/services, making it difficult for competitors to reach. Dynamic capability encourages the entrepreneur to survive in the existing business by elaborating internal resources and disrupting the market, and it needs external resource to collaborate with [70]. Based on Jantunen et al [71], to maximize performance, entrepreneurs with dynamic capability must achieve a high degree of sensing the external environment and reconfiguration of the resource, however with a low level of seizing in capture value such as through investment. It means that integration between external actors is important and influences each other to create performance through dynamic capability. Why dynamic capability? The uncertainty aspect is attached to the external context, such as a funding strategy dealing with financial turbulence in achieving a survival rate [72], government policy that encourages the emergence of innovative dynamic in

technological development [73], and network connections built in line with technological developments such as social media-based co-creation [74]. It shows that dynamic capability is the key to integrating external resources [75], [76]. The hypothesis proposed is as follows:

H2: External Context of EE: (a) government policy, (b) technological development, (c) funding strategy, (d) network connection, has a significant effect on Dynamic Capability.

C. Internal Context of EE Resources and Dynamic Capability

One of the main resources that build an integrated EE is the internal context resource. Resources such as human capital, increasing brand equity, planting digital culture, and product development processes are the raw materials for creating entrepreneurial performance. However, an internal context resource is limited to input for entrepreneurs who cannot directly influence entrepreneurial performance. Like human capital in entrepreneurs, it is a strong foundation for building learning processes in organizations to create product/service innovations. In line with Zainol [77], where human capital is a significant independent variable in boosting performance when getting encouragement from the mediating variable. In addition, the presence of the aspect of brand equity affects the pattern of the marketing team's strategy in capturing target markets as an added value to create innovations that will increase entrepreneurial performance [46]. Then, the role of digital culture and product development strategy is a static input that requires a middle concept to mobilize resources and maximize output, such as the concept of dynamic capability [40], [41].

Dynamic capability is a concept that covers the integration and reconfiguration process of the complex relationship between resources and performance to win market competition [7]. Human capital resources come from entrepreneurial intellectuals in the form of competencies, education, and training results. Human capital can be built in a vibrant, dynamic atmosphere to generate knowledge to perform in EE [38]. Then, the dynamic capability is needed in marketing to create brand equity in line with the actual use of technology such as social media [78] can capture the best product development strategy [79]. Social media is embedded in digital culture as a new platform with significant power on engaging a dynamic market. Dynamic capability enables entrepreneur in elaborating resource in new ways in line with the changing market [57]. The hypothesis proposed is as follows:

H3: Internal Context of EE: (a) human capital, (b) brand equity, (c) digital culture, (d) product development strategy, has a significant effect on Dynamic Capability.

D. External Context of EE Resources and Entrepreneurial Performance

EE allows for mutual relationships between the actors, whether internal or external. External context of EE is a resource that helps entrepreneurs exceed the boundaries outside of the organization to improve performance [80]. External resources such as government policy, technology development, funding strategy, and network connection. When external actors of the organization can work together, it will create robust EE with full potential to be successful [81]. For example, one of the roles of government is to create a vibrant EE that helps entrepreneurs grow and sustain themselves in their area [82], [83]. Government enables collaboration between educational institutions that support potential research of technology development to be implemented in the SMEs.

The connections that are built between actors in EE open up opportunities in sharing knowledge to sharing capital in value co-creation, such as opening the funding opportunity to the actors that results in a win-win relationship [84]. Ben Hassen [43] revealed the importance of access to finance for entrepreneurs as capital in business development, especially for start-up organizations [21], [85]. In line with the findings of López Salazar et al [86], revealed the significance of working capital, investment and funding decision for entrepreneur especially SMEs which needs an injection of more funds to create the performance. In addition to finance, a network connection is also crucial for entrepreneurs, where the network will form collaborations that generate potential knowledge, such as knowledge spillover, to get competitive advantage [87]. It is in line with Pankov et al [54], which emphasizes three main pillars to build entrepreneurship: a supportive environment from network connection, besides disruptive standards and reforming the paradigm. The hypothesis proposed is as follows:

H4: External Context of EE: (a) government policy, (b) technological development, (c) funding strategy, (d) network connection, has a significant effect on Entrepreneurial Performance.

E. Dynamic Capability and Entrepreneurial Performance

In the RBV perspective, the dynamic capability is embedded in the role of an entrepreneur in integrating internal and external resource to create a performance [70]. Entrepreneur challenges are always faced with uncertain changes in market competition, and dynamic capability becomes robust power to control it [19]. The ability of entrepreneurs in handling change reflects entrepreneurial performance. Strategies for integrating resources to overcome change consider aspects of the dynamic capability that entrepreneurs have to reduce costs and shorten times [88]. Entrepreneurs with high dynamic capability will be able to counter the risk and take the

opportunities to expand the market and achieve good performance [79]. According to Jantunen et al [71], the combination of dynamic capability and internal changes can create a transformation in the organization to maintain the existing business. The hypothesis proposed is as follows:

H5: *Dynamic Capability has a significant effect on Entrepreneurial Performance.*

