ISSN 1816-6075 (Print), 1818-0523 (Online)
Journal of System and Management Sciences
Vol. 12 (2022) No. 3, pp. 87-103
DOI:10.33168/JSMS.2022.0305

Technopreneurship Development in Indonesia: Digital Business Development

Agus Wibowo, Sulartopo, Iwan Koerniawan

University of Science and Computer Technology (STEKOM University) Indonesia

agus.wibowo@stekom.ac.id ; sulartopo@stekom.ac.id; iwan@stekom.ac.id

Abstract: This study aims to identify the interrelated relationship between the availability of infrastructure and the development of digital business in Indonesia. This study uses a nine-criteria model of the technopreneurship framework that can determine whether digital businesses are able to participate in the development of technopreneurship in Indonesia. The model developed is based on in-depth direct interviews with 40 technopreneurs in Indonesia. From the results of the interview, it was found that the provision of infrastructure to support digital business has an impact on the decision making of opportunity-motivation technopreneurs and necessity-motivation technopreneurs. The author concludes that various technopreneurial policies and infrastructure are very important to support the development of technopreneurship. Research on digital business development provides adequate access to information in understanding the relationship between the development of technopreneurship in Indonesia and the commitment to join the provided technopreneurial infrastructure.

Keywords: technopreneurship, technopreneurial framework, digital business development

1. Introduction

In the development of the digital era, many innovative young technopreneurs have emerged and are urgently needed for a better Indonesian economy. Airlangga Hartarto, the Coordinating Minister for Economic Affair said that by 2030, Indonesia is projected to enter the demographic bonus with a productive workforce 64% of the total population. Technology and digitalization-based industries are expected to become new entries engines of growth that requires talented human resources and competitive technopreneurs (Kompas.com). This opportunity can be used by generation Z to optimize creativity, innovation, and be inspiration and explore their potential to improve knowledge and skill. Digital technology is extremely interconnected which enables and enhances information process capacity (Li et.al. 2019).

Indonesia needs new policies that encourage the spirit of entrepreneurship to achieve stable and sustainable economic growth (Handrimurthahjo, 2013). In accordance with national strategic policies for the development of entrepreneurship in various circles and to meet the needs of national entrepreneurs, small, medium and developing businesses, it is necessary to develop technopreneurship. The importance of technopreneurship for the progress/future of the Indonesian nation requires the development of technopreneurship-based infrastructure. The nature of Technopreneurship is the spirit of building a business which is actually an integration of competence in the application of technology. The processes and results of the developed business units can be optimized by utilizing the latest appropriate technology in business development based on an established entrepreneurial spirit (Harjono et.al., 2013:27). It is undeniable that technopreneurs play a crucial role in generating the growth of national economy, as they accelerate the spread and adoption of innovative ideas of the younger generation (Naude, 2017).

There are so many promising digital businesses, because of the advantages of Indonesia's demographic advantage. In general, anything a digital business owner does in the domain of business operations can be termed as an internal task. These internal tasks are divided into planning, organizing, and managing all kinds of functional activities of a company. It is also possible for one to regard tasks performed by others, across various functional areas within company boundaries, as internal tasks. Viewed from a perspective related to the process of internal task done, the decision of individual technopreneurs or business representatives in seeking assistance to perform their duties from entities outside the business can be categorized as a decision to establish boundaries with external individuals or organizations (Nambisan, 2017). The process of digital transformation changes the traditional business world dramatically by globalizing competition between organizations and enhancing the standards of customer expectations (Wibowo, 2021).

Small enterprises and business people require facilitative resources to run their business activities effectively. Infrastructure support networks can work effectively when adequate physical facilities and installations are available, and the ability to accommodate prospective business actors (e.g. incubators) and growth-oriented businesses (e.g. industrial estates area), or adequate sources of capital (e.g. venture capital firms). Another aspect that is needed by digital businesses, and small and growing businesses to turn the wheels of business activities efficiently is the availability of access to information. One example of the information needed about the environment. Environmental information has contribution to business owners in making effective decisions where environmental information includes data on the economy, market share, laws and regulations, technical data and other relevant environmental data. In this case, the details of the technopreneurial infrastructure play an important role by providing the necessary facilities.

