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The Impact of Business Incubation Programmes on Start-up Success and Economic Growth in Indonesia

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ABSTRACT

This study investigates the impact of business incubation programs on start-up success and economic growth in Indonesia. Using a quantitative approach, data were collected from 80 start-ups through a structured questionnaire utilizing a 5-point Likert scale. The data were analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS 3). The results reveal that business incubation programs significantly enhance start-up success, with a positive effect on the overall success of start-ups. Furthermore, successful start-ups contribute to economic growth by generating jobs, fostering innovation, and promoting market expansion. The findings underscore the importance of business incubation as a catalyst for entrepreneurial success and economic development. The study suggests that strengthening business incubation programs should be a priority for policymakers in Indonesia to promote a thriving start-up ecosystem and sustain long-term economic growth.

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1. INTRODUCTION

The entrepreneurial landscape in Indonesia is burgeoning, with a notable increase in start-ups driven by the demand for innovative solutions. However, these start-ups face challenges in achieving sustainability and growth. Business incubation programs are pivotal in addressing these challenges by offering mentorship, funding, networking, and access to resources, which support nascent businesses through their critical early stages, equipping them with necessary tools to thrive in competitive markets. Business incubators provide essential mentorship and training to enhance entrepreneurial skills and competencies among start-up founders, with initiatives like the certification of business incubator consultants in Indonesia proving effective in technology business incubator management [1]. Furthermore, incubators facilitate access to funding and resources, crucial for start-ups that typically face capital constraints, thereby significantly enhancing the financial performance and growth potential of MSMEs [2]. Networking opportunities created through incubators connect start-ups with industry experts, investors, and other entrepreneurs, building social capital that is essential for developing sustainable competitive strategies [3]. Nevertheless, start-ups in Indonesia contend with intense competition and dynamic market

conditions, necessitating effective marketing strategies and product diversification [4]. Additionally, external factors such as environmental conditions, entrepreneurial motivation, and social support impact start-up success, and comprehensive incubation programs that integrate these elements can help mitigate these challenges [5].

Business incubators in Indonesia play a crucial role in fostering innovation, entrepreneurship, and economic growth by providing essential resources and a supportive environment that boosts start-up success rates. These programs not only benefit entrepreneurs individually but also support economic development by creating jobs, raising productivity, and sparking new industries. Through training and mentoring, incubators enhance human resource competence, aiding young entrepreneurs in idea development and strengthening the entrepreneurship ecosystem, which positively affects the local economy and society [6]. Initiatives like the 'Ships' Business Incubator in East Java foster entrepreneurial attitudes and address challenges such as fear of failure through targeted coaching, acting as effective launchpads for new businesses [7]. The incubation strategy, especially in information technology, also supports the growth of MSMEs by offering training, collaboration, and financial assistance, boosting competitiveness and productivity [8]. Incubator success in Indonesia is influenced by resources, service capabilities, and government support; while resources and support don't directly drive success, they enhance service capabilities—a critical factor, especially as most incubators are non-profit, university-based, and technology-focused [9].

Business incubation programs in Indonesia play a vital role in fostering start-up success and promoting economic growth by providing essential resources, mentorship, and an innovation-friendly environment. Incubators leverage knowledge management as a critical factor, mediating the effects of funding support, government assistance, and governance on technology performance, which significantly boosts start-up success [10]. Additionally, these programs enhance human resource competence through training and mentoring, supporting the growth of young entrepreneurs [6]. Incubators are also designed to foster entrepreneurial attitudes, addressing challenges such as fear of failure and lack of knowledge, thereby increasing entrepreneurial interest and success [7]. The growth of incubators is positively linked to the digital economy in Indonesia, strengthened further by venture capital investments that foster digital innovation and economic progress [11]. Moreover, incubators contribute to the local economy by connecting elements of the entrepreneurship ecosystem and delivering broader societal benefits [6]. This study aims to fill this gap by assessing the impact of business incubation programs on start-up success and their subsequent effect on economic growth in Indonesia.

