AGRISOCIONOMICS
Jurnal Sosial Ekonomi dan Kebijakan Pertanian
ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Special Edition: 42-59, February 2024

BUSINESS INCUBATORS AS ENABLERS TO INNOVATION CAPABILITIES OF MSMEs: AN EMPIRICAL EVIDENCE FROM INDONESIA

Faisol*, Diah Nurdiwaty, Hestin Sri Widiawati, and Sigit Puji Winarko
Faculty of Economic and Business, Universitas Nusantara PGRI Kediri, Kediri, East Java, Indonesia

*Correspondence Email: faisol@unpkdr.ac.id

Submitted 25 January 2024; Approved 29 January 2024

ABSTRACT

Business incubators are seen as crucial enablers of innovation, offering mentoring and other support to the budding entrepreneurs and enterprises. Numerous investments have been made by the Governments and other agencies to support the growth of business incubators, including those in the infrastructure, finance, human resources and communication technologies. Using cross-section data from 156 representatives of MSMES in the City of Kediri (East Java Province of Indonesia), this study examines how business incubator capability is perceived to affect the innovation performance of regional MSMEs. Data has been analyzed using Structural Equation Modeling - Partial Least Squares techniques. Service Capacity, Financial Strength and Incubation Capacity has been identified as three important characteristics of the business incubators to support the innovation capability of MSMEs. Additionally, this study found that communication infrastructure in business incubators plays a significant moderating role to influence the innovation performance of MSMEs being incubated. In order to assist the growth of domestic technology entrepreneurs and innovation performance, this study supports the idea that developing economies should prioritize free knowledge transfer platforms through the over business incubators.

Keywords: *business incubator, financial strength, infrastructure, MSMEs, service capacity*

BACKGROUND

The incubation program has generally been viewed as an important policy tool to assist MSME innovation and support the local economy (Pustovrh et al., 2020). Business incubators are very much essential in the present era of Globalization and digital economies to transfer the cutting edge technological developments to the budding enterprises (Gao et al., 2021). The impact of business incubators on the innovation performance of SMEs and the local economy, s specific attention to determine their performance and importance levels. The government of Indonesia has advocated for innovation-based development as indicated in government regulation number 38 of 2017 regarding regional innovation (Subagyo et al., 2020). The Regulation of the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia (Number 3 of 2021) has mentioned the implementation of government regulations regarding facilitation, protection, and empowerment of cooperatives and micro, small, and medium enterprises. Articles 24 to 41 of the Government Regulation makes reference to the impact of incubators on the performance of MSMEs (Regulation of the Government of the Republic of Indonesia Number 07 of 2021). For this reason, the City of

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
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Kediri offers a crucial starting point for investigating the connection between the growth of business incubators, the performance of MSMEs' innovation, and the regional economy.

The city of Kediri, which is located in East Java Province, Indonesia, indeed has unique potential that shows the dynamism of Micro, Small and Medium Enterprises (MSMEs) in developing countries. One of the important factors that characterizes Kediri is the existence of Dhoho Airport, which is one of the main transportation infrastructure in the city. This airport plays a key role in supporting the growth of local businesses, especially in the MSME sector. The presence of Dhoho Airport allows MSMEs in Kediri to more easily access national and international markets. With improved connectivity, local businesses can import raw materials, export their products and participate in global supply chains. This drives the growth of MSMEs by giving them wider access to new customers and business opportunities (Nanda & Kumar, 2023a). The importance of Kediri as a business center in terms of MSMEs is also reflected in the contribution of this sector to regional development. MSMEs also provide employment opportunities to many local residents and decrease the unemployment (Kumar & Gupta, 2021). Apart from that, MSMEs also play a role in maintaining cultural traditions and regional handicrafts (Kovid & Kumar, 2022). By understanding the growth and impact of MSMEs in Kediri, we can assess how important this sector is in improving the local and national economy. The latest data shows that the total number of MSMEs in Kediri City has reached 7,745 (Radar Kediri, 2023). As people's businesses grow, their uptake of business credit also increases. In total, during 2021 -2023, a budget of IDR 9 billion has been absorbed. These funds are distributed to MSMEs through business credit called business credit serving citizens (KURNIA). The income generated by MSMEs and their contribution to GRDP will provide a more accurate picture of the role of MSMEs in encouraging economic resilience, creating jobs and strengthening the economy in developing countries like Indonesia.

This study uses theory of regional innovation systems from Asheim & Gertler (2005) and the theory of psychological capital from Peterson & Luthans (2007) to assess the innovation performance of a region linked to business incubators in developing nations. The purpose of this research is to investigate how different business incubator capacities affect the innovation performance of MSMEs in Kediri City, as well as the variables that govern the relationship. Three factors remain important in determining how effectively MSME Innovation performs: the first is business service capacity (Leitão et al., 2022), the second is financing capacity (Li et al., 2020), and the third is incubation capacity (Du, 2021)**.** According to the concept of psychological capital from Luthans et al. (2006) individual performance, is a function of psychological capital, which is influenced by characteristics such as self-efficacy, hope, optimism, and resilience. A person's self-efficacy is his belief in his capacity to execute a task successfully. Hope is a positive motivating state that arises from the interaction of a sense of derivation from the route to achievement and agency (goal-directed energy). Optimism is a type of attribution in which external and situation-specific variables, such as luck, are attributed to positive events and personal and enduring reasons, such as competence. The ability to recover or bounce back from adversity, conflict, and failure, as well as positive and challenging experiences capital, is defined as resilience (Luthans et al., 2006). The combination of these elements can have an impact on an individual's performance as well as the organization in which they work (Lai & Lin, 2015).

The services provided by business incubators have the potential to increase the synergy of psychological factors and entrepreneurial capital, which can affect the performance of entrepreneurs in their businesses in the incubator and, ultimately, the performance of regional innovation (Luthans

ISSN 2580-0566; E-ISSN 2621-9778
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et al., 2006; Kiani Mavi et al., 2019). Leitão et al., (2022) shown that business incubators can enhance innovation confidence and optimism by providing a trustworthy innovation platform and a solid core service framework. As a result, a successful business incubator can actively encourage the creation of a favorable entrepreneurial environment and increase innovators' and business owners' psychological capital. According to research by Kiani Mavi et al. (2019), people who work in business incubators will continue to improve their entrepreneurial self-efficacy, which has a direct positive impact on the innovation performance of startup companies. The establishment of a business incubator provides opportunities for the development of new, inventive ideas, as well as genuine innovation spaces for local inventors or entrepreneurial talent. Entrepreneurs and innovators can commit to ongoing innovation, gradually improve their initial ideas, and devote more time to research and development at a business incubator (Machado et al., 2019). As a result, the continued development of the business incubator's core services can support the accumulation of innovation capabilities, which can considerably boost the performance of technology entrepreneurs and startups and thus the region's overall innovation performance.