The World Economic Forum (WEF) places Indonesia #50 in the Global Competitiveness Report (GCR) 2019 (down 5 places compared to 2018). Of the 12 existing indicators, only the market size indicator consistently and convincingly rose to position 7. The rest consistently fell, including the last indicator: innovation capability – #74 in 2019, #68 in 2018 – (jawapos.com). Based on BPS data in 2019, the number of Indonesian entrepreneurs has increased to 3.1%, from the previous year which was only 1.6%. Of course, this is very encouraging because one indicator of a country's progress is if the country has a minimum number of 2% entrepreneurs. Business opportunities in Indonesia have provided a high-tech workforce and excellent R&D capacity this year. This condition is very beneficial for technopreneurs to expand their technopreneurial signification and benefits based on this expertise. There are some crucial questions in the context of developing techno-entrepreneurship in Indonesia: ‘what is the market niche available for digital business in Indonesia? What are the policies and methods for the development? Therefore, this research is structured to clearly describe the relationship between technopreneurial environment and opportunities, as well as identify related technopreneurship model in digital business development especially in Indonesia. This study briefly develops the concept of technopreneurial infrastructure along with the nine criteria that determine whether digital business is interested in and join in the networks. The concept was built based on the results of in-depth interviews that were collected with forty technopreneurs in Indonesia.

2. Backgroud of the Study

The success of technopreneurs in running their businesses can be achieved when they have an adequate level of knowledge to complete the tasks they face. This knowledge can be obtained through trial-and-error when running a business and will be stored in the long-term memory of the business owner (Olusegun, 2019). However, technopreneurial knowledge can also be obtained through training in concepts and

skill areas that can be directly applied in business ventures (Hidayat et.al. 2019). Entrepreneurial skills are a pathway for technopreneurs to achieve success and focus on innovative thinking so as to encourage the organization's ability to learn the necessary skills and understand future business outcomes (Sweeney, 2019). When the existence of a facility is able to encourage the transfer of knowledge, the facility is declared a component of the technopreneurial infrastructure.

Research has investigated the differences in the creation of digital businesses by geographic area for many years, this effort was carried out to identify the factors that contribute to the enabling environment for the creation of digital businesses (Nachira et.al. 2007). A business model is called as digital when the transformation of digital technology drives a fundamental change both the way the business is operated and the revenue is achieved (Bican, 2020). One of the conceptual elements considered as the main factor in encouraging the creation of digital businesses and the development of small businesses in the regional environment is technopreneurial infrastructure.

Previous research (Venkataraman, 2004) stated that one of the important roles of the government was in creating the intangible infrastructure needed to enhance the culture of technology entrepreneurship. (Svirina, at.al., 2017) stated that the entrepreneurial ecosystem has a positive influence on the growth of technopreneurial startups in all types of environments. The term technopreneurial infrastructure used in this study is part of a more general concept of technopreneurial activity. Therefore, technopreneurial infrastructure is a part that represents existing facilities and services in a certain geographic area that encourages the creation of new businesses. They also promote the growth and development of small enterprises as well. We unravel the connection between technopreneurial infrastructure and also the development of digital business. To examine this research, the author proposes five basic questions that are closely related to the availability of infrastructure that supports the development of technopreneurship in Indonesia. The questions are as follow:

1. Are technopreneurial companies and technopreneurs aware of necessity of assistance?
2. Do technopreneurs and digital businesses know about the availability of resources for assistance?
3. How important is the assistance needed for digital businesses??
4. Can the resources provided be considered adequate in terms of capacity?
5. Are the available resources considered effective?

3. Literature Review

3.1. Technopreneurship

Technopreneurs are entrepreneurs who use technology to produce innovation that are acceptable to consumers. They run business differently from other entrepreneurs.

A technopreneur's business has high growth potential and requires intellectual knowledge. It must be recognized that there is an interrelated relationship between technology development, innovation and entrepreneurship. Technopreneurship is a technology-based entrepreneur by providing innovation in a product or service. Technopreneurship is an legal action in organizations that features some idea of innovation and constantly discovers and solves the main problems of the organization, and then applies problem solving methods in order to escalate competitiveness in the global market (Wijoyo et al, 2020, Samsul & Hermanto, 2021). Technopreneurship is the ability to consistently practice how to turn good ideas into profitable commercial ventures by utilizing technology and innovation (Jubilo, 2018). Technopreneurs use technological innovations and translate these technologies into successful products or services (Fowosire, 2017).