2. LITERATURE REVIEW

2.1 Business Incubation Programs: Definition and Types

Business incubation programs in Indonesia are essential for fostering entrepreneurship and economic development by providing resources and support to startups. Backed by public and private entities like government agencies, universities, and private investors, these incubators stimulate local economies and create jobs. Offering services such as office space, mentoring, and strategic planning, incubators support new business growth and enhance human resource competence through targeted training [6]. By encouraging youth entrepreneurship and innovation, programs like the 'Ships' Business Incubator in East Java address challenges such as fear of failure, promoting entrepreneurial attitudes [7]. Comprehensive support, including access to funding and networks, helps startups turn ideas into viable businesses [12]. The National Incubation Center in Pakistan exemplifies how incubators create a dynamic startup ecosystem through mentorship and investment [13]. Beyond business growth, incubators contribute to economic and social

development by tackling unemployment and supporting specialized ventures, providing critical tools and expertise for startup success [14].

2.2 Impact of Business Incubation on Start-Up Success

Business incubation plays a significant role in enhancing the success of start-ups by providing essential resources and support systems to address early-stage challenges. Incubators create a structured environment where start-ups access training, mentorship, and financial resources crucial for overcoming barriers such as capital shortages, market entry difficulties, and managerial expertise gaps. By offering resources like office space, financial advice, and access to networks, incubators facilitate start-up development [15]. Training and mentoring programs further enhance human resource competence, fostering entrepreneurship among young people and aiding local economic growth [6]. Incubators also shape entrepreneurial attitudes by reducing fears of failure and knowledge gaps, thereby increasing interest in entrepreneurship, as exemplified by the 'Ships' Business Incubator in East Java [7]. Networking and mentorship opportunities, like those provided by the National Incubation Center in Pakistan, are vital for both personal and business growth, even amidst challenges like insufficient financial support [13]. Additionally, incubators and accelerators are instrumental in nurturing tech talent and fostering innovation, thereby driving regional economic and technological advancement by transforming ideas into scalable businesses [16].

2.3 Economic Growth and Development through Business Incubation

Business incubation programs contribute significantly to economic development by fostering job creation, innovation, and regional competitiveness. By providing essential resources, mentorship, and networking, they improve start-up success rates and stimulate local economies. In emerging economies like Indonesia, incubators align start-up growth with national goals, such as poverty reduction and sustainable development, nurturing innovative start-ups that generate employment and support industry growth. They enhance human resource competence through targeted training, creating an environment conducive to idea generation and ecosystem linkages [6]. Additionally, incubators play a key role in transforming raw ideas into scalable tech businesses, impacting regional development [16]. By engaging young entrepreneurs and retaining talent in less urbanized areas, they address local economic issues like unemployment [14], [17]. With a supportive environment offering office space, financial advice, and guidance, incubators act as crucial intermediaries in the start-up phase, providing new businesses with necessary tools for success [15].

2.4 Conceptual Framework and Hypotheses

Based on the reviewed literature, a conceptual framework for this study is developed to assess the relationship between business incubation and start-up success, and its impact on economic growth in Indonesia. The framework suggests that business incubation programs contribute to start-up success by providing access to resources, mentorship, and funding, which in turn enhances business performance. This success at the start-up level is expected to translate into broader economic benefits, including job creation and innovation.

From this framework, the following hypotheses are proposed:

H1: Business incubation programs have a positive effect on start-up success in Indonesia.

H2: Start-up success positively contributes to economic growth in Indonesia.

H3: Business incubation programs indirectly contribute to economic growth through their impact on start-up success.

This study aims to empirically test these hypotheses using data from 80 start-ups that have participated in incubation programs in Indonesia.

3. METHODS

3.1 Research Design

This study follows a correlational research design, which is suitable for investigating the relationships between business incubation, start-up success, and economic growth. The primary objective is to assess the direct and indirect effects of incubation programs on start-up success and determine how this success translates into broader economic benefits. A quantitative research approach is chosen as it allows for the systematic collection and analysis of data to test hypotheses and generalize findings across a larger population. The research design is structured around a conceptual framework derived from the literature review, which posits that business incubation programs positively influence start-up success, and that successful start-ups contribute to economic growth. To collect data, the study employs a survey questionnaire targeting participants involved in incubation programs.

3.2 Population and Sample

The population for this study consists of start-up businesses in Indonesia that have participated in business incubation programs, selected from a variety of industries including technology, e-commerce, manufacturing, and service sectors to capture a diverse range of experiences with business incubation. A non-probability convenience sampling technique is used to select the sample, focusing on start-ups that have completed or are currently engaged in incubation programs. A sample size of 80 start-ups is chosen to ensure statistical reliability while maintaining feasibility in terms of data collection. This sample size is based on recommendations for SEM-PLS analysis, where a minimum of 10 observations per parameter is typically advised for reliable results [18], making it adequate for testing multiple hypotheses in structural equation modeling.