The second factor is the business incubator's financial capabilities. Financial investments in incubator companies often come from a range of sources, including financial institutions, governments, and corporations, according to Fardnia et al. (2021). Similarly, Wang et al. (2021) argue that business incubators will not boost the creative performance of local MSMEs. They also believe that financial funding is not immediately available to incubation firms without strong finance channels. Fortunately, the financial capabilities of a business incubator may combine many funding sources and form a long-term finance structure (Wang et al., 2021). As a result, more financial capability is typically correlated with better innovation performance. Indeed, it has been claimed that the financial capabilities of business incubators improves internal synergies while also integrating external financing channels (Zhao et al., 2017). Noting the potential significance of internal synergies for incubation enterprises is one example (Zhao et al., 2017; Li et al., 2020). With dependable financial backing, the incubator firm can purchase cutting-edge technology or recruit technical personnel with product research and development knowledge (Kumar & Vidhyalakshmi, 2012). This will increase the effectiveness of new product development, reduce R&D expenses, and finally boost regional innovation performance (Zhao et al., 2017; Tuffour et al., 2022).

The third factor is the business incubator's incubation capabilities. Business incubators, in addition to providing a variety of tools to entrepreneurs and start-ups, can also build social relationships between innovators and entrepreneurs, which is an important component of their ability to foster information. Mittal and Kumar (2019) define knowledge sharing as a knowledge management technique used to establish and maintain business processes. Knowledge sharing is also associated with acquiring data and knowledge for activities in order to facilitate problem-solving, policy implementation, or innovation promotion (Kumar & Ayodeji, 2020). Knowledge sharing is commonly defined as the process of exchanging and communicating ideas, experiences, and knowledge to one another in order to ensure that information is continued, perpetuated, and preserved in the business (Kumar & Nanda, 2022). Effective information sharing is viewed as a crucial enabler of entrepreneur growth (Usman et al., 2020).

Earlier research stressed the role of business incubators in connecting entrepreneurs with incubator enterprises. For example, Molodchik et al. (2021) shown that, while managers of corporate incubators cannot directly provide services, they can nonetheless facilitate social networks for R&D. This network is critical for knowledge and information exchange. Business incubators connect the

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region's various entrepreneurship and innovation resources, promote SMEs, and increase the region's total innovation potential through improved information flow (Azari et al., 2020). Effective knowledge sharing in business incubators can, without a doubt, (1) enable entrepreneurs to make better use of newly acquired knowledge (Ndubisi et al., 2020); (2) enhancing collaboration and fostering mutual learning; (2) improve collaboration and foster mutual learning (Ngah & Wong, 2020); (3) facilitate wise decision-making based on more complete information; and (4) enhance personal innovation ability (Du, 2021). Better capability for knowledge sharing in business incubators will thereby increase regional innovation performance.

In addition to the three factors mentioned above, there are other crucial factors that need to be taken into account to create MSME innovation in emerging economies. For example, the adequate communication infrastructure is the most crucial foundation for knowledge management (Azam, 2015; Kumar & Nanda, 2022). Knowledge management is described as a set of tasks that involve locating, gathering, storing, and disseminating knowledge (Usman et al., 2020). According to Hall et al., (2013), strategies for developing regional communication infrastructure with the purpose of fostering innovation may be helpful for fostering knowledge management effectiveness and technical interchange in the neighborhood's industrial sector. Regional communications infrastructure has a major influence in encouraging innovation in a particular region or area (Okundaye et al., 2019; Nanda & Kumar, 2023b). This means that when good communication infrastructure exists in an area, business people, including MSMEs, can collaborate more easily, access the resources and develop innovative ideas (Faisol et al., 2023). Therefore, the improvement in innovation performance of Micro, Small and Medium Enterprises (MSMEs) by increasing investment in communications infrastructure needs to be explored.

Communication infrastructure is expected to positively modify the relationship between the core capabilities of business incubators and the performance of SMEs' innovation. Binnui (2021) proved the importance of communication infrastructure and its role as a main tool in information-exchange activities in business incubators. Good communication promotes the mutual understanding of business incubators. As a result, the availability of communication infrastructure enables business incubators to observe, learn, and copy their competitors' better competencies (Xiao & North, 2018). For instance, other business incubators have been able to learn from the management and service standards implemented by China's top incubators and enhance their own capacities (Usman et al., 2020). Business wait times and transaction delays are reduced because to the quick development of communication technology, which accelerates the growth of capital markets (Tian et al., 2019). Infrastructure for communications improves capital availability and capital allocation effectiveness. As a result, improved communication infrastructure is probably closely tied to improved business financial capacity (Okundaye et al., 2019). Business incubators will also be able to make greater use of a variety of resources and offer better support with the efficient communication infrastructure (Jasimuddin & Naqshbandi, 2019; Roman & Rusu, 2022). The success rate of incubation and innovation performance of MSMEs is eventually increased by startups that grow in incubators having more prospects to receive better service or support from business incubators.

Present adds to the existing literature in the following ways: (1) a better understanding of the benefits of business incubators on MSME innovation performance in the context of regional economic development; (2) a more comprehensive understanding of the various capacities of regional business incubators in developing economies; (3) a better understanding of the role of business incubators as important homes for entrepreneurs in developing countries; (4) the expansion of

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regional innovation system theory, as well as clarification of the significance and importance of business incubators in MSME innovation systems and the regional economy. The current study adds to the existing literature in the following ways: (1) a better understanding of the benefits of business incubators on MSME innovation performance in the context of regional economic development; (2) a more comprehensive understanding of the various capacities of regional business incubators in developing economies; (3) a better understanding of the role of business incubators as important homes for entrepreneurs in developing countries; and (4) the expansion of the existing literature.

RESEARCH METHODS

In this study, purposive sampling was deployed to collect the empirical data using a structured questionnaire. Data was collected from eleven minor industrial centers located at villages: Tinalan, Bawang, Bandarkidul, Dermo, Dandangan, Blabak, Banjarmelati, Kampung Dalem, Tempurejo, Bujel, and Banjaran. These centers fall in the 8 groups in accordance with their business category. The business classification has been presented in Table 1. They, are the group that most accurately reflects the current entrepreneurial traits of the people of Kediri. In accordance with the Mayor of Kediri's Decree No. 188.45/267/419.033/2022, the eleven places are deemed to have superior product potential. Data was collected from 200 business actors in industrial centers and 156 valid & complete responses were used for analysis. The questionnaire consists of 27 indicators under 5 constructs. The five-point Likert scale was used for taking opinion from the respondents with 1 denoting strongly disagree and 5 denoting strongly agree. The demographic profile of the respondents has been presented in Table 2.