Technopreneur is a new generation in the field of technopreneurship. Technopreneurs are business people who are interested in the newest technology. They have a high level of creativity, passionate in issuing ideas and move dynamically. They also dare to be different and take unexplored paths … (Mintardjo, 2008: p 229-230). Those who are called technopreneurs are 'Modern Entrepreneur' based on technology. Innovation and creativity dominate them to produce superior products as the basis for knowledge-based economic development (Nasution, Arman Hakim et.al., 2007). Technopreneurs combine technology and markets, which ultimately leads to advanced business. They start and run businesses based on new ideas supported by advances in technological innovation. A true technopreneur must have a philosophy of thinking, including a strong desire to pursue achievement, conceptual abilities and the ability to find solutions in solving complex problems, have broad insights and ways of thinking, high self-confidence, tolerance for the environment, careful in calculating risks, think realistically, have interpersonal skills and a high level of ability to control emotions. It can be concluded that there are two main points of technopreneur: creativity and innovation. Innovation has been claimed as an important part in the success of new businesses (Wibowo, 2021).

3.2. Technopreneurial infrastructure

Digital infrastructure is one of the major aspects that affect technoprenurship in recent decade. The challenges faced by the Indonesian people in the current era of digital competition are access to infrastructure, education, information, regulations and other supporting facilities. Infrastructure development is a sector that should be the focus in creating technopreneurs in the future. Technopreneurial infrastructure provides support to prospective digital business owners, developing small and medium enterprises and existing small business in the forms as follow: (1) assistance with tasks that must be completed by business owners or small businesses, (2) physical or monetary resources shape, (3) information form and last (3) knowledge type. Infrastructure is very important for the growth and development of the community's

economy, because the community can impact the value of technopreneurship activity in its domain by influencing the elements in the technopreneurial infrastructure (Bull & Winter, 1991). Indonesia has tremendous potential in the digital economy. According to (Wooley, 2017) technopreneurial infrastructure includes: (1) resource development for basic knowledge, (2) mechanisms of financing, (3) Labor component and (4) structures of individual governance that legitimize, regulate and standardize the activities of member industry. They consider the constituents of the modern venture infrastructure as technopreneurship education, incubators, and venture capital. Hence, they concluded that these infrastructure components would complement and support each other.

3.3. Digital business development

Digital was described as IT-based, acquired and transmitted via electronic system ... (Bican, et.al, 2020). According to Bradley et.al (2015. P.8) Digital Business can be grouped into three categories:

1. Cost value ; price transparency, consumption-based pricing, reserve auctions, buyer aggregation, rebates and rewards
2. Experience Value ; customer choice, personalization, automation. Lower latemcy and device any time
3. Platform value ; marketplaces, crowdsourcing, peer-to-peer, sharing economy and data menetization.

Opportunity recognition is a process of how new potentially profitable business ideas can be identified. It can be called as the cornerstone of the technopreneurship process. Opportunity technopreneurs who are able to survive and blend in to risk and having good internal locus of control have a chance to get higher preference and option for entrepreneurship (Isenberg, 2010). The hallmark of true technopreneurship is characterized by three major attributes as follow: (1) recognition/identification of market opportunities and renewal of business area (both service and product) in order to address the opportunities, (2) commitment and preparation of resource to face risks in pursuing opportunities, (3) establishment of business organizations that functions to operate and execute the ideas of opportunity motivated (Suhayati, 2019)

Indonesia must produce more new entrepreneurs if it wants to become a developed country. According to the 2018 Global Entrepreneurship Index report released by The Global Entrepreneurship Development Institute (GEDI), Indonesia is still ranked 94th out of 137 countries. This GEI report discusses the relationship between entrepreneurship, economic development and welfare. According to GEDI, entrepreneurship plays an important role in creating jobs. This in turn will encourage increased economic growth of a country. Technopreneurship opportunities in developed countries are related to economic growth, whereas in most developing countries, the existence of technopreneurship needs due to low growth (Bhola et.al.,

