






Identifying the Key Successful Factors of Indonesia Start-Up Using Text Network Analysis

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Abstract. The Covid-19 pandemic has disrupted many industries but has also fuelled their growth. Many start-ups in Indonesia, in particular, are benefiting from the changing business environment. The purpose of this study is to explore the key factors that Indonesian start-up founders need to consider at the early stage to grow in a very dynamic business environment. The netnography method was used to explore the founders' activities in the early-stage period. There were six videos of 6 successful Indonesian start-up founders who were observed through the Start-up Indonesia YouTube channel. Interviews were conducted using unstructured questions with open hypothetical types about the founder's experience in the early-stage period or the first 2–3 years of start-up establishment. The data was then analyzed using InfraNodus to identify findings that have the potential to generate new ideas. Network Structure is focused with 0.29 modularity. The type of propagation dynamics is cyclical variability with alpha exponential: 0.56 or medium category. The results showed that there were four main topic clusters, including brand management, internet technology, software, and investing. At the same time, the most significant elements consist of product, people, company, and customer. This finding proves that sophisticated technology is not a critical factor in the success of start-ups in Indonesia, but the quality of products and people. The research implications can be a good reference for prospective start-up founders in Indonesia in facing challenging early-stage dynamics.

Keywords: Entrepreneurial mindset · Critical success factors · Early-stage start-up · Text analysis

1 Introduction

The pandemic is a historic challenge for many entrepreneurs around the world. At the same time, the pandemic presents opportunities for those who want to start their own business [1]. Many start-ups are successful in the pandemic [2], and they play an essential role

in the economy. Innovative start-ups have reacted quickly and flexibly to the pandemic, delivered innovation in medical goods and services, and were critical in helping many countries move to digital jobs, education, and healthcare. More consumers and businesses rely on technology to buy and sell products and services during the pandemic—fast and unprecedented consumer and digital business adoption. Businesses adapt while consumers build new consumption habits because they expect safety, convenience, and speed. The Covid-19 pandemic has disrupted many industries and fuelled their growth; many new start-ups have benefited from the changing business environment.

Indonesia is a country with the highest start-up growth in the world. Based on the Start-up Ranking data for 2019, the number of Unicorns in Indonesia has increased to eight. The number of start-ups in Indonesia is 2,305, surpassing the number of start-ups in Canada. However, the performance of start-ups in 2021 is in contrast with what happened in the quarter of 2022. When investors rushed to buy shares of pre-initial public offering (IPO) companies with very high valuations, deals happened at a frenzied pace, and tech start-ups started to generate revenue that has multiplied to 100 times. In the first quarter of 2022, new investors informed their portfolio companies that they would not be spared a performance slump and that conditions could worsen, warning that the start-up boom period was over and work termination were starting to happen [3].

Since 2016, the Ministry of Communication and Information Technology of Indonesia has initiated the start-up ecosystem to accelerate digital transformation in Indonesia. A podcast on YouTube called Start-up Studio Indonesia was then created to fill the missing gap between the National 1000 Start-up Digital Movement targeting founders in the ideation stage and Nexticorn (Next Indonesia Unicorn). Start-up Studio Indonesia [4] is a program for start-ups in the early and growth stages. For early-stage start-ups, it aims to increase the scale of their business, and for those in the growth phase, it plays a role in providing support. The program focuses on five things: product and team acceleration, fundraising strategy validation, growth marketing strategy validation, technology development support, and business capability sharpening.

Based on the description of the phenomenon above, the right strategy is needed for start-ups in Indonesia to face global competition and achieve sustainable growth. Strategic management is very important for early-stage start-up companies to avoid early bankruptcy and increase their chances of survival. In an effort to come up with a solution, the struggles of start-ups that are currently successful in the early-stage were explored in this study. Thus, the research aims to explore the key factors that Indonesian start-up founders need to consider at the early stage to grow in a very dynamic business environment.