Table 1. Classification of Industrial Centers in the City of Kediri, 2022

Industrial center location (Village)	Business classification	N=156
Tinalan, Bawang	Tofu Production	14
Bandarkidul, Dermo, Dandangan	Weaving	13
Blabak	Chicken feather duster production	11
Banjarmelati	Tailoring	10
Kampung dalem	Traditional herbal medicine	11
Tempurejo	Tempe Production	11
Bujel	Gambier chrackers production	15
Banjaran	Cake Production	71

Table 2. Respondent Demographics

Categories	Frequency	%	Categories	Frequency	%
Gender			**Age**		
Male	90	58%	20-30	33	21%
Female	66	42%	31-40	26	17%
Education			41-50	52	33%
Elementary	10	6%	>51	45	29%
Junior High Scholl	35	22%	**Employee Strength of Company**		
Senior High School	52	33%	1-4	30	19%
Diploma	20	13%	5-10	75	48%
Bachelor	39	25%	> 11	51	33%

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Data Analysis Techniques

PLS route modeling has been utilized for data analysis (Hair et al., 2012). Before putting the individual items through their paces and examining their internal consistency, reliability, convergent and discriminant validity, and structural routes, several hypotheses of normality and multicollinearity, as well as common method bias, were tested evaluated (Podsakoff & Organ, 1986; Kumar & Ayodeji, 2021). For evaluating and presenting PLS-SEM data, a two-step process was used, consisting of (1) measurement model and (2) structural model as well as an evaluation of the structural model as observed by R2 and Q2 (Sarstedt et al., 2014); (Ngwabebhoh et al., 2020).

The Research Model

Three exogenous constructs: capability for basic services, financial capability, and incubation capability, as well as two endogenous constructs: communication infrastructure and innovation performance of SMEs have been included in this study. The research model has been presented in the Figure 1. The model is primarily based on the theory of regional innovation systems (Asheim & Gertler, 2005) and psychological capital theory (Asheim & Gertler, 2005). The constructs and the related indicators have been presented in Table 3. Total, six hypothesis were formulated and the relationships have been shown in research model.

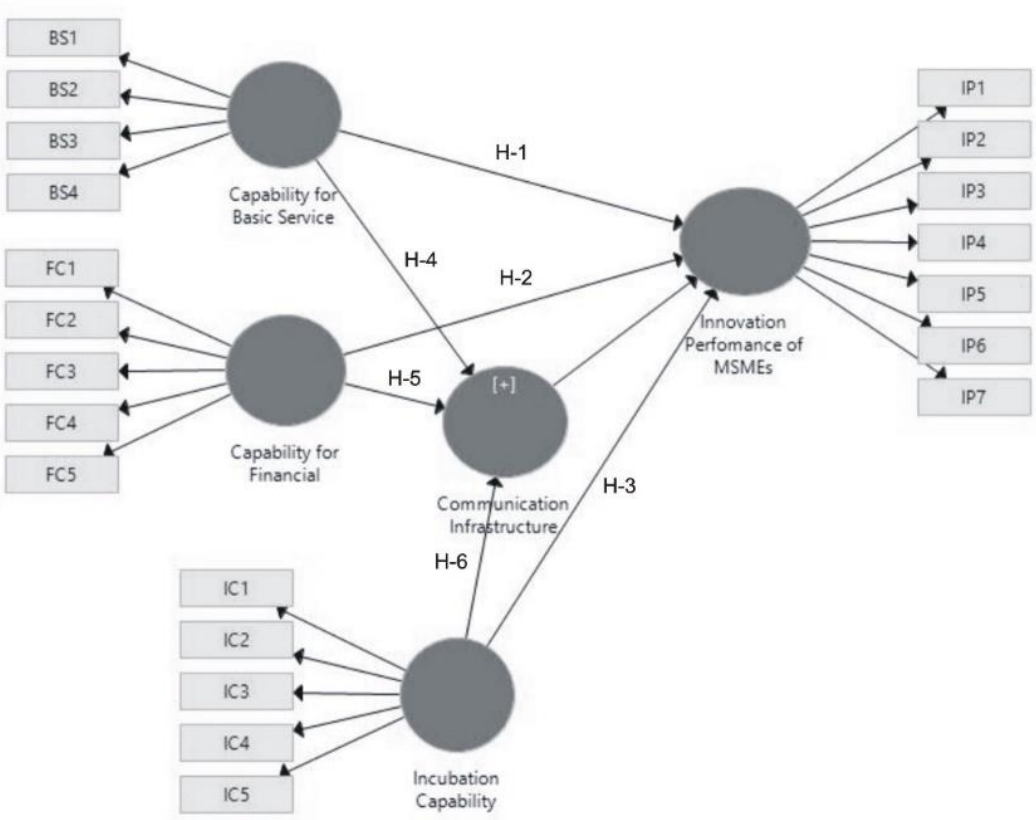

Figure 1. Research Model

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Table 3. Constructs and Indicators

Constructs	Indicators	References
Capability for Basic Service	1. Business incubator programs, 2. Marketing professionals, 3. Finance professionals. 4. Complete investment fund 5. work space adequacy	(Jiang et al., 2022) (Lobo & Samaranayake, 2020) (Kusumawati et al., 2021)
Capability for Financial	1. Total venture capital investment 2. Total grant receipts 3. Total investment from partners 4. Total utilization of funds 5. Total operating costs	(Tuffour et al., 2022) (Wang et al., 2021)
Incubation capability	1. Number of start up 2. Number of tenants 3. Accumulation of the number of tenants who graduated 4. Number of experts 5. Adequacy of basic facilities	(Jiang et al., 2022) (Sedita et al., 2019)
Communication Infrastructure	1. Proportion of investment in communication infrastructure 2. Infrastructure for communication that is adequate (e.g. IT infrastructure, funds or information and communication equipment) 3. Decent office equipment 4. Adequate incubation curriculum 5. Feasibility of communication media	(Okundaye et al., 2019) (Jasimuddin & Naqshbandi, 2019) (Saurabh & Kumar, 2017)
Innovation Performance of MSMEs	1. Product development 2. Service improvement 3. Process advancement 4. New business models are being developed. 5. Inputs and outputs of regional innovation are indexed. 6. R&D input is calculated using R&D intensity, which comprises the number of R&D initiatives., 7. Amount spent on research and development	(Jiang et al., 2022) (Faisol, Sri Aliami, 2022) (Faisol et al., 2021)

RESULT AND DISCUSSION

The Assessment of Measurement Model

The measurement model has been shown on figure 2. The convergent and discriminant validity were tested for the model. The values of the loading factor (λ), the variance inflation factor (AVE) as a manifestation of convergent validity results, the value of the composite reliability (CR), and the value of Cronbach's alpha (α) as a manifestation of the results reliability have been shown in Table 4 (Hair et al., 2013; Joseph et al. 2014; Hair et al., 2017).