2006). Another reason is that because rich countries are characterized by more developed labor market or access to stronger safety network (e.g. social welfare),there is a lower need to promote a new business, and therefore these countries show lower levels of necessity-based technopreneurial activity (Reynold et.al., 2002)

4. Method

4.1. The model of conceptual framework

Countries that are considered more developed tend to be perceived as having a higher EFC than developing countries. According GEM Annual Report stated that Entrepreneurial Framework Conditions (EFC) determine the ecosystem condition of a country that enhance or hinder the invention of new business that affect the economic growth of a country. EFC has a direct effect on entrepreneurial activities and entrepreneurial capacities although it can be influenced by particular country's social, cultural and political context. There are nine major EFCs are as follow:

1. Financial Support

It is about the availability of equity and financial resources for growing and developing business or companies including subsidy fund and grant fund from government or non-government agencies.

2. Government Policy

This aspect focuses on the extent to which government policies regarding taxes, regulations and laws and their implementation for business actors run in a neutral and fair manner. This aspect also discusses whether the policy hinders or encourages new and emerging companies.

3. Government Programs

This aspect relates to the availability of direct programs to assist new and growing companies at all levels of government: national, regional and urban.

4. Education and Training

This aspect is closely related to the extent to which the functions and benefits of training and education are related to the management of small, new or growing businesses that will start their digital venture.

5. R & D Transfer

Research and Development (R & D) Transfer is an activity carried out by a company when it is innovating to create a new product or service. R&D contains a series of research and development processes for the product or service that you want to create. The main goal is for the company to be able to launch an original product or service optimally and see to what extent research and development will lead to new commercial opportunities.

6. Commercial and Legal Infrastructure

Aspects that are directly related to the emergence of small, new and growing businesses that may be affected by commercial calculations and applicable laws and regulations in the country or region.

7. Market Openness

In this aspect we discuss how commercial arrangements are prevented from undergoing continuous change and displacement, preventing new and developing companies from competing and replacing existing suppliers, subcontractors and consultants.

8. Physical Infrastructure

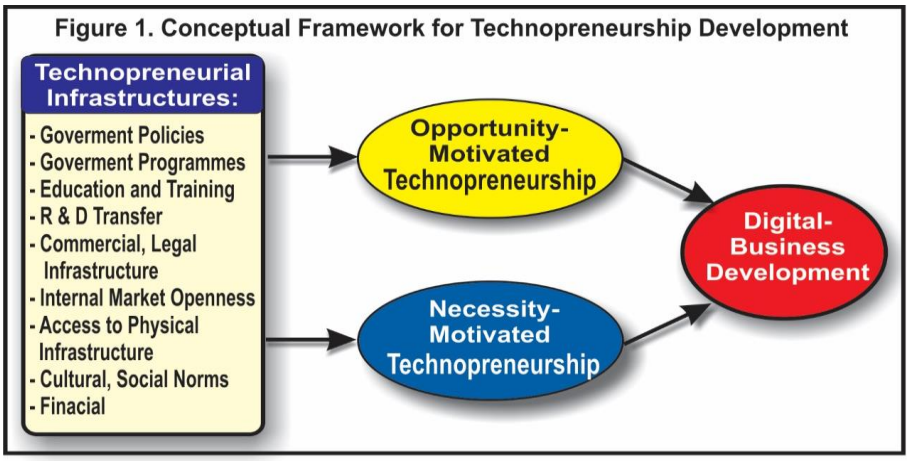
This aspect provides information about access to physical facilities and resources that can help develop technopreneurship. Included in this aspect are telecommunications, transportation, especially road health insurance, where there is justice in terms of financing.

9. Cultural and Social Norms

This aspect provides information on whether cultural and social norms prevailing in a particular country or region can encourage, or at least not hinder, individual actions that can lead to new ways of doing business or economic activity.

The passion to decide starting a business that will be carried out by aspiring technopreneurs is strongly affected by some additional characteristics in the available business environment. This is referred to as the technopreneurial infrastructure. Figure 1. illustrates the relationship between the conceptual framework built between technopreneurial infrastructure and digital business development.

