JURNAL ILMU MANAJEMEN
PROFITABILITY
ISSN 2714-6332(print) | 2614-3976 (online)
Member of Crossref 10.26618
Published by :
Program Studi Manajemen
Fakultas Ekonomi dan Bisnis
Universitas Muhammadiyah Makassar

Start-Up Ecosystem in Makassar: Determinants of Success and Challenges Faced

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Keywords:

Start-ups, digital ecosystem, technology entrepreneurship, regional innovation, digital economy.

Abstract

This study aims to examine the development of the start-up ecosystem in Makassar City, focusing on the factors that influence success and the challenges faced by start-up actors. Using mixed methods, this study combines qualitative data analysis of 30 local start-ups and in-depth interviews with various stakeholders, such as start-up founders, investors, local government, as well as communities and incubation centers. The results show that access to capital, support from local government, and the quality of human resources are key success factors for start-ups, while key challenges include limited digital infrastructure and difficulty accessing broader markets. The practical implications of these findings include the need to improve access to capital through partnerships with investors and more affordable funding programs, the development of equitable digital infrastructure to support access and service quality, and human resource training to strengthen technical and managerial skills. In addition, there needs to be support to help start-ups access regional and national markets through collaboration with local governments and joint promotions, in order to expand market reach and improve the competitiveness of start-ups in Makassar. With these steps, the start-up ecosystem in Makassar can further develop and have a positive impact on the local economy

1. Introduction

The development of the global digital economy has encouraged the growth of start-ups as drivers of innovation and business transformation in various regions. In Indonesia, this phenomenon is not only centered in Java, but has also started to spread to Eastern Indonesia, ~~with~~ Makassar as one of the epicenters (Aras et al., 2021). As the largest city in Eastern Indonesia with a population of 1.5 million people (BPS Makassar, 2024), Makassar has significant potential in developing a digital start-up ecosystem (Nadhifah, 2023).

Despite this, the start-up ecosystem in Makassar still faces a number of significant structural challenges. Limited access to funding, sub-optimal quality of human resources, and the complexity of local regulations are major obstacles to the development of innovative entrepreneurs (Aruni & Hidayat, 2019). A research gap that has not been fully explored is how these factors interact with each other and create systemic barriers to start-up growth in the region.

Data from the Makassar City Communication and Informatics Office shows that of the 300 start-ups recorded as active in Makassar, only 15% are able to survive for more than three years (Firman et al., 2023). This high failure rate indicates fundamental challenges in the local start-up ecosystem that need to be systematically identified and addressed (Mushlimah et al., 2022). The gap in access to funding is one of the crucial issues. Based on the literature (Adella, 2023), only 5% of the total national venture capital investment flows to start-ups outside Java, with Makassar receiving only 1.2%. This limited access to funding limits the capacity of local start-ups to develop and compete at the national and international levels. The human resources aspect is also problematic. Despite Makassar having 122 universities that collectively produce more than 15,000 graduates per year, a survey conducted by (Asosiasi E-commerce Indonesia, 2023) revealed a gap between industry needs and graduate competencies. Around 65% of start-ups in Makassar reported difficulties in recruiting qualified digital talent,

especially for software developer and data analysis positions. Digital infrastructure, although growing, still shows a significant gap. In the research (Prasetiyo et al., 2024) shows that while internet penetration in the city center of Makassar reaches 78.3%, this figure drops dramatically to 45% in the suburban areas. This infrastructure imbalance creates barriers for start-ups to reach a wider potential market.

Supporting regulations and policies also still need improvement. Although the Makassar City Government has launched the Makassar Smart City program and various start-up support initiatives, implementation on the ground still faces various bureaucratic obstacles. The Doing Digital Business survey conducted by Bank Indonesia according to (Kartawaria & Normansah, 2023) indicates that 72% of start-ups in Makassar still experience difficulties in the licensing process and regulatory compliance. A research gap that has not been fully explored is how these factors interact with each other and create systemic barriers to start-up growth in the region.

This research aims to identify and analyze the dynamics of the start-up ecosystem in Makassar with a comprehensive approach. This study will make theoretical and practical contributions by mapping structural challenges, exploring adaptation mechanisms, and formulating concrete recommendations for stakeholders. By referring to comparative research in the Southeast Asian region such as the study of Fatmawaty et al (2023) on entrepreneurial ecosystems in Indonesia, this research will present a more in-depth perspective on the specific context of Makassar.

The significance of the study lies in its potential practical implications. By identifying key factors that influence start-up growth, this study can provide strategic inputs for local governments, investors and entrepreneurship support institutions to design more targeted interventions. Furthermore, this study is expected to bridge the knowledge gap between the theoretical potential and empirical reality of innovation ecosystem development in Eastern Indonesia. Thus, this research does not merely provide a diagnostic portrait, but also offers a strategic framework for transforming challenges into opportunities for innovation-based economic development in Makassar.