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Table 4. The Convergent Validity and Reliability

Construct	Indicators	Loadings Factors (λ)	Cronbach's alpha (α)	Composite reliability (CR)	AVE
Capability for Basic Service	BS1	0.878	0.881	0.918	0.738
	BS2	0.903			
	BS3	0.879			
	BS4	0.772			
	BS5	Deleted			
Capability for Financial	FC1	Deleted	0.854	0.903	0.702
	FC2	0.929			
	FC3	0.841			
	FC4	0.696			
	FC5	0.869			
Incubation Capability	IC1	0.749	0.818	`0.869	0.571
	IC2	0.767			
	IC3	0.654			
	IC4	0.857			
	IC5	0.738			
Communication Infrastructure	CI1	0.863	0.899	0.926	0.715
	CI2	0.756			
	CI3	0.831			
	CI4	0.904			
	CI5	0.867			
Innovation Performance of MSMEs	IP-1	0.754	0.885	0.911	0.595
	IP-2	0.701			
	IP-3	0.858			
	IP-4	0.850			
	IP-5	0.758			
	IP-6	0.731			
	IP-7	0.736			

The loading factor value should be between 0.40 to 0.70, according to Hamdollah & Baghaei (2016), but Hair, Sarstedt, Pieper (2012) says that it should be greater than 0.5. As a result, all item values for the five constructs are good and fulfill criteria, as shown in Table 3, where item values are reported in the range of 0.696 to 0.929. The value of Cronbach's Alpha should be more than 0.7, according to the general guidelines established by (Henseler et al., 2009) and Hair et al. (2014).

The values of Cronbach's Alpha were between 0.818 to 0.899, as shown in Table 4. In light of these findings, Table 4's results show that the financial capacity Cronbach's Alpha was 0.854 and the composite reliability was 0.903. Cronbach's Alpha range for composite dependability from basic service capacity was 0.881 to 0.918. Then, the incubation capacity range for Cronbach's Alpha was 0.818 to 0.869. Cronbach's Alpha for the communication infrastructure was 0.899, and for composite reliability it was 0.926. Also, MSMEs' performance in terms of innovation was determined to have 0.885 Cronbach's Alpha and 0.911 composite reliability. As a result, all research variables were discovered to fall between the ranges of 0.8 and 0.9 (Hinton, 2014). The extracted average value should be bigger than 0.5 (Bagozzi & Yi, 1988).

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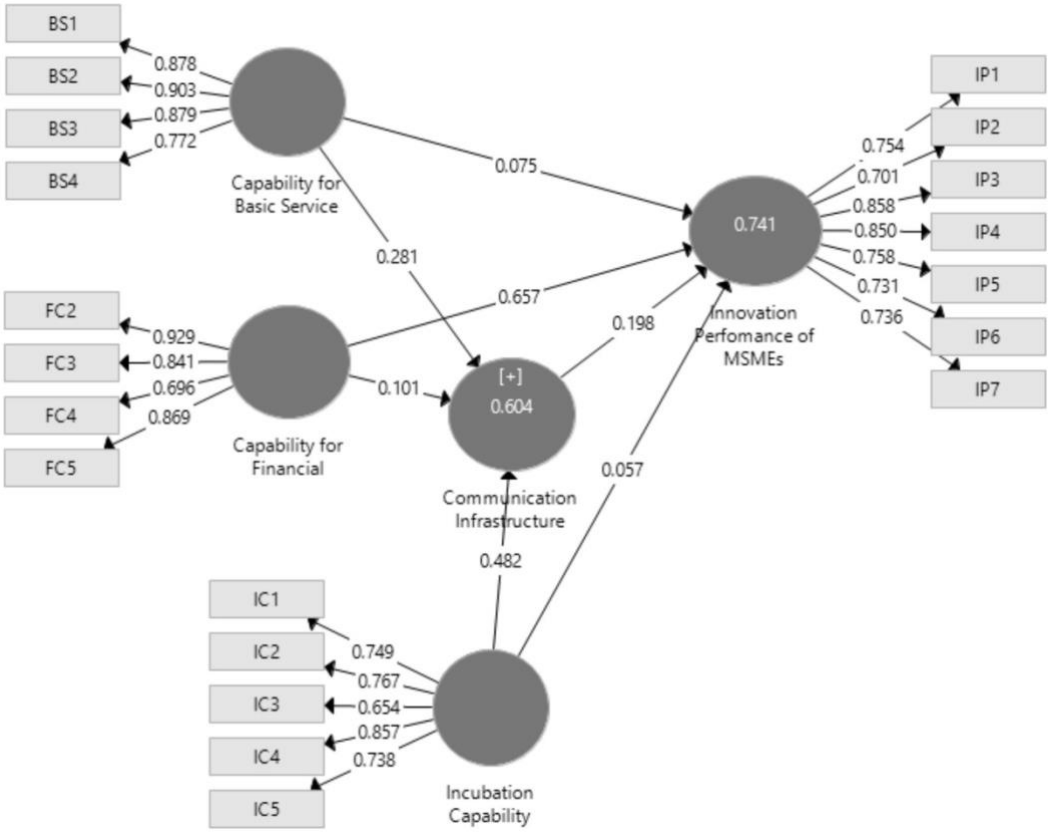

Figure 2. The Measurement Model

The Assessment of Discriminant Validity

To assess the variables' "discriminant validity," two techniques were utilized. (1) Cross-loadings of indicators were made to be higher than any other opposing constructions (Hair, Sarstedt, Pieper, 2012). (2) The square root of AVE for each construct should, under the criteria, be greater than the correlations between the construct and other model components. As shown in Table 4 and 5, both techniques therefore guaranteed the satisfaction of the findings and validity. As a result, it was possible to draw the conclusion that the discriminant validity of all the constructs used in the current investigation was satisfactory.

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Table 5. The Discriminant Validity

Constructs	Basic Service Capacity	Financial Capacity	Communication Infrastructure	Incubation Capability	Innovation Performance of MSMEs
Capability for Basic Service	**0,859**				
Capability for Financial	0,637	**0.838**			
Communication Infrastructure	0,713	0,473	**0.846**		
Incubation Capability	0,762	0,400	0.737	**0,756**	
Innovation Performance of MSMEs	0,679	0,822	0.605	0,523	**0.772**