Figure 1. Conceptual Framework for Technopreneurship Development



The conceptual framework in this study presents a comprehensive approach that considers the contribution of technopreneurial infrastructure to new business development. In particular, this study recognizes that the developmen of digital business is a combination of two unidirectional technopreneur activities: (1) the

technopreneurs related to the opportunity motivation (as shown in the upper center of Figure 1), and (2) the technopreneurs who are directly related to the opportunity motivation. Motivational needs (note in the bottom-middle of Figure 1).

The encouragement to generate new businesses mainly influenced by the technopreneurial infrastructure offered by governmental and non-governmental institutions or organizations, which is the reference for most technopreneurs. Necessity-motivated technopreneurs are less likely to participate in the technopreneurial infrastructure. Opportunity-motivated technopreneurs are business actors who have a choice related to their involvement in the technopreneurial infrastructure.

4.2. Face-to-face interview

The author conducted interviews using a semi-structured approach through the method of face-to-face interviewing. Interviews were organized with the current founders of technopreneur or the chief executives of several small business or enterprises, which includes 40 corporate technopreneurs in incubators spread across several major cities in Indonesia. The selection of participants interviewed using basic question about the name of managers in thirty-six incubators in eight major cities in Indonesia. The lists of cities are Jakarta, Surabaya, Bandung, Medan, Denpasar, Malang, Semarang and Yogyakarta. The author proposed about fifty business organization and forty participants were willing to be interviewed face-to-face. Most of the forty technopreneurs interviewed have business originating from various business fields with the following details: 25 % run traditional manufacturing business, 55 % have design and computer science service business, and 20 % engage in the biotechnology and bioengineering business. The interview was managed to ascertain the inclusion of nine aspects can be covered into the technopreneurial framework. The form of the question is that the interviewees are asked about the facilities and infrastructure services that they have interacted with or want to use personally.

4.3. Structure of interview

The structure of interview is made sequentially and regularly, making it easier to get the results. An overview of the interview scheme listed below:

1. Preparation
2. Study of the problems and the challenges facing the enterprises recent day?
3. For every meeting with infrastructure and also every problem encountered, the interviewer has given:
    a. Have you ever submitted a proposal of assistance from a government or community that sponsored unit or organization in Indonesia?
    b. (*Note: if the answer 'NO', fourth question will be provided*)

c. (If the answer YES) Why did you request those assistance?
d. What kinds of incident have you had?
e. Was the incident easy or hard for you??
f. Did you finally overcome the obstacle in the way? Did you truly get want you expected?
g. Have the available resources been adequate?
h. How did you find out about the program, resources or facilities?
i. How urgent are your needs?

4. What are your reasons for not using a public or government sponsored unit?
5. Have you ever missed a chance to utilize one of these facilities?
6. Do you have any needs or suggestion that government agencies hope to fulfill?
7. Closing Statement of the interview

5. Result

5.1. Variables influencing the decision

Several factors that present as the independent variables influencing participation in technopreneurial network within the conceptual framework presented in Table 1.

Table 1: Variable influencing the decision of technopreneurs to participate in technopreneurial infrastructure

Variable	Questions	Response and Value
X1	Does company or individual reecognize a need for assistance?	Y1 = Yes (Opportunity-motivated)
		X1 = No (Necessity-motivated)
X2	Does company or individual aware of the existence of resource facility?	X2 = Yes (Opportunity-Motivated)
		X2 = No (Necessity-motivated)
X3	Is the business need crucial?	X3 = Yes (Opportunity-Motivated)
		X3 = No

		(Necessity-motivated)
X4	Are resources to help potential users perceived to be easly acessible?	X4 = Yes (Opportunity-Motivated)
		X4 = No (Necessity-motivated)
X5	Is resources of facility perceived to be adequate in the term of capacity?	X5 = Yes (Opportunity-Motivated)
		X5 = No (Necessity-motivated)
X6	Are the resources perceived to effective?	X6 = Yes (Opportunity-Motivated)
		X6 = No (Necessity-motivated)
R	Will participate Possible participian Participation not likely Will not participate	

5.2. The explanation of the variables

Based on Table 1, there are six essential independent variables influencing the decision of private or enterprises to participate in network infrastructure. Variable X presents a conception of the realization of potential users that individuals or companies require some forms of assistance.

