

Factors Affecting Start-up Performance

A Literature Review

Sunu P H Triono^{1,*}, Agus Rahayu², Lili A Wibowo³, Andry Alamsyah⁴

¹ School of Postgraduate Studies, Universitas Pendidikan Indonesia Jalan, Dr. Setiabudhi No 229 Bandung 40154 Indonesia

² Universitas Pendidikan Indonesia Jalan, Dr. Setiabudhi No 229 Bandung 40154 Indonesia

³ Universitas Pendidikan Indonesia Jalan, Dr. Setiabudhi No 229 Bandung 40154 Indonesia

⁴ School of Economics and Business, Telkom University, Bandung, Indonesia

*Corresponding author. Email: sunu.puguh@upi.edu

ABSTRACT

This research was conducted to identify factors contributing to start-up performance. In a knowledge-based economy, start-ups in technology can significantly contribute to the development of the economy and society. However, study about the performance of technology startup fragmented into several domains such as Information Technology, Information System, Business and Management, and another domain. Moreover, the performance of established firms and start-ups is quite different. Therefore, a study about their performance is needed. The semi-systematic literature review method was used to collect and select articles that study startup performance from leading publishers. 4,063 articles were screened and selected so that there were 42 articles analyzed in this study. With descriptive analysis, found as many as 58 factors that affect performance. The most studied factors are at the organizational level, especially strategy and capability. This research provides scientific contributions, especially in strategic entrepreneurship, and provides managerial implications for startup managers in identifying factors that affect startup performance.

Keywords: Start-Up, Born Global, Performance, Factors, Systematic Literature Review.

1. INTRODUCTION

The rise of the startup industry globally cannot be separated from the various contexts that occur or are behind it. The economic context develops from commodity, product, service to value-based [1]. Then the development of information technology, especially digital technology, to the blurring of the physical and digital layers in human life today, or what was then called the Industrial Revolution 4.0. This economic trend can also be seen in the list of companies with the most significant value worldwide in 2020, dominated by technology-based companies [2]. These various things accompany the rise of the startup industry around the world. Globally from 2016 to 2018, the startup industry had an economic value of USD 2.8 trillion with a growth of 20.6% [3]. The valuation of startups with unicorn titles (startups worth more than one billion USD) as of January 2021 is cumulatively at 1.645 trillion USD [4].

The startup is an implementation of entrepreneurship. Entrepreneurs and their startups have an essential role in the economy, namely in job creation, wealth creation, and

fostering innovation for the industry [5], thanks to their speed of response, growth orientation, and high flexibility [6]. In a knowledge-based economy, technology-based startups can significantly contribute to the development of the economy and society [7]. Compared to legacy companies, startups have an advantage in speed of operation and bringing their business model to market [8].

Firm performance is a fundamental topic in strategic management [9]. Firm performance is seen as a reference or measure used in evaluating firm strategy [10-12]. Firm performance is the end result of activities, including the tangible results of the strategic management process [11]. In general, there are two dimensions involved in firm performance, namely financial and non-financial [10-12]. According to the context, different emphasis can be placed according to the context in which it occurs. Financial performance can be used in large or established companies, but for new ventures or startups, given the limited resources, the financial aspect is not a priority aspect in terms of firm performance [13,14] but more to growth [15]. Research on startup performance has

increased from 1994 until recent years but is still inconsistent and fragmented into several domains, both scientifically and empirically [16]. A study by [16] has succeeded in formulating a model for startup performance using data from three sources, namely EBSCO Business Source, Emerald, and Science Direct. To get a more comprehensive picture of startup performance, it is necessary to complement the sources from other databases.

This research was conducted using more databases from several leading scientific publishers to complement the above gap. The primary purpose of this research is to answer the question: what factors affect startup performance? Using a systematic literature review, it is hoped to help academics and practitioners understand the factors that affect startup performance.

2. METHODS

This study uses a descriptive approach to a semi-systematic/narrative literature review [17]. This is done to get a more comprehensive picture of a broad topic [18] because research on startup performance is distributed in several different scientific domains. There are several steps taken in this research. The first step is to define conceptual boundaries. The limitation in question is to determine the definition of a startup, namely a temporary organization that can transform once it fulfills its role [19] and as an innovation agent, with the characteristics of science and technology, which allows developed countries to get a "new breath" [20]. At the same time, the second conceptual limitation is to determine the performance as the end result or outcome of the startup, both in the form of financial and non-financial.