2 Method

2.1 Research Characteristics

This type of research is qualitative-descriptive because it aims to explore and simultaneously describe start-up conditions at the early-stage. Based on the unit analysis, this study used individuals represented by the founder or co-founder(s). Based on time, this research was conducted cross-sectional, carried out from September 2020-December 2020. This study used a netnographic approach, where observations were carried out

Table 1. Informants Profile

No	Informants	Role	Post date	Link
1	William Tanuwijaya	Co-founder and CEO of Tokopedia	August 29, 2020	https://www.youtube.com/watch?v=tPlA2DK8i9Y&t=277s
2	John M Rasjid	Co-founder and CEO of Sociolla	September 5, 2020	https://www.youtube.com/watch?v=du-7h4bdKOQ&t=48s
3	Kevin Aluwi	Co-founder and CEO of Gojek	September 15, 2020	https://www.youtube.com/watch?v=7npqbCck908&t=1s
4	Rama Notowidigdo	Co-founder and CPO of Sayur Box	September 19, 2020	https://www.youtube.com/watch?v=5q0hYh5Rpoo&t=4s
5	Albert Zhang	Co-founder of Traveloka	September 28, 2020	https://www.youtube.com/watch?v=wCPxoFNAWXY&t=5s
6	Melisa Irene	East Ventures	October 3, 2020	https://www.youtube.com/watch?v=vKTLS3HtFvI&t=89s

through online media. YouTube was used as a data provider medium in the form of podcast activities featuring successful start-up founders. The podcast results were then processed using text network analysis.

2.2 Data Sources

Early-stage means the start-up phase that has only been operating for 3–5 years. The start-up condition in the early-stage is generally bootstrapping (funding comes from personal funds or angle investors). Six founder/co-founder(s) were the object of research. They were guest stars on the YouTube podcast Start-up Studio Indonesia. The channel started operating in 2020 and already has 6.77K subscribers (July 2022). The profiles of six founders who became sources of information are presented in Table 1.

2.3 Data Processing

Text Network Analysis is a network that describes the relationship of one word to another, equipped with the degree of linkage. In the network, there are two things, namely Node and Edge. Node is a point (circle) which is translated as a word that appears frequently and will look for its relationship. Edge is a line that connects between nodes; the thicker the line, the closer the level of connection.

In the process, the InfraNodus software from <https://infranodus.com/> was used. InfraNodus is a tool that can be used to understand better, research, and generate insights

about text or ideas by visualizing text as a network to show the most relevant topics, including relationships and structural gaps between data.

There are six stages in using InfraNodus, namely: (1) creating initial graphics using a text-to-graphic editor by importing transcripts; (2) Algorithms and modularity work to detect topic clusters and tag text statements while arranging node ranges based on their effects using intermediate centrality; (3) using Open AI GPT-3 and a network representation to find structural gaps in the text. After that, the visuals were analyzed and translated into ideas.

3 Results and Discussion

Before the data was imported into the InfraNodus software, the text had been modified; several words that had the same meaning were changed to the exact words, including: “no” to “no, all company names “gojek, sociolla, Tokopedia, Traveloka, Sayur Box, and East Venture” became “company”, “we” became “founder”, and “tech” became “technology”.

Next is the deletion of connecting words and words that have no meaning by using the stopword feature stored in the document corpus. These connecting words include “is”, “and”, “in spite of”, “but”, “also”, “besides”, “again”, as well as, “in addition”, and “to”.

After the text was imported, the nodes with the highest betweenness centrality were identified, namely nodes that often appeared between two nodes on the shortest path in the network. The data showed that four words had the highest betweenness centrality: product, people, company, and customer.

Network Structure is focused with 0.29 modularity. The type of propagation dynamics is cyclical variability with alpha exponential: 0.56 or medium category. InfraNodus shows the groups of nodes (words) detected from denser node relationships. There are four main tropical groups, which consist of:

- Group 1: Indonesia, work, investor (17%);
- Group 2: company, technology, founder (17%);
- Group 3: customer, making, pay (15%);
- Group 4: people, year, lot (15%).

The selected graphic visualization is interactive, meaning InfraNodus highlights the text sections containing the highest concentration of identified topics (using the Analytics Panel or Essence). Visual Text Search is presented in Fig. 1.

Graph visualization is also used to identify structural gaps in the graph. The structural gap can be done either qualitatively by the researcher or automatically by software algorithms (detecting different communities that are not well connected). The results show that, for example, a structural gap exists between the program and mission for Tokopedia (Fig. 2). It means that Tokopedia runs a program, not based on a mission. Tokopedia makes missions after the program runs.