Variable X2 examines the level of awareness of technopreneurs in thinking about the fact that infrastructural support available across geographic areas is perceived as a means to meet the needs.

Variable X3 clearly examines about the inclination of reason of using the service. The new individual or organization as potential consumers (users) of network infrastructure might be more inclined to apply this service when they are under high pressure to do such service. The high pressure that can affect potential users who are likely to search assistance on the supporting network can be on the financial and deadlines.

Variable X4 explains the infrastructure accessibility services and examines the facilities that were provided for them. In the community, services and facilities such as research laboratories may be adequate. Facilities may not be accessible to potential users for various reasons such as security license, user costs, distance, location, or various other reasons. Several categories were composed to express this independent variable. The category is termed “inaccessible” due to the high costs related to accessing the facility in next few years (for at least the next three years). In certain cases, for example, under the same conditions and situations, business people can directly interact with these facilities. When the facility is 'accessible', differences in technopreneur behavior based on two choices: if the facility is “difficult” to be accessed or “easy” to be accessed. In case that it is considered easy to access;

technopreneurs tend to apply these facilities. Facilities provided depend on the importance of the business needs, the perceived adequacy of resources, and of course the level of effectiveness.

The variable X5 assesses the capacity of the facility. The capacities tested here include; Are the facilities in the forms of capacity of financial, physical, electronic, and others large enough? Is there sufficient capacity to meet service demand?

Prospective users must understand that the services they receive can run effectively when they want to take advantage of the services provided in the technopreneurial infrastructure. Variable X6 found answers to additional questions; Are the individuals or organizations working in the facility deemed competent to do the work? How is the technology used in the facility considered to be able to meet the needs of potential users?

Finally, it can be concluded that the six variables are the independent variables that define the tendency of potential users to participate in infrastructure. In addition, this study found that the scores differed when the answers to the questions varied. This study categorizes the answer (No) to variable *X1*, variable *X2*, variable *X3*, and variable *X5*, into the "inaccessible" category and (Difficult) category from variable *X4* variable as necessity-motivated technopreneurs based on the discovery that they do not access or feel the presence of facilities or resources power. On the other hand, the answer Yes, for the variable *X1*, variable *X2*, variable *X3*, variable *X5* and variable *X6* included in the answer (Easy) category for variable *X4* is an opportunity-motivated technopreneur because they access or relish the benefit of facilities or resources.

5.3. The result of the study

In understanding the result for the analysis of the interview data collection and the value corresponding to each question in the interview resulted in the ration of each category. The author's difficulty in assigning an assessment value weight to the six variables in Table 1 was due to the limited available empirical data. This study assigned a value weight to each variable of 15% exclude for the X4 variable, which depend on the interview was given a score that higher than 25 percent. Each answer was then scored according to this ratio, so it could be concluded that 57.375 percent of technopreneurs were motivated by opportunities, and the rest were motivated by necessity. Table 2 shows the detailed results of this conclusion.

Table 2: Result of the interview referred to participants in technopreneurial infrastructure

Variable	Weight of Significance	Outcomes (% of the interviewees/technopreneurs	
		Opportunity-motivated	Necessity-motivated
X1	15%	95% (X1 = Yes)	5% (X1 = No)
X2	15%	90% (X2 = Yes)	
X3	15%	60 % (X3 = Yes)	40% (X3 = No)

X4	25%	45& (X4 = Easy)	22.5% (X4 = Innacessible)
			32.5% (X4 = Difficult)
X5	15%	37.5% (X5 = Yes)	62.5 (X5 = No
X6	15%	25% (X6 = Yes)	75% (X6 = No)

6. Conclusion, limitation and implication

In principle, the opinion of the technopreneurs provides sufficient additional information to understand the correlation between technopreneurial development and the certainty to participate in the technopreneurial infrastructure. First, with respect to the concepts and judgments used by technopreneurs, the technopreneurs' responses provide a strong explanation that there is substantial uniformity across companies. Second, there is the fact that uniformity is one of the most prominent factors in Indonesia. This may because of the growth of similar infrastructure to drive the technopreneurial development process. Their view raises some issues that the need for technopreneurship – the initiation of modern companies by those unable to take part in the technopreneurial infrastructure – may ultimately not be influenced by the circumstances of the technopreneurial framework in the same way as technopreneurship opportunities – initiation of new enterprises by elective users in relation to participation in technopreneurial infrastructure. Considering this fact, the current program design and infrastructure development to facilitate technopreneurship might create a preconception towards opportunity-motivated technopreneurs compared with opportunity-motivated technopreneurs. Furthermore, nation state or non-government agencies required to renewal a different form of policies and processes in order to support the development of technopreneurship needs.