Table 6. Cross Loading

Indicators	Capability for Basic Service	Capability for Financial	Incubation Capability	Infrastructure Communication	Innovation Performance of MSMEs
BS1	**0.878**	0.592	0.643	0.561	0.624
BS2	**0.903**	0.519	0.717	0.671	0.630
BS3	**0.879**	0.662	0.620	0.636	0.662
BS4	**0.772**	0.389	0.646	0.579	0.377
CI1	0.584	0.373	0.688	**0.863**	0.486
CI2	0.594	0.577	0.567	**0.756**	0.580
CI3	0.589	0.345	0.555	**0.831**	0.453
CI4	0.634	0.362	0.624	**0.904**	0.501
CI5	0.608	0.329	0.670	**0.867**	0.523
FC2	0.599	**0.929**	0.399	0.424	0.780
FC3	0.515	**0.841**	0.293	0.476	0.693
FC4	0.438	**0.696**	0.323	0.312	0.602
FC5	0.571	**0.869**	0.324	0.357	0.665
IC1	0.417	0.323	**0.749**	0.416	0.402
IC2	0.461	0.229	**0.767**	0.453	0.299
IC3	0.326	0.093	**0.654**	0.421	0.138
IC4	0.806	0.471	**0.857**	0.649	0.582
IC5	0.676	0.283	**0.738**	0.723	0.412
IP1	0.486	0.634	0.412	0.481	**0.754**
IP2	0.438	0.526	0.330	0.457	**0.701**
IP3	0.619	0.680	0.422	0.574	**0.858**
IP4	0.531	0.598	0.465	0.521	**0.850**
IP5	0.530	0.689	0.411	0.352	**0.758**
IP6	0.447	0.587	0.285	0.396	**0.731**
IP7	0.583	0.696	0.476	0.472	**0.736**

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The Assessment of Structural Model

With the goal of illuminating the route coefficients and their relevance, this work used PLS bootstrapping with 500 bootstraps (Henseler et al., 2009; Hair et al., 2012). The whole representation of structural model assessments and statistics pertaining to the moderating of communication infrastructure for MSMEs' performance in innovation has been shown in Figure 3 and Table 7.

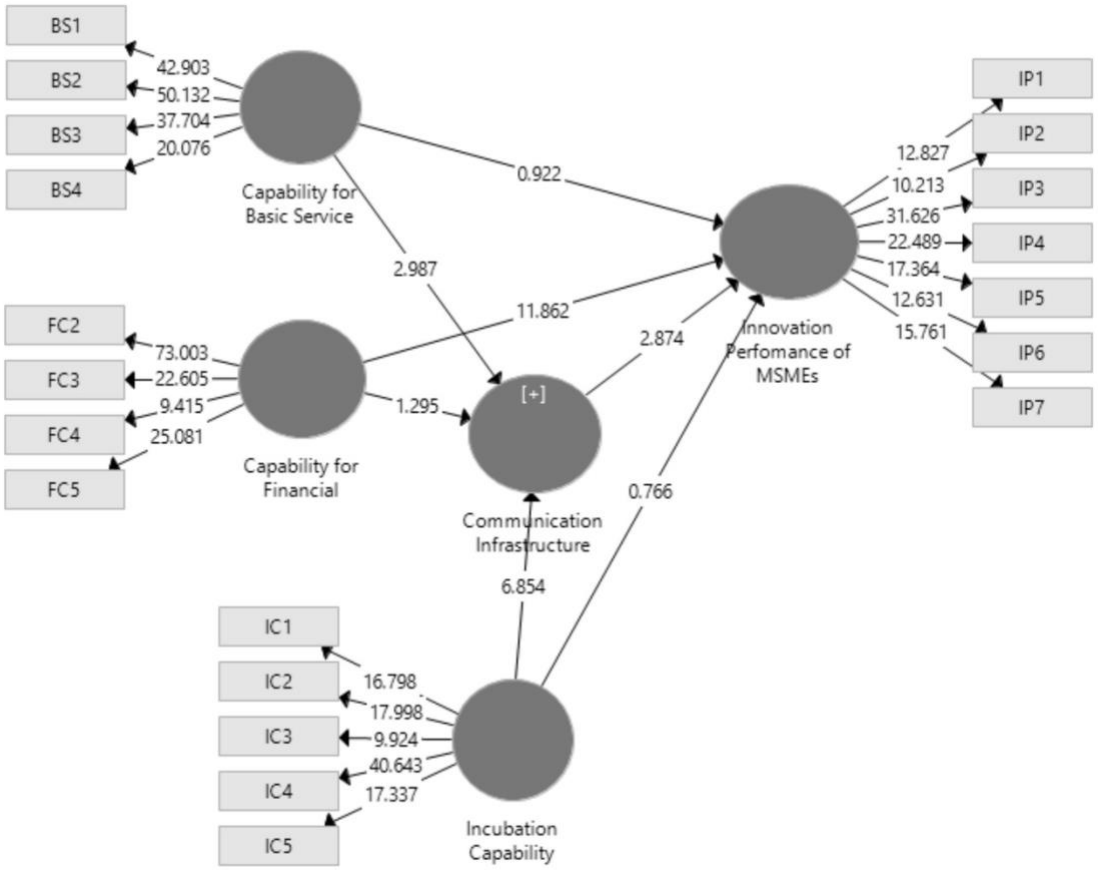

Figure 3 The Structural Model

Test of Hypothesis

In Table 7, the analysis of construct hypotheses is shown along with the beta value, mean, standard deviation, t-value, and p-value. Hence, the choice was made based on the 0.05 and 0.10 p-value.

ISSN 2580-0566; E-ISSN 2621-9778
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Table 7. The Result of The Hypothesis Test

Hypothesis		Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1	Capability for Basic Service -> Innovation Performance of MSMEs	0,075	0,080	0,082	0,922	0,357
H2	Capability for Financial -> Innovation Performance of MSMEs	0,657	0,658	0,055	11,862	0,000
H3	Incubation Capability -> Innovation Performance of MSMEs	0,057	0,045	0,074	0,766	0,444
H4	Capability for Basic Service -> Communication Infrastructure -> Innovation Performance of MSMEs	0,056	0,058	0,031	1,782	0,075
H5	Capability for Financial -> Communication Infrastructure -> Innovation Performance of MSMEs	0,020	0,020	0,017	1,150	0,251
H6	Incubation Capability -> Communication Infrastructure -> Innovation Performance of MSMEs	0,096	0,099	0,035	2,735	0,006

According to Hypothesis 1, the success of MSME innovation is favorably correlated with the capability for basic service of business incubators. The data analysis has shown that the growth of MSME innovation was not significantly impacted by the basic service capability in a direct manner. Hypothesis 1 is not accepted, as shown statistically by a p-value of 0.357 > 0.05 and the t value of statistics being 0.922 < t table 1.975. These findings show that even if the capability for basic service of the business incubator increases, this will not necessarily have an impact on how innovative the MSME will. Additionally, these findings show that factors like self-efficacy, expectations, optimism, and reliability will not have a significant impact on how the MSME will be able to perform.