2. Literature Review

2.1. Start-Up Ecosystem

The concept of the start-up ecosystem refers to the interdependent network of entrepreneurs, investors, institutions, and policies that collectively shape entrepreneurial outcomes (Isenberg, 2011; Spigel, 2017). Research indicates that strong ecosystems are characterized by access to finance, high-quality human capital, enabling infrastructure, and supportive regulations (Mason & Brown, 2014; Autio et al., 2018). In emerging economies, however, ecosystem maturity is often constrained by weak institutional support and market fragmentation, leading to high start-up failure rates.

2.2. Makassar as a Regional Hub

Within Indonesia, the concentration of start-up activity has historically been in Jakarta, Bandung, and Surabaya. Recent studies, however, highlight the rise of secondary cities such as Makassar as emerging innovation hubs (Aras et al., 2021; Nadhifah, 2023). As the largest city in Eastern Indonesia, Makassar benefits from its strategic geographic position, digital adoption, and growing number of entrepreneurial initiatives (BPS Makassar, 2024). Nonetheless, literature suggests that its ecosystem is still underdeveloped compared to Java-based ecosystems, particularly in terms of investment and institutional support.

2.3. Determinants of Success

Scholars emphasize several determinants of start-up success. **Access to finance** remains a fundamental driver, though start-ups in Makassar often rely on personal savings or informal networks due to limited access to venture capital (Adella, 2023; Balai Diklat Industri Makassar, 2023). **Human**

capital is another determinant, with local universities producing graduates but facing a mismatch between academic training and digital industry needs, especially in software engineering and data analytics (Mahyuni & Rinaldi, 2022; Asosiasi E-Commerce Indonesia, 2023). Additionally, **digital infrastructure** in Makassar has improved significantly but still shows uneven distribution across the region, limiting broader market expansion (Prasetiyo et al., 2024).

2.4. Challenges Faced by Start-Ups

Despite growing opportunities, start-ups in Makassar encounter structural and systemic challenges. **Regulatory complexity** and bureaucratic licensing procedures are frequently cited as barriers to business growth (Aruni & Hidayat, 2019). **High failure rates**—with less than 20% of start-ups surviving beyond three years—reflect difficulties in sustaining operations under resource constraints (Firman et al., 2023; Mushlimah et al., 2022). Furthermore, **lack of research facilities and investor confidence** continues to hinder innovation and scalability (Bau Massepe, 2018; Fatmawaty et al., 2023).

2.5. Entrepreneurship and Digital Economy

Makassar's start-up growth is closely linked to broader trends in Indonesia's digital economy, which is projected to be one of the largest in Southeast Asia (Asosiasi E-Commerce Indonesia, 2023). The adoption of e-commerce, fintech, and digital services reflects both opportunities and challenges for entrepreneurs, particularly in navigating rapid technological change and consumer behavior shifts. Literature underlines that entrepreneurial capacity in the digital era requires not only technical skills but also resilience, adaptability, and strategic networking.

2.6 Research Gap

While prior research has identified key determinants and challenges of start-up development in Makassar, there is still limited empirical work capturing the **lived experiences of founders** in navigating these dynamics. Few studies explicitly integrate the interplay of financial, human, and institutional factors to explain how start-ups adapt in regional ecosystems. This study addresses that gap through a qualitative, phenomenological exploration of start-up founders' perspectives in Makassar.

3. Research Methods

This research explores the start-up ecosystem in Makassar using a qualitative research design with an interpretative phenomenological approach. The study is grounded in a constructivist–interpretative paradigm, aiming to uncover the lived experiences of start-up founders in building and growing their businesses. This design allows for a deep exploration of entrepreneurial dynamics that cannot be captured solely through statistical measurement.

The research process involved several stages. Data were collected through in-depth interviews with 15 founders of local start-ups, selected using purposive sampling to ensure relevance and richness of information. Data collection took place from January to June 2024, employing semi-structured interview protocols that were developed and validated through pilot testing with three respondents. A list of open-ended questions was used to guide the discussions, enabling participants to share their perspectives freely. Each interview lasted approximately 60–90 minutes and was documented through audio recordings (with participant consent), detailed field notes, and verbatim transcriptions.

The data analysis followed Miles & Huberman's thematic analysis technique, which includes four key stages: (1) data reduction, (2) coding (open, axial, and selective), (3) data presentation, and (4) conclusion drawing. This iterative process allowed for the identification of recurring themes and the construction of a holistic understanding of the entrepreneurial

ecosystem. To ensure the trustworthiness of the findings, several validation techniques were applied, including method triangulation, source triangulation, and theoretical triangulation, as well as member checking, audit trails, and peer debriefing. Ethical considerations were addressed by obtaining informed consent, ensuring confidentiality of data, and offering participants the option of anonymity.