The fundamental of the theory development process used is to find a relationship with the proposed conceptual framework. The model developed in this study has limitations based on the number of respondents interviewed. The geographical differences between big cities and other smaller cities will greatly affect the ease of access to the facilities provided, for example, technopreneurs who live in Jakarta as the capital city and major city have wider access due to their proximity to facilities and resources than those who live in other cities.

In face-to-face interviews with forty companies/enterprises have been selected from the incubator that represent typical small businesses in Indonesia, which may not represent all companies or small enterprises. It is our hope that the 40 interviewees fit into the current model, that ultimately objections or exceptions to the framework under the different conditions that exist in Indonesia today need to be considered. Exceptions of this type, which relate to public policy issues, should be understood and sought, as businesses will continue to struggle to promote competitive advantage

on the global trading stage (Bradley, 2015). The author will always encourage others to renew the research in order to generate and develop other models to test possibility engaging in the technopreneurial infrastructure.

Recommendation for policy in this regard could include establishing rapid response procedure for preselected issues facing small enterprises. The reality is that perceived needs of technopreneurs and small enterprises are more crucial than expected before. The level of exigency of the issues must be examined in-depth regarding the accessibility of the facilities or available resources. Ease pf access to facilities that provide resources must be opened as widely as possible to technopreneurs when they need certain resources. Further research in the future is urgently needed on such topic as this exploratory study. A quantitative survey of various technopreneurs would helpful based on the set of variables identified in this study. Indonesian government should be able to explore the different geographical condition in order to assist the government to determine the location of facilities provided so that they are easily accessible.

Study that compares demographic factors is always interesting topic for this kind of study. Other interesting studies that have not discussed in the study could be based on gender, age and ethnic background. We can propose some questions: Do women and men think differently about this framework? Does the age of users or technopreneurs give a difference? Does ethnic background influence technopreneurs' perceptions of how useful government facilities are?

Finally, as a professional technopreneur, the author has commitment to understanding more about the sustainability of technopreneurs especially in Indonesia, and interested in how infrastructure can increase potential technopreneurs.

The result of this study indicates that many digital enterprises have responded and adopted various intuitional standards in their internal organizations and external affairs. They apply the standards set by referring to the theoretical consideration of production and innovation of information and knowledge in organizations. It is clear that new business (start-up) that incorporates such standards as dimension in sophisticated work organization has much better opportunity of becoming an innovative product or service in marketplace. Furthermore, the relationship between technopreneur behavior and learning organization has been examined and affirmed directly. The most important thing to understand is that it can be complicated discovering two companies that have established the exact same organization, even though they have applied the same resources and assistance because the characteristic of what learning organization carry out vary individually. Learning organization is formed not only individually and according to the strategic situation but also the competence of technopreneurial network.

References

Aagard, A. Digital business models driving transformation and innovation. ISBN 978-3-319-96901-5ISBN 978-3-319-96902-2 (eBook) https://doi.org/10.1007/978-3-319-96902-2.

Baron, R. A. et.al. (2011). The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. Journal of Business Venturing, 26, 49-60.

Bican, P. et.al. (2020). Digital business model, digital transformation, digital entrepreneurship: Is there a sustainable "digital"? doi:10.3390/su12135239. www.mdpi.com/journal/sustainability

Bradley, et al. (2015). Digital business; Chicago Business Press: Chicago, IL, USA.

Digitalisasi Merak, Airlangga sebut Indonesia Butuh Banyak Technopreneur. https://bisnis.tempo.co/read/1528581/digitalisasi-marak-airlangga-sebut-indonesia-butuh-banyak-technopreneur, (Accessed February 19, 2022).