The next step is to determine which studies are included in this review. First, based on the database, we use five leading publishers across fields and cover business and management domains, such as Science Direct, Emerald, InderScience, SAGE, and Taylor & Francis. Second, we define the formula string for the search: (TITLE-ABS-KEY (("Factor" OR "determinant" OR "antecedent") AND ("Startup" OR "born-global" OR "innovation-driven enterprise" OR "technology-based firm" OR "high-tech startup") AND ("performance")) AND DOCTYPE (ar) AND (LIMIT-TO (LANGUAGE, "English"))).

Next, the study examined duplication, journal quality, and journal scope. In determining the quality of journals, we use data from the Scimago Journal Ranking and those included in Q1. Meanwhile, the journal's scope was checked from the homepage of each journal. Our final step is to review the content of the selected articles to determine their relevance, namely according to the conceptual boundaries and research objectives. The result of each literature search step can be seen in Figure 1.

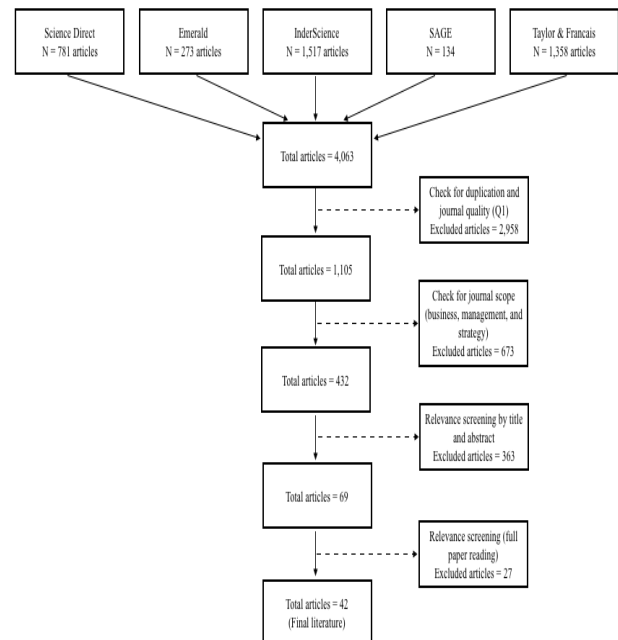


Figure 1. Literature Search Steps

3. RESULTS AND DISCUSSION

A total of 42 articles were selected through screening based on duplication, journal quality, journal scope, and relevance. The articles published in five journals are shown in Table 1 below.

Table 1. Article's Journal

Journal	Author	Total
Journal of Engineering and Technology Management	[21,22]	2
Journal of Small Business Management	[23-36]	14
Long Range Planning	[37-40]	4
Research Policy	[41-61]	21
Strategic Organization	[62]	1
Total		42

The articles published from 2001 to 2021 were obtained. For convenience, they were divided into four five-year periods, except for the fourth period that included the year 2021. As shown in Table 2, there is an increasing trend in articles from the first to the fourth period.

Table 2. Publication Years

Publication Year	Number of Article
2001-2005	4
2006-2010	4
2011-2015	7
2016-2021	27

Performance as a dependent variable or output includes various kinds, ranging from overall performance, survival, growth to specifics such as innovation performance, number of patents, the effectiveness of exploration and exploitation of opportunities, etc. Totally, there are 21 types of performance which are presented in Table 3 below.