3.3 Data Collection Procedures

Data for this study are collected using a self-administered questionnaire distributed to participants of selected business incubation programs in Indonesia. The survey employs a Likert scale ranging from 1 to 5 (1 = strongly disagree, 5 = strongly agree) for most of the questions, allowing participants to express varying degrees of agreement with statements related to their experiences and business outcomes. The data collection process involves reaching out to business incubators and entrepreneurs who have participated in incubation programs in both urban and rural areas across Indonesia. Participants are assured of confidentiality and voluntary participation, with strict adherence to ethical considerations, including informed consent, during the data collection process.

3.4 Data Analysis Techniques

The data collected from the survey are analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS 3), chosen for its ability to handle complex relationships among variables and its robustness in analyzing small sample sizes, making it well-suited for this study. The data analysis is conducted in two stages: first, the Measurement Model Evaluation, which involves assessing the reliability and validity of the indicators used to measure each construct, including Cronbach's alpha, composite reliability, and average variance extracted (AVE), along with examining convergent and discriminant validity to ensure constructs are measured appropriately. The second stage is the Structural Model Evaluation, where the relationships between business incubation, start-up success, and economic growth are tested. Path coefficients, t-statistics, and R-squared values are analyzed to determine the strength and significance of these relationships, with hypotheses considered significant if the t-statistic exceeds 1.96, corresponding to a 95% confidence level.

4. RESULTS AND DISCUSSION

4.1 Demographic Sample

The sample for this study consists of 80 start-up companies that participated in business incubation programs in Indonesia, and their demographic characteristics were analyzed to provide insights into the composition of the entrepreneurs and their businesses. The age distribution of the

entrepreneurs was as follows: 10% under 25 years old, 45% between 26-35 years old, 30% between 36-45 years old, 10% between 46-55 years old, and 5% above 55 years old, with the majority (45%) in the 26-35 age range, reflecting the trend of young, dynamic entrepreneurs in Indonesia. The gender distribution showed a clear male dominance, with 70% male and 30% female participants. Regarding educational background, 55% of participants had a Bachelor's degree, 25% held a Master's degree, 15% had completed high school, and 5% had a Doctoral degree, indicating a well-educated entrepreneur base. The start-ups were distributed across various sectors: 35% in technology, 25% in e-commerce, 15% in manufacturing, 15% in services, and 10% in other sectors, with technology and e-commerce being the most represented, reflecting Indonesia's growing digital economy. As for years of operation, 45% of the start-ups were in the early stages (1-3 years), 35% had been operating for 4-5 years, and 10% had been in business for more than 5 years, suggesting a mix of new and more mature companies in the sample.

4.2 Measurement Model Evaluation

The measurement model evaluates the reliability and validity of the constructs used in the study, which include business incubation, start-up success, and economic growth, each measured by multiple indicators. The factor loading results of all items are above 0.70. The results from the evaluation indicated strong psychometric properties for all constructs. Reliability was assessed using Cronbach's alpha and composite reliability (CR), with both values for each construct exceeding the acceptable threshold of 0.70, confirming internal consistency. For instance, the Cronbach's alpha for business incubation was 0.852, for start-up success it was 0.885, and for economic growth it was 0.839, while the composite reliability for all constructs was above 0.80, supporting the reliability of the scales. Convergent validity, assessed using the Average Variance Extracted (AVE), showed that all constructs exceeded the threshold of 0.50, meaning more than 50% of the variance in the indicators was explained by their respective constructs, with AVEs of 0.744 for business incubation, 0.726 for start-up success, and 0.69 for economic growth. Discriminant validity was confirmed by comparing the square root of the AVE for each construct to the correlations between the constructs, with the results showing that the square root of the AVE for each construct was greater than the correlations, thus ensuring that the constructs are distinct. For example, the correlation between business incubation and start-up success was 0.626, lower than the square root of the AVE for both constructs, confirming discriminant validity. Based on these results, the measurement model demonstrates adequate reliability and validity, allowing for confidence in the subsequent structural model evaluation.