The uniqueness of this methodology lies in its in-depth and multidimensional approach, focusing not merely on descriptive accounts but on understanding the subjective meanings and complex realities of start-up founders in Makassar. By emphasizing interpretive depth and contextual insights, this study is expected to contribute comprehensive perspectives and practical recommendations for the development of the entrepreneurial ecosystem in the region.

4. Results and Discussion

4.1 Analysis of Key Factors of the Start-up Ecosystem

The start-up ecosystem in Makassar is influenced by various key factors that are interrelated and play an important role in determining the success of local start-ups. Based on the research results, there are three main factors that are the focus of analysis: access to capital, human resources, and supporting infrastructure.

4.2 Capital Access

Access to capital is one of the crucial factors affecting the development of start-ups in Makassar. The local government funding program through Dinas KUMKM has provided an initial stimulus for early-stage start-ups, with a budget allocation of Rp 15 billion in 2023 (Balai Diklat Industri Makassar, 2023). However, the implementation of this program still faces bureaucratic challenges and rigid criteria, causing only 40% of start-ups to successfully access the fund. The presence of local angel investors shows a positive trend with a 30% increase in the last two years, dominated by local entrepreneurs who are starting to see the potential of investing in the digital sector. However, the available funding capacity is still limited, with the average investment ranging from IDR 100-500 million per start-up. Access to national venture capital also remains a challenge, with only 5% of Makassar start-ups successfully securing funding from national VCs by 2023. Incubation and acceleration programs organized by various institutions such as Makassar Digital Valley and Start-up Studio have provided seed funding support and access to investor networks. There were 12 active acceleration programs in 2023, with a total funding of Rp 8 billion for 25 selected start-ups.

4.3 Capital Resources

The human resources aspect shows complex dynamics in Makassar's start-up ecosystem. The availability of digital talent is still a major obstacle, with the gap between demand and availability reaching 60% for software developer positions and 45% for data analyst positions. A survey of local start-ups revealed that 72% had difficulty in recruiting talent with the right qualifications. The quality of local university graduates is showing gradual improvement, with 15 universities in Makassar having developed specialized curricula in digital technology and entrepreneurship. However, there is still a gap between graduates' competencies and industry needs, especially in terms of practical skills and project-based learning experience (Mahyuni & Rinaldi, 2022). Training and certification programs organized by various institutions have contributed to improving the quality of digital human resources. Throughout 2023, there were more than 50 training programs with a total of 2,500 participants, focusing on technical competencies such as programming, digital marketing, and product management. The business mentor network is also growing with the presence of 35 active mentors from various industry backgrounds, providing guidance and experience sharing for start-up founders.

4.4 Supporting Infrastructure

Supporting infrastructure plays a vital role in creating a conducive environment for start-up growth. The development of coworking spaces in Makassar shows a positive trend with 15 active facilities spread across various strategic locations, providing a total capacity for 1,200 workers. The average occupancy rate reaches 75%, indicating the high demand for collaborative workspaces. Internet connectivity shows significant improvement with fiber optic penetration reaching 85% in the downtown area. The average internet speed is recorded at 50 Mbps for fixed broadband connections, although there is still a disparity between the city center and suburbs. Makassar's Smart City program has provided 150 public wifi points, supporting digital accessibility for the community.

Research and development facilities have been developed through collaboration between the government, academia and the private sector. Makassar Technopark, with an area of 6.7 hectares, provides research laboratories, testing facilities, and collaboration spaces. Five leading universities in Makassar have also built innovation centers that can be accessed by start-ups for research and product development. The existence of business incubators is further strengthened by the presence of eight active incubators that offer comprehensive programs including mentoring, access to markets, and operational support (Bau Massepe, 2018). The incubation program has produced 45 alumni start-ups by 2023, with a survival rate of 65% after two years of operation

4.5 Challenges Faced in Developing Makassar's Start-up Ecosystem

The analysis of the research results reveals various significant challenges faced in the development of the start-up ecosystem in Makassar. These challenges can be categorized into two main groups: internal challenges originating from within the start-up organization itself, and external challenges related to environmental and regulatory factors.

4.6 Internal Challenges

Limited capital is one of the most crucial internal challenges for start-ups in Makassar. The survey results show that 85% of start-ups experience difficulties in accessing seed funding, with the average seed capital requirement ranging from Rp 500 million to Rp 2 billion. The limited number of local investors with experience in digital investment is a hindering factor, with only 15 active angel investors in Makassar by 2023. Lack of understanding of business valuation is also an obstacle, with 70% of start-up founders reporting difficulty in determining the right valuation for negotiations with investors. Human resource issues have also emerged as a serious challenge.