This finding is interesting because it turns out that the founders of successful start-ups in Indonesia put products and people in the first position as the key to establishing a start-up, where companies and customers follow. In other words, the founders stated that

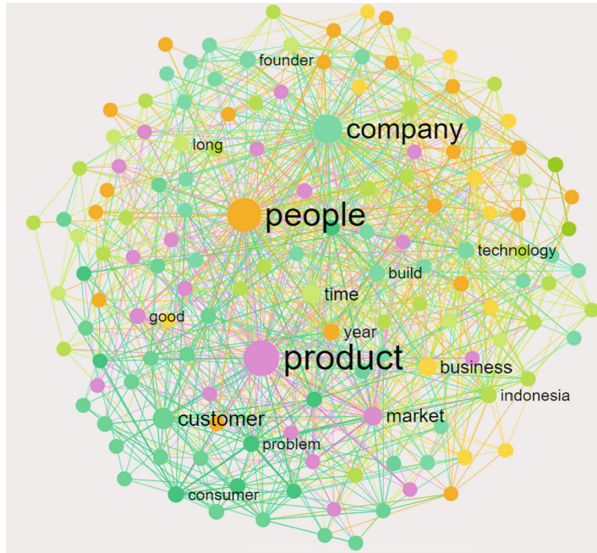


Fig. 1. Visual Text Search



Fig. 2. Example of structural gap

in establishing a start-up, they did not only focus on creating products as a solution but believed that the products made were consumer needs and solutions to human problems. The visualization of the text search was then validated from the quotation, which is presented in Table 2.

Measuring the success or performance of start-up companies is not easy [5]. In general, start-up performance is assessed for return on invested capital and growth, but it turns out that many other methods and models are used in evaluating start-up performance [6]. Ref. [7] measure the long-term survival rate, while [8] refers to the stock market value. However, these two things are steps for start-ups in their next stage. Early-stage start-ups are different: unlike public companies, they are not required to publish company data. Revenue (often non-existent) or growth rate is widely regarded as not fully representative of the value of early-stage start-ups [5].

Table 2. Validate text search results with quotation

No	Informants	Role	Important points of early-stage start-up	Tropical Group
1	William Tanuwijaya	Co-founder and CEO of Tokopedia	Get grade A talent, corporate values, continuous learning, purpose-driven generation, service culture, growth mindset, and innovation culture.	People, Company
2	John M Rasjid	Co-founder and CEO of Sociolla	Learn to understand how other players in the same industry, including stakeholders and other players in different industries, mature the idea, be fast, agile, continuous improvement, ownership, and positive.	People, Company
3	Kevin Aluwi	Co-founder and CEO of Gojek	User experience, retention rate, leadership founder, founding team, culture value, ecosystem, problem-solution fit.	Customer, Company, Product
4	Rama Notowidigdo	Co-founder and CPO of Sayur Box	Product-market fit, engineering mindset, incremental iteration, pivoting, lean methodology, problem-solution fit, minimum viable product.	Product, Customer

(continued)

Table 2. (continued)

No	Informants	Role	Important points of early-stage start-up	Tropical Group
5	Albert Zhang	Co-founder of Traveloka	Problem-solution fit, minimum viable product, founder characteristic, culture.	Product, People
6	Melisa Irene	East Ventures	Humble beginning, product market-fit, entrepreneurial mindset, type of business field, problem-solution fit, market background, attraction.	Product, People, Customer

The human resource of the initial team is an essential driver of early performance [9]. The ability of founders, access to finance, and legislative framework affect start-up performance, where the death of founders is the most impacting aspect on the quality of performance, both large and small start-ups. Founder death is the founder's absence from the business one year before closing [10]. However, [11] states that start-up performance in Indonesia is not only measured by the founder's mindset, but includes the technical platform, mentorship support, facilities, and pro-innovation policies and regulations. Ref. [12] reduce the failure of start-up performance into five indicators: lack of capital for further development, customers do not need products/services in the market, no investors, financial problems, and a bad team.

4 Conclusion

This research yielded significant findings, according to successful founders of start-ups in Indonesia. Products and people, as well as customers and companies, are above technology and funding as key success factors for early-stage technology start-ups. Technology is an essential aspect of company continuity and a tool for translating the mindset of the founder (people) and part of the convenience it provides to customers. Based on the results of the analysis using text network analysis, it can be seen that there is still a high gap between theory and field conditions. There has not been much research on start-up performance related to strategy, especially those related to the early-stage fit program, the gradual iteration strategy, and the minimum viable product (MVP) strategy. Further research can discuss the business performance resulting from the lean start-up program and early-stage fit, which is the implication of a gradual iteration strategy and a reasonable minimum price strategy that can synergize the quality of start-up ecosystem involvement.

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