IV. CONCLUSION AND FUTURE RESEARCH

To win the market competition, entering EE is a strategic step for entrepreneurs. The building elements that are crucial factors in EE resources are divided into internal and external contexts. Internal context refers to human capital, brand equity, digital culture, and product development strategy. While the external context refers to government policy, technological development, funding strategy, and network connection. All these elements are crucial resources in creating entrepreneurial performance. The theoretical contributions of this research are: first, this study fills the body of knowledge in the entrepreneurial ecosystem domain through the formation of EE resources based on internal and external contexts which are the crystallization of elements from previous research with current developments. Second, this study offers dynamic capability as a mediator in accelerating EE resources on leveraging entrepreneurial performance. Third, this study presents a conceptual framework of EE that can be used as a basis for confirmatory studies in future research. The expected practical contribution of this research refers to the managerial implication, where the entrepreneur as a leader in the organization has a big role in achieving integrated EE. This is because the leader's task is to manage resources both internally, for example building human capital through training or creating a creative environment for employees to innovate, and externally, such as the ability of entrepreneurs to bridge collaboration with external partners in developing innovation or investment strategies that are in accordance with organizational conditions. Limitations of this study can be recommendation for future research are, first, the method used is a literature study on certain sources. It is possible that some linear literature has not been included in this study, so it is a recommendation to complete the existing literature to get an in-depth understanding of EE. Second, this study was conducted using a qualitative approach to present a conceptual framework that describes the connection of EE resources on entrepreneurial performance. It can be a recommendation for future research to conduct another approach, such as confirmatory study by employing quantitative method.

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Appendix 1. Lists of Construct Measurement

Construct	Code	Measurement
Internal Context of EE Resources		
Human Capital [20], [30], [89]–[91]	HC1	Human Resources achieve optimization in acquiring strategic knowledge.
	HC2	Entrepreneur provides rewards to members in line with the achievement of work targets.
	HC3	Members of the organization have a work commitment in the organization.
	HC4	Members of the organization can demonstrate agility to cope with changing circumstances
	HC5	The company conducts training for employees
	HC6	Employees can achieve the given target
Brand Equity [30], [90]–[92]	BE1	Entrepreneur ensures that the benefits of the product/service are well conveyed to consumers.
	BE2	The number of customers who make repeat purchases increases every year.
	BE3	Product information dissemination throughout all organizational entities.
	BE4	Providing employees with clear guidance and direction about the brand knowledge
	BE5	Our brand has positive reputation from customers
	BE6	Our brand is the first choice compared to the other brands
	BE7	Entrepreneur is highly concerned on the quality
	BE8	Consumers provide feedback on the company's products
	BE9	Consumers provide potential market information for companies
	BE10	Consumers provide information on potential suppliers for the company
	BE11	Consumers provide information regarding access to potential investments for companies
Digital Culture [30], [40], [90]	DC1	The teams collaborate functionally in the initiatives for the innovation and digital transformation
	DC2	There is a clear orientation to digital technology changes inside the company's culture
	DC3	The culture of digital innovation and change takes part as a natural process within the Company
	DC4	The organization shares with the staff the digital strategy, taking into consideration their suggestions
	DC5	The company tolerates employee failures
	DC6	Employees are free to channel innovation for the company
	DC7	The company creates a creative working environment for employees
Product Development Strategy [93], [94]	BF1	Entrepreneur creates new products to enter new markets.
	PF2	Entrepreneur creates new products for current market needs.
	IF3	Orientation of new product development
	PD4	Market-based product development
External Context of EE Resources		
Government Policy [21], [30], [82], [84], [90]	GP1	Entrepreneur gets tax discounts from government programs.
	GP2	Entrepreneur receives financial grant from government programs.
	GP3	Government help entrepreneur to unlock network potential for market expansion.
	GP4	The government creates beneficial programs that support companies
	GP5	The government aids companies
	GP6	The government creates supportive environment in the market for company
Technological Development [30], [52], [95]	TD1	Cooperation with research institutions (academic/public researchers) is important for organizations to establish business strategies.
	TD2	Entrepreneur allows R&D transfer to be implemented.
	TD2	Entrepreneur establishes high investment on the R&D activities.
Funding Strategy [21], [30], [90], [96]	FS1	Entrepreneur has a major external investor.
	FS2	Entrepreneur gets easy access to finance from external resources (ex: banks)
	FS3	Entrepreneur already has external funding strategy to keep balance
	FS4	Entrepreneur well informed about alternative financial sources (equity loans, venture capital, MAB, business angels, etc.)
	FS5	Entrepreneur have updated information regarding economic and financial industry data
	FS6	Entrepreneurs use economic and financial information in the decision-making
Network Connection [30], [97]	NC1	Entrepreneur collaborates with stakeholders to create competitive advantages.
	NC2	Entrepreneur is in an integrated supportive environment.
	NC3	Network structure drive novel product performance
	NC4	The company have easy access to market information
	NC5	The company has easy access to market distribution channels
	NC6	The company has easy access to physical infrastructure, such as communication channels and the internet

Construct		Code	Measurement
Dynamic Capability [98], [99]	Adaptive Capability	AC1	Entrepreneur can identify market opportunities.
		AC2	Entrepreneur quickly respond to changing market conditions.
	Absorptive Capability	AC3	Entrepreneur can capture external sources of knowledge.
		AC4	Entrepreneur can assimilate external knowledge with existing knowledge in the internal to create new knowledge.
	Innovative Capability	AC5	Entrepreneur is willing to try new things to create discovery novels.
		AC6	Entrepreneur uses new solutions to solve problems when not working with conventional solutions.
Entrepreneurial Performance [61], [62]	Annual Sales Growth	EP1	In the last five years, annual sales growth of organization increased.
	Profit Growth	EP2	In the last five years, profit growth of organization increased.
	Market Expansion	EP3	In the last five years, market expansion of organization increased.
	Number of product/services	EP4	In the last five years, number of new product/services increased.
	Employee performance	EP5	In the last five years, employee performance of organization increased.