As per Hypothesis 2, the performance of MSME innovation is favorably correlated with the reported financial capability of business incubators. The findings demonstrate that the financial strength of the business incubator has a direct impact on the generation of MSME innovation. Hypothesis 2 is accepted since it is statistically indicated with a p-value value of 0.000 < 0.05 and a statistic T value of 11.862 > 1.975. These findings suggest that it is feasible to influence the occurrence of MSME innovation when the business incubator's financial capability increases. It might be claimed that stronger innovation performance is closely correlated with larger financial capacity levels. The ability of business incubators to raise money from outside sources, such as financial institutions, governments, and corporations, can increase the internal synergy of incubator businesses

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and hence increase their potential for internal synergy. With reliable financial assistance, incubation businesses can raise enough money to buy advanced equipment or hire technical professionals with expertise in product development. As a result, new product development will be more effective, R&D expenses will be lower, and innovation in MSMEs and the local economy will eventually perform better.

The third hypothesis stated that the performance of MSME innovation is favorably correlated with the incubation capability of business incubators. Hypothesis 3 was rejected since the analysis's findings indicated that the capacity of the business incubator had no appreciable impact on the performance of MSME innovation, as statistically demonstrated by a p-value value of 0.445> 0.05 and the T statistical value of 0.764 < 1.975. This finding indicates that improving incubation capacity does not always improve the performance of MSME innovation creation, and vice versa.

According to Hypothesis 4, the link between the business incubator's basic service capability and MSME innovation performance is positively moderated by the infrastructure for communication inside the incubator company. The analysis's findings indicate that the communication infrastructure for business incubators has a key role in moderating the association between the performance of MSME innovation and the provision of fundamental business incubator services. Hypothesis 4 is valid, as shown statistically by a p-value of 0.086 < 0.10 and the value of t statistics of 1.723 > 1.655 with a threshold of tolerance of 10%.

In accordance with Hypothesis 5, the effectiveness of MSME innovation is favorably moderated by communication infrastructure. This link is mediated by the business incubator's financial capability. The analysis's findings indicate that the business incubator communication infrastructure does not significantly affect how well MSME innovation performs in relation to the business incubator's financial capability. Hypothesis 5 is rejected statistically as shown by a p-value of 0.254 > 0.05 and a value t statistic of 1.143 < 1.975. This finding suggests that if there is an improvement in communication infrastructure, it is probably due to a lack of financial resources on the part of the corporation to support the growth of business incubators, which ultimately prevents MSME innovation.

Sixth hypothesis stated that the association between the capability of business incubators and the success of MSME innovation is positively moderated by communication infrastructure. The analysis's findings indicate that the communication infrastructure for business incubators significantly influences how well MSME innovations function in relation to business incubator capabilities. Hypothesis 7 is accepted, as shown statistically by a p-value of 0.006 < 0.05 and a value of t statistics of 2.782 > 1.975. These findings suggest that business incubators will be better able to utilize different resources and offer better support as a result of the role that facilitating communication infrastructure plays, which will ultimately lead to an improvement in MSMEs' performance in terms of incubation and innovation.

CONCLUSION AND SUGGESTION

The study reveals that business incubators' service, money, and incubation capability have a positive impact on the innovation performance of regional MSMEs. As a result, business incubator administrators and decision-makers should focus more on developing these specific talents for the success of business incubators. Also, the investment in local communication infrastructure plays a crucial role in success of MSMEs. Efficient communications infrastructure investments would not

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only boost the business incubator performance; it will also help to transfer the incubator performance to the innovation performance of the participating MSMES. This will lead to a strong contribution to the notion of regional innovation. As a result, the study's findings have substantial implications for practitioners as well as policymakers.

REFERENCES

Ali Qalati, S., Li, W., Iqbal, S., Yassir Hussain, R., Wen Yuan, L., & Ali, S. (2019). Impact of Price on Customer Satisfaction; mediating role of Consumer Buying Behavior in Telecoms Sector mediating role of Consumer Buying Behaviour in Telecom Sector View project International Journal of Research Impact of Price on Customer Satisfaction; International Journal of Research Impact of Price on Customer Satisfaction, 06(04), 150–165. https://journals.pen2print.org/index.php/ijr/

Asheim, B.T., Gertler, M. S. (2005). The geography of innovation: regional innovation systems. Oxford University Press, 291–317.

Azam, M. S. (2015). Diffusion of ICT and SME performance. In Advances in Business Marketing and Purchasing (Vol. 23A). https://doi.org/10.1108/S1069-096420150000023005

Azari, M. J., Aspelund, A., & Eide, A. E. (2020). Knowledge integration in international SMEs–The effects on firm innovation and performance. Cogent Business and Management, 7(1). https://doi.org/10.1080/23311975.2020.1849890

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16(1), 74–94. https://doi.org/10.1007/BF02723327

Binnui, A. (2021). Technology Incubation as Intervention for Sustaining New Technology-Based Firms' Growth in the Greater Mekong Subregion (GMS). GMSARN International Journal, 15(3), 185–194.

De Oliveira Paula, F., & Da Silva, J. F. (2020). Combining Knowledge to Improve Product and Process Innovation and Performance of SMES in Developing Economies. International Journal of Innovation and Technology Management, 17(2). https://doi.org/10.1142/S0219877020500133

Du, L. (2021). How knowledge affects incremental innovation in SMEs: Knowledge base and knowledge heterogeneity. Journal of General Management, 46(2), 91–102. https://doi.org/10.1177/0306307020930196

Faisol, N. A., Kumar, V., & Aliami, S. (2023). Mediating Role of Inter-Firm Linkages and Innovation Capability towards the sustainability of SMEs in Indonesia. International Journal of Technology, Policy and Management, 23(4), 387–409. https://doi.org/10.1504/IJTPM.2023.133918

Faisol, Sri Aliami, M. A. (2022). Pathway of Building SMEs Performance in Cluster through Innovation Capability. Economics Development Analysis Journal, 11(2), 140–152. https://doi.org/10.15294/edaj.v11i2.46442

Faisol, F., Astuti, P., & Winarko, S. P. (2021). The Role of Technology Usage in Mediating Intellectual Capital on SMEs Performance During the Covid-19 Era. ETIKONOMI, 20(2), 413–428. https://doi.org/10.15408/etk.v20i2.20172

Fardnia, P., Kaspereit, T., Walker, T., & Xu, S. (2021). Financial performance and safety in the aviation industry. International Journal of Managerial Finance, 17(1), 138–165. https://doi.org/10.1108/IJMF-03-2019-0095

Gao, Q., Cui, L., Lew, Y. K., Li, Z., & Khan, Z. (2021). Business incubators as international knowledge intermediaries: Exploring their role in the internationalization of start-ups from an emerging market. Journal of International Management, 27(4), 100861. https://doi.org/10.1016/j.intman.2021.100861

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Special Edition: 42-59, February 2024

Gozali, L., Masrom, M., Zagloel, T. Y. M., Haron, H. N., Dahlan, D., Daywin, F. J., Saryatmo, M. A., Saraswati, D., Syamas, A. F., & Susanto, E. H. (2018). Critical success and moderating factors effect in Indonesian Public Universities' business incubators. International Journal of Technology, 9(5), 1049–1060. https://doi.org/10.14716/ijtech.v9i5.1363