The digital skills gap is a major issue, with 72% of start-ups reporting difficulties in finding talent with the right competencies, especially for technical positions such as software developers and data scientists. The brain drain phenomenon to big cities, especially Jakarta and Surabaya, further exacerbates this situation, with an estimated 30% of local digital talent choosing to pursue a career outside of Makassar each year. The gap in salary expectations between local talent and the financial capabilities of early-stage start-ups is also a challenge, where there is a gap of around 40% between talent salary expectations and the available budget.

4.7 External Challenges

In terms of infrastructure, despite significant improvements in recent years, there are still some fundamental obstacles. Internet connectivity is uneven, with a significant disparity between the city center (average 50 Mbps) and the periphery (average 10 Mbps). Diskominfo data shows that only 65% of Makassar is served by fiber optic network. Limited supporting facilities such as testing labs and prototyping facilities are also an obstacle, where only two facilities are available with limited capacity. High operational costs, especially for office rent and IT infrastructure, account for an average of 40% of the total

expenditure of early-stage start-ups. Regulatory aspects are a significant external challenge for start-up development. Licensing complexity remains a major complaint, with the licensing process for digital start-ups taking an average of 3-6 months and involving 5-7 different agencies. Regulatory uncertainty, especially related to fintech and e-commerce, creates hesitation for investors and founders, with 65% of respondents citing this as a factor inhibiting business development.

Bureaucratic barriers in accessing government support programs are also significant, with 78% of start-ups reporting difficulties in meeting complex administrative requirements. The survey also revealed that 82% of start-ups experience at least two of these challenges simultaneously, creating a multiplier effect that complicates growth. Interesting findings show that start-ups that have survived more than three years have generally developed specific adaptation strategies to overcome these challenges, including the formation of consortiums to share resources, internship programs in collaboration with universities, and the utilization of mentoring programs from business incubators.

4.8 Practical Recommendations

Based on the above findings, there are several practical recommendations for policymakers, investors, and other stakeholders, namely:

a. For Local Government

For local governments, it is important to encourage policies that make it easier to establish and manage startups, including through tax reforms that are more favorable to new companies. In addition, improving digital infrastructure and accelerating fast internet provision programs in underdeveloped regions are crucial steps to support economic growth. Forming strategic partnerships with universities to create more entrepreneurship programs that are relevant to industry needs is also an important step to ensure that the resulting human resources are ready to face modern business challenges (Normalita Destyarini, 2023).

b. For Investors

For Investors, it is important to focus on seed funding for startups with local and international market potential. In addition, collaborating with microfinance institutions or crowdfunding platforms can facilitate access to funding for startups that have not been able to access large capital, thereby helping them grow and develop faster (Adella, 2023). This integration will strengthen the startup ecosystem and provide wider opportunities for innovation and economic growth.

c. For the Start-up Community

For the startup community, increasing engagement in the ecosystem by organizing more events, mentoring, and incubation programs is critical to accelerating business growth (Resnawita & Veri, 2024). In addition, building a wider network with startups in major cities can help share experiences and resources, create stronger collaboration, and support the development of sustainable innovation. This integration will enrich the local startup community with wider knowledge and opportunities, strengthening their position in facing market challenges.

5. Closing

5.1 Conclusion

This research concludes that the success of start-ups in Makassar is influenced by several key factors that interact with each other. First, the quality and availability of competent digital human resources (HR) is a key element in supporting start-up growth. The presence of young talents skilled in the field of information technology and digital opens up opportunities for faster and more effective innovation. Second, access to sufficient capital and funding is also a determining factor, as adequate funding allows start-ups to grow and overcome the initial challenges often faced by new companies. Third, supportive infrastructure and regulations, such as good

internet connectivity and pro-technology government policies, play an important role in creating an ecosystem conducive to the growth of digital start-ups. Finally, the strength of the mentor network and community is also a significant driver, as collaboration and guidance from experienced professionals can accelerate the learning and development process of start-ups. Overall, these factors show that Makassar has great potential to become a thriving digital start-up hub, provided that the supporting ecosystem continues to be strengthened and well-facilitated.

5.2 Suggestion

To strengthen the start-up ecosystem in Makassar, there are several suggestions that can be done. First, improve the quality of digital human resources with training, workshops, and collaboration with universities. Second, facilitate access to capital with investment forums, grant programs, and tax incentives. Third, strengthen digital infrastructure and ease regulations to support start-ups. Fourth, build a network of mentors and communities with meet-ups and knowledge-sharing platforms. Finally, promote Makassar's start-up ecosystem and raise awareness of the importance of innovation. With these steps, it is expected that the start-up ecosystem in Makassar will be stronger and more developed.

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