Dutshe, et al. (2013). Technopreneurships and entreprise growth in Nigeria: An exploration into the latent role of microfinance banks. *IOSR Journal Business and Management (IOSR-JBM)*, 12(2), 25- 32.

Fowosire, R. A. et al. (2017). Technopreneurship: A view of technology, innovations and entrepreneurship. *International Research Journal Publisher: Global Journals Inc*, 17(7), (USA) Online ISSN: 2249-4596 & Print ISSN: 0975-5861.

Hamzah, H. et al. (2006). Impact of entrepreneurship education programme (EEP) on entrepreneurial intention of real estate graduates. *Pacific Rim Property Research Journal*, 22(1), 17-29.

Hidayat, H. et.al. (2019). The contribution of technopreneurship scientific learning and learning readiness towards the entrepreneurship learning outcomes in higher vocational education. *Jurnal Pendidikan Vokasi*, 9(1), 21-32.

Isenberg, D. J. (2010). How to Start an entrepreneurial revolution. harvard business review, 88(6), 41-50.

jubilo, a. (2018). the explainer: Technopreneurship. https://www.researchgate.net/publication/339227487.pdf

Li, H. et al. (2019). Organizational mindfulness towards digital transformation as a prerequisite of information processing capability to achieve market agility. *J. Bus.Res.*

Mintardjo, C. (2008). Tekhnopreneur sebagai entrepreneur abad 21: SUatu Pengantar. *Jurnal FORMAS. Malang*, 1(4), hal. 228-237 ISSN.

Nachira, F. (2007). Digital business ecosystems. http://www.digital-ecosystems.org/dbe-book-2007.pdf.

Naude, W. (2017). Entrepreneurship, developing countries and development economics: new approaches and insights. *Small Business Economics Journal*, 34, 1-11.

Nambisian, S. (2017). Digital entrepreneurship: Toward a digital tecnology perpective of entrepreneurship. Entrep. Theory Pract. 1029-1055.

Kahlert, M. (2015). Entrepreneurial framework condition. https://startify7.eu/wiki/entrepreneurial-framework-conditions.html. (accesed February 2022).

Olusegun, O. O., Akpoviroro, K. S., & adebowale, O. M. (2019). Impact of technopreneurship on business performance. *Journal of Economics and Management Research*, 55.

Paulus, A. L. (2021). Technopreneurs millennial in Indonesia: The acquisition and application knowledge. *International Journal of Business Economics (IJBE)*, 2(2), 76-85. http://jurnal.umsu.ac.id/index.php/ijbe eISSN 2686-472X 76.

Samsul, H. et al. 2021. The effect of entrepreneurial mental attitudes and technopreneurship on the performance of village owned enterprises in Lombok Island. DOI: 10.18551/rjoas.2021-08.04.

Suhayati, E. & Rudiana, A. (2019). Development of entrepreneurial characteristics and a good business system in rural communities using information technology. In *IOP Conference Series: Materials Science and Engineering*, 662(3), 032057.

Sukoco, B. M. (2020). Kebangkitan Inovasi Indonesia. https://www.jawapos.com/opini/11/06/2020/kebangkitan-inovasi-indonesia/ (accessed February 22, 2022).

Svirina, A. et al. (2017). Technopreneurial development: Why ecosystem approach is unsustainnable case of low comoetition?. *Proceeding of the 21st World-Conference on Sistematics, Cybernetics and Informatics (WMSCI 2017)*.

Sweeny, P. B. (2019). Entrepreneurial inference in the high-technology start-up: A model for optimised decision making and principled praxis. Doctoral dissertation, University of Sheffield.

Wibowo, A. (2021). Bisnis digital (Algoritma Bisnis, Komputasi Awan Dan Data Teknik). Prima Agus Teknik. Semarang.

Wijoyo, H. et al. (2020). Kewirausahaan Berbasis teknologi (Teknopreneurship). Pena Persada.

Wooley, J. (2017). Infrastructure for entrepreneurship. oxford research encyclopedia of business and management. DOI: 10.1093/acrefore/ 9780190224851.013.33.

Ventakaraman, S. (2004). Regional transformation through tecnological entrepreneurship. *Journal of Business Venturing*, 19, 153-167.