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). Partial Least Squares: The Better Approach to Structural Equation Modeling? Long Range Planning, 45(5–6), 312–319. https://doi.org/10.1016/j.lrp.2012.09.011

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. Long Range Planning, 46(1–2), 1–12. https://doi.org/10.1016/j.lrp.2013.01.001

Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The Use of Partial Least Squares Structural Equation Modeling in Strategic Management Research: A Review of Past Practices and Recommendations for Future Applications. Long Range Planning, 45(5–6), 320–340. https://doi.org/10.1016/j.lrp.2012.09.008

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). Advanced Issues in Partial Least Squares Structural Equation Modeling. 272 Page; SAGE Publications, Inc.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the Academy of Marketing Science, 40(3), 414–433. https://doi.org/10.1007/s11747-011-0261-6

Hall, B. H., Lotti, F., & Mairesse, J. (2013). Evidence on the impact of R&D and ICT investments on innovation and productivity in Italian firms. Economics of Innovation and New Technology, 22(3), 300–328. https://doi.org/10.1080/10438599.2012.708134

Hamdollah, R., & Baghaei, P. (2016). Partial least squares structural equation modeling with R. In Practical Assessment, Research and Evaluation (Vol. 21, Issue 1).

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. Advances in International Marketing, 20(2009), 277–319. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hinton, P. R. (2014). Statistics Explainded. In Routledge: Londo, UK,.

Iammarino, S. (2005). An evolutionary integrated view of regional systems of innovation: Concepts, measures and historical perspectives. European Planning Studies, 13(4), 497–519. https://doi.org/10.1080/09654310500107084

Jasimuddin, S. M., & Naqshbandi, M. M. (2019). Knowledge infrastructure capability, absorptive capacity and inbound open innovation: evidence from SMEs in France. Production Planning and Control, 30(10–12), 893–906. https://doi.org/10.1080/09537287.2019.1582097

Jiang, Q., Wang, D., Wang, Y., & Wu, B. (2022). Innovation Elements, Incubation Capacity, and Incubation Performance in Biomedical Incubation Platforms: Moderating Role of Customized Services. Frontiers in Public Health, 10(May), 1–9. https://doi.org/10.3389/fpubh.2022.873875

Joseph F. Hair Jr., G. Tomas, M. Hult, Christian M. Ringle, and M. S. (2014). A primer on partial least squares structural equation modeling (PLS-SEM). In International Journal of Research & Method in Education. https://doi.org/10.1080/1743727x.2015.1005806

Kiani Mavi, R., Gheibdoust, H., Khanfar, A. A., & Kiani Mavi, N. (2019). Ranking factors influencing strategic management of university business incubators with ANP. Management Decision, 57(12), 3492–3510. https://doi.org/10.1108/MD-06-2018-0688

Kovid, R. K., & Kumar, V. (Eds.). (2022). Cases on emerging markets responses to the COVID-19 pandemic. IGI Global Publications.

Kumar, V., & Ayodeji, O. G. (2020). Web analytics for knowledge creation: A systematic review of

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Special Edition: 42-59, February 2024

tools, techniques and practices. International Journal of Cyber Behavior, Psychology and Learning (IJCBPL), 10(1), 1–14.

Kumar, V., & Ayodeji, O. G. (2021). E-retail factors for customer activation and retention: An empirical study from Indian e-commerce customers. Journal of Retailing and Consumer Services, 59, 102399. https://doi.org/10.1016/j.jretconser.2020.102399

Kumar, V., & Gupta, G. (Eds.). (2021). Strategic management during a pandemic. Routledge and Francis Group.

Kumar, V., & Nanda, P. (2022). Approaching the Porter's five forces through social Media Analytics. International Journal of Services Operations and Informatics, 12(2), 184–200. https://doi.org/10.1504/IJSOI.2022.126329

Kumar, V., & Vidhyalakshmi, P. (2012). Cloud computing for business sustainability. Asia-Pacific Journal of Management Research and Innovation, 8(4), 461–474. https://doi.org/10.1177/2319510X13481905

Kusumawati, R. D., Oswari, T., Yusnitasari, T., Mittal, S., & Kumar, V. (2021). Impact of marketing-mix, culture and experience as moderator to purchase intention and purchase decision for online music product in Indonesia. International Journal of Business Innovation and Research, 25(4), 475–495. https://doi.org/10.1504/IJBIR.2021.117089

Lai, W. H., & Lin, C. C. (2015). Constructing business incubation service capabilities for tenants at post-entrepreneurial phase. Journal of Business Research, 68(11), 2285–2289. https://doi.org/10.1016/j.jbusres.2015.06.012

Leitão, J., Pereira, D., & Gonçalves, Â. (2022). Business Incubators, Accelerators, and Performance of Technology-Based Ventures: A Systematic Literature Review. Journal of Open Innovation: Technology, Market, and Complexity, 8(1). https://doi.org/10.3390/joitmc8010046

Li, C., Ahmed, N., Qalati, S. A., Khan, A., & Naz, S. (2020). Role of Business Incubators as a Tool for Entrepreneurship Development: The Mediating and Moderating Role of Business Start-Up and Government Regulations. Sustainability, 12(5), 1822. https://doi.org/10.3390/su12051822

Lobo, S., & Samaranayake, P. (2020). An innovation management assessment framework. Benchmarking, 27(5), 1633–1656. https://doi.org/10.1108/BIJ-02-2019-0085

Lukeš, M., Longo, M. C., & Zouhar, J. (2019). Do business incubators really enhance entrepreneurial growth? Evidence from a large sample of innovative Italian start-ups. Technovation, 82–83(July), 25–34. https://doi.org/10.1016/j.technovation.2018.07.008

Luthans, F., Youssef, C.M., & Avolio, B. (2006). Psychological Capital: Developing the Human Competitive Edge.