Table 3. Type of Performance

Type of Performance	2001-2005	2006-2010	2011-2015	2016-2021	Total
Firm Performance	-	3	2	4	9
Innovation	-	1	1	5	7
Growth	2	-	-	3	5
Funding	-	-	1	4	5
Survival	1	-	1	2	4
International performance	-	-	1	1	2
IPO	-	-	1	-	1
Acquisition	-	-	-	1	1
Advantage	-	-	1	-	1
Foreign market	-	-	-	1	1
Persistence	-	-	-	1	1
Income expectation	-	-	-	1	1
Patent activity	-	-	-	1	1
Economic value added	-	-	-	1	1
Size	-	-	-	1	1
Technological distinctiveness	-	-	-	1	1
M&A	-	-	-	1	1
Partnership	-	-	1	-	1
Market value-added	1	-	-	-	1
Product performance	-	-	-	1	1
Opportunities exploration & exploitation	-	-	-	1	1
Total	4	4	9	30	47

Table 3 shows that firm performance dominates all types of performance studied, followed by innovation, growth, funding, survival, and others. An increasing trend is seen in all types of performance except advantage, partnership, and market value-added. 114 factors affect performance identified and can be grouped into 58 factors as shown in Table IV. We do the grouping based on the similarity or resemblance of the concept of these factors.

Table 4. Factors that Affect Performance

Variable's Level	Variable	Total
Macro/industry-level	Innovation Risk; Government Support (5); Location (2); Industry Group (2); Market Uncertainty; Technological Uncertainty; Funding Sources (2); Types of Technological Regime; Media Coverage; Stock Market Activity (2); Market Size	19
Organizational/business-level	Technology Capability (2); Market Orientation (3); Entrepreneurial Orientation (2); Absorptive Capacity (2); Startup Growth Orientation (2); Patent (2); R&D Intensity (3); Type Of Firm (2); Early Mover (2); Informational Support (2); Organizational Social Capital (7); Operational Support (5); Financial Support; International Relational Capital; Crowdfunding	66

	Activity (7); Alliance Strategy (2); Resources Access (3); Lean Startup Capability; Type of Innovation; Type of Business; Partnership Strategy (4); Funding Type; Organizational Identity (2); Funding Sources; Talent; Funding Size; IPO Activity; Innovation Strategy; Dynamic Capability; Technical Development Capability	
Micro/individual/team-level	General Experience (4); Industry Experience (5); Startup Experience (3); Female-Led Startup (2); Founder Role; Educational Background; CEO Duality; Personality (2); Individual Social Capital (2); CEO Replacement; Human Capital; Exploratory Behavior; Entrepreneurial Behavior; Entrepreneurial Style; Team Orientation to Means; Opportunity Recognition Belief; Tolerance of Uncertainty	29
Total		114

From Table IV, it can be seen that the most studied factors to predict performance are at the business or organizational level, followed by the micro level, and then the macro level. This is relevant to the theory of strategic entrepreneurship, which emphasizes the business (strategic) and individual (entrepreneurship) aspects [63,64]. At the organizational level, the most studied factors are strategy (alliance, partnership, innovation), capability (technology, absorptive, lean startup, dynamic, technical development), organizational social capital, crowdfunding activity, and various forms of support or access. At the micro or individual level, the most studied factor is the experience (industry, general, startup). At the macro and industrial levels, the widely studied factors are government support, environmental uncertainty (market and technology), and the industrial environment (clustering, group, technological regime). This finding complements the study of [16] with some other variables or factors that influence the technology startup's performance. In their study, [16] categorize the variables into five levels. Another finding is that the outcomes or dependent variables are different from the study of [16], such as IPO, funding, acquisition, etc. It might be caused by the search string that we used. In the study of [16], they use INV (International New Venture), so it talks mainly about internationalization. In this study, technology-based startups were chosen, so the result differed.

4. CONCLUSIONS

A startup is a new form of business or organization created with a specific purpose that faces high

uncertainty with the support of very limited resources with high growth characteristics and is temporary. Many factors affect startup performance from the macro, organizational, to individual levels. From 42 articles, it was found that the most studied factors were at the organizational level, especially strategy and capability. The most studied factors are related to experience and behavior at the individual level. At the macro level, the most studied factors are government support and environmental uncertainty, both technology and market. Future research can be done to complement some of the limitations of this study. The first is the database that is used in this study. Future research can use more databases, such as Scopus and Web of Science. Second, this research does not analyze the theoretical references from the selected articles. Future research can further analyze the theoretical references to provide a complete conceptual construction. Third, the study on startups is a study that has not been well-established. It is still fragmented in several scientific fields. In addition, there are some good articles but not in the Q1 journal. Therefore, future research can consider a more comprehensive coverage both in terms of the field of study and the journal's quality.

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