4.3 Structural Model Evaluation

In the structural model evaluation, the hypothesized relationships between business incubation, start-up success, and economic growth were tested using path analysis. The model fit was assessed by examining the R-squared (R^2) values, path coefficients, and t-statistics. The R^2 values reflect the explanatory power of the model for each endogenous variable. The R^2 value for start-up success was 0.56, indicating that business incubation explained 56% of the variance in start-up success, while the R^2 value for economic growth was 0.43, showing that start-up success explained 43% of the variance in economic growth. These R^2 values suggest that the model has moderate to good explanatory power for the dependent variables. Path coefficients and their associated t-statistics were also analyzed to assess the strength and significance of the relationships.

Table 1. Hypothesis Testing

Path	Path Coefficient	t-Statistic	Hypothesis Status
Business Incubation → Start-Up Success	0.656	5.347	Supported

Start-Up Success → Economic Growth	0.602	4.875	Supported

The path coefficient between business incubation and start-up success was 0.656 (t = 5.347), which is statistically significant at the 95% confidence level, indicating a strong positive relationship between business incubation and start-up success, thus supporting the first hypothesis (H1): "Business incubation programs positively affect start-up success." Similarly, the path coefficient between start-up success and economic growth was 0.602 (t = 4.875), also statistically significant at the 95% confidence level, supporting the second hypothesis (H2): "Start-up success positively contributes to economic growth." This positive path coefficient suggests that the success of start-ups plays a crucial role in driving broader economic development, including job creation, innovation, and market expansion.

The model also tests for indirect effects, where business incubation influences economic growth indirectly through its impact on start-up success. The indirect effect of business incubation on economic growth through start-up success was 0.39, which is statistically significant (t = 3.65). This suggests that business incubation programs not only have a direct impact on start-up success but also contribute to economic growth through fostering successful businesses.

DISCUSSION

Impact of Business Incubation on Start-Up Success

The findings confirm that business incubation programs significantly enhance start-up success. The positive and significant path coefficient between business incubation and start-up success supports the view that incubation provides essential resources such as mentorship, networking, funding, and training, which are crucial for start-ups to navigate the challenges of the early business stages. This is consistent with prior studies, such as those by [6], [7], [19]–[21], who highlighted that incubators offer critical support mechanisms that increase the likelihood of business survival and growth.

The success of start-ups in Indonesia can be attributed to the quality of incubation programs available to them. These programs not only equip entrepreneurs with technical and business knowledge but also help them build relationships with other business owners, investors, and customers, which are vital for growth. Furthermore, incubators often help start-ups avoid common pitfalls by offering advice on scaling and market positioning, which directly influences their success.

Contribution of Start-Up Success to Economic Growth

The second key finding of the study is the positive relationship between start-up success and economic growth. Successful start-ups contribute to job creation, innovation, and local economic development, supporting the argument that entrepreneurship is a key driver of economic progress. This aligns with the findings [5], [11], [22] and [23], who argue that successful start-ups can drive economic growth by providing employment opportunities, introducing innovative products or services, and creating value for communities.

Start-ups in Indonesia, particularly in the technology and e-commerce sectors, have created thousands of jobs and stimulated innovation, contributing to the country's economic development. As these businesses grow, they generate more employment, increase consumer spending, and expand into new markets, all of which have a positive impact on the national economy.

Role of Business Incubation in Facilitating Economic Growth

The indirect effect analysis indicates that business incubation plays a significant role in fostering economic growth through its impact on start-up success. This highlights the importance of policies that support the development of incubation programs as part of a broader strategy to promote entrepreneurship and stimulate economic development in Indonesia. Government and private sector initiatives to expand access to

incubation services can help more start-ups succeed, ultimately leading to greater economic benefits at both the local and national levels.

5. CONCLUSION

This study highlights the critical role of business incubation programs in fostering start-up success and driving economic growth in Indonesia. The results demonstrate that these programs provide essential support to entrepreneurs, improving their chances of success by offering mentorship, resources, and networking opportunities. Additionally, successful start-ups contribute significantly to the economy by creating jobs, encouraging innovation, and stimulating market expansion. The study emphasizes the need for policymakers to invest in and expand business incubation programs to support the growth of start-ups and, consequently, enhance economic development in Indonesia. Future research could further explore the long-term impact of business incubation on the sustainability and scalability of start-ups, as well as the specific elements of incubation that most effectively contribute to entrepreneurial success and economic prosperity.

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