Machado, P. R. S., Treptow, I. C., de Oliveira Roveder, M., Bichueti, R. S., & Zampieri, N. (2019). The role of a business incubator in supporting the needs of innovative business. In Lecture Notes in Electrical Engineering (Vol. 505). Springer International Publishing. https://doi.org/10.1007/978-3-319-91334-6_142

McDonald, R. P. (1996). Path analysis with composite variables. Multivariate Behavioral Research, 31(2), 239–270. https://doi.org/10.1207/s15327906mbr3102_5

Millette, S., Eiríkur Hull, C., & Williams, E. (2020). Business incubators as effective tools for driving circular economy. Journal of Cleaner Production, 266, 121999. https://doi.org/10.1016/j.jclepro.2020.121999

Mittal, S., & Kumar, V. (2019). Study of knowledge management models and their relevance in organisations. International Journal of Knowledge Management Studies, 10(3), 322–335. https://doi.org/10.1504/IJKMS.2019.101491

Mohammadian, H. D., Mohammadian, F. D., & Assante, D. (2020). IoT-education policies on national and international level regarding best practices in German SMEs. IEEE Global Engineering Education Conference, EDUCON, 2020-April, 1848–1857. https://doi.org/10.1109/EDUCON45650.2020.9125148

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Special Edition: 42-59, February 2024

Molodchik, M., Jardon, C., & Yachmeneva, E. (2021). Multilevel analysis of knowledge sources for product innovation in Russian SMEs. Eurasian Business Review, 11(2), 247–266. https://doi.org/10.1007/s40821-020-00166-6

Mungila Hillemane, B. S. (2020). Technology business incubators in India: what determines their R&D contributions to the national economy? International Journal of Innovation Science, 12(4), 385–408. https://doi.org/10.1108/IJIS-03-2020-0020

Nanda, P., & Kumar, V. (2022). Information processing and data analytics for decision making: A journey from traditional to modern approaches. Information Resources Management Journal, 35(2), 1–14. https://doi.org/10.4018/IRMJ.291693

Nanda, P., & Kumar, V. (2023a). Development of MSMEs in India: Challenges vs Govt policies. International Journal of Technology, Policy and Management, 23(3), 245–267. https://doi.org/10.1504/IJTPM.2023.132621

Nanda, P., & Kumar, V. (2023b). Decision analytics for competitive advantage: Cases on using social Media Analytics. International Journal of Technology, Policy and Management, 23(4), 372–386. https://doi.org/10.1504/IJTPM.2023.133920

Ndubisi, N. O., Dayan, M., Yeniaras, V., & Al-hawari, M. (2020). The effects of complementarity of knowledge and capabilities on joint innovation capabilities and service innovation: The role of competitive intensity and demand uncertainty. Industrial Marketing Management, 89(May), 196–208. https://doi.org/10.1016/j.indmarman.2019.05.011

Ngah, R., & Wong, K. Y. (2020). Linking knowledge management to competitive strategies of knowledge-based SMEs. Bottom Line, 33(1), 42–59. https://doi.org/10.1108/BL-08-2019-0105

Ngwabebhoh, F. A., Saha, N., Nguyen, H. T., Brodnjak, U. V., Saha, T., Lengalova, A., & Saha, P. (2020). Preparation and characterization of nonwoven fibrous biocomposites for footwear components. In Polymers (Vol. 12, Issue 12, pp. 1–18). https://doi.org/10.3390/polym12123016

Okundaye, K., Fan, S. K., & Dwyer, R. J. (2019). Impact of information and communication technology in Nigerian small-to medium-sized enterprises. Journal of Economics, Finance and Administrative Science, 24(47), 29–46. https://doi.org/10.1108/JEFAS-08-2018-0086

Omrani, N., Rejeb, N., Maalaoui, A., Dabic, M., & Kraus, S. (2022). Drivers of Digital Transformation in SMEs. IEEE Transactions on Engineering Management, 1–14. https://doi.org/10.1109/TEM.2022.3215727

Peterson S., & Luthans F. (2007). Psychological Capital: Developing the Human Competitive Edge Related papers.

Cooke, P., Uranga, M. G., & Etxebarria, G. (1997). Regional innovation systems: Institutional and organisational dimensions. Research policy, 26(4-5), 475-491. https://doi.org/10.5260/chara.23.1.9

Podsakoff, P. M., & Organ, D. W. (1986). Self-Reports in Organizational Research: Problems and Prospects. Journal of Management, 12(4), 531–544. https://doi.org/10.1177/014920638601200408

Pustovrh, A., Rangus, K., & Drnovšek, M. (2020). The role of open innovation in developing an entrepreneurial support ecosystem. Technological Forecasting and Social Change, 152(October 2018). https://doi.org/10.1016/j.techfore.2019.119892

Roman, A., & Rusu, V. D. (2022). Digital Technologies and the Performance of Small and Medium Enterprises. Studies in Business and Economics, 17(3), 190–203. https://doi.org/10.2478/sbe-2022-0055

Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. Australasian Marketing Journal, 27(3), 197–211. https://doi.org/10.1016/j.ausmj.2019.05.003

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Special Edition: 42-59, February 2024

equation modeling (PLS-SEM): A useful tool for family business researchers. Journal of Family Business Strategy, 5(1), 105–115. https://doi.org/10.1016/j.jfbs.2014.01.002

Saurabh, & Kumar, V. (2017). Technology integration for the success of B2C M-commerce in India: Opportunities and challenges. IUP Journal of Information Technology, 13(1), 24–35.

Sedita, S. R., Apa, R., Bassetti, T., & Grandinetti, R. (2019). Incubation matters: Measuring the effect of business incubators on the innovation performance of start-ups. R and D Management, 49(4), 439–454. https://doi.org/10.1111/radm.12321

Tansey, O. (2007). Process tracing and elite interviewing: A case for non-probability sampling. PS - Political Science and Politics, 40(4), 765–772. https://doi.org/10.1017/S1049096507071211

Tian, M. W., Wang, L., Yan, S. R., Tian, X. X., Liu, Z. Q., & Rodrigues, J. J. P. C. (2019). Research on Financial Technology Innovation and Application Based on 5G Network. IEEE Access, 7, 138614–138623. https://doi.org/10.1109/ACCESS.2019.2936860

Tuffour, J. K., Amoako, A. A., & Amartey, E. O. (2022). Assessing the Effect of Financial Literacy Among Managers on the Performance of Small-Scale Enterprises. Global Business Review, 23(5), 1200–1217. https://doi.org/10.1177/0972150919899753

Usman, I., Maupa, H., Idrus, M., Haerani, S., & Nurjanna, N. (2020). Moderation effect of competence of knowledge and innovation: case of Bali. Business Process Management Journal, 26(6), 1307–1327. https://doi.org/10.1108/BPMJ-06-2019-0236

Wang, Y., Zhao, N., Lei, X., & Long, R. (2021). Green finance innovation and regional green development. Sustainability (Switzerland), 13(15), 1–19. https://doi.org/10.3390/su13158230

Xiao, L., & North, D. (2018). The role of Technological Business Incubators in supporting business innovation in China: a case of regional adaptability? Entrepreneurship and Regional Development, 30(1–2), 29–57. https://doi.org/10.1080/08985626.2017.1364789

Yao, J., Crupi, A., Di Minin, A., & Zhang, X. (2020). Knowledge sharing and technological innovation capabilities of Chinese software SMEs. Journal of Knowledge Management, 24(3), 607–634. https://doi.org/10.1108/JKM-08-2019-0445

Zhao, L., Zhang, H., & Wu, W. (2017). Knowledge service decision making in business incubators based on the supernetwork model. Physica A: Statistical Mechanics and Its Applications, 479, 249–264. https://doi.org/10.1016/j.physa.2017.03.013