

Systematic Literature Review: A Comparative Study of Tech-Startup Success Factors Between Developing and Advance Economies

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Abstract

Tech startups' popularity has attracted investors, entrepreneurs, policymakers, and scholars for decades. Furthermore, a tech startup is a concept of entrepreneurship that utilizes the role of new and innovative technology to drive the firm's scalability in terms of investment and profit creation. In the Western world, a tech startup is not new, and the emergence of the world's renowned tech startup ecosystem, such as Silicon Valley, has inspired other parts of the world to do so in developing entrepreneurship. In this paper, a systematic literature review was conducted to investigate the success factors of tech startups in both developing and developed economies. The search string found 3,062 academic papers, and 57 studies were selected and analyzed due to the systematic review. The result shows 13 success factors identified in developing economies and 15 success factors in developed economies. The initial result of the systematic review of the startup success factors reveals a significant difference between success factors in developing and developed countries. In developing economies, external and organizational factors are the most relevant to the startup's success. On the other hand, in advanced economies, the most relevant factors are driven by individual factors.

Keywords

Success Factors, Digital Startup, Advanced Economies, Developing Economies, Comparative Study

1. Introduction

Tech-startup (startup technology) or currently renowned as just a startup ecosystem, has gained popularity among entrepreneurs, investors, policymakers, and scholars for decades (Auerswald, 2015; Isenberg, 2011; Mack & Mayer, 2016; Motoyama & Knowlton, 2014; Spigel, 2016). There is an increasing trend towards developing new innovative businesses worldwide, in which many technology-based ventures are established each year (Hormiga et al., 2010). Although tech startups were first emerged in advanced economies such as the U.S. during "tech bubble" in the late 1990s, the trends in emerging markets have seen to rise since 2010s (Subrahmanya, 2022). Nowadays, developing economies such as India and Indonesia have joined the ranks among the top five countries with the most startup globally. India was in second place with 13,325 companies, and Indonesia was in fifth place with 2,347 companies (Artem Minaev, 2023). The growing number of startup companies in developing countries shows the significant opportunity for growth due to large markets, rapid adoption of internet technology, and the thriving entrepreneurial ecosystem for technology-based ventures in emerging markets (Google, Temasek, and Bain, 2022; Subrahmanya, 2022).

Unfortunately, the increasing number of tech-startup companies in developing countries is not followed by a high success rate. The investigation shows that emerging economies present a higher failure risk than developed economies. For example, as the second country with the most startup in the world, India struggles with a success rate lower than 5% (David et al., 2020). Furthermore, Indonesia faced serious problems with its startup's high failure rate, which accounts for 99% or only 1% success rate (Baskoro et al., 2022). On the other hand, in advanced economies such as the USA, the UK, France, Canada, and Singapore, the average success rate is 24% or above the average global success rate of 10% (Ruby, 2023; Howarth, 2023).

Moreover, the research on startup success rate cannot be separated with the startup success factor. Bensley (2022) outlined that currently there are five factors for the startup success: timing, team, business model, funding, and ideas. Other scholars outlined that factors of idea and team have been reported as closely associated with the success of a startup (Berkus, 2016; Gross, 2015). While Díaz-Santamaría & Bulchand-Gidumal (2021) associated the startup success with the management skills. However, the success factors for startup can differ from country to country which closely relate to different business environment, demographic, purchasing power, and income. Moreover, the success factor might have the relation with the governance system of a country. Government policies substantially impact innovation to drive the economy, good trade practices, knowledge sharing, and the business environment in general (Okrah et al., 2018). Furthermore, government policies are powerful to drive entrepreneurial activity by creating an ideal environment for all the startup ecosystem stakeholder through intellectual property right, antitrust law, funding accessibility, tax incentive and credit (Cheah et al., 2016; Colwell & Narayanan, 2010; Dolfsma & Seo., 2013; Minniti, 2008; Patanakul & Pinto., 2014). Thus, A huge gap of success rate for startup shows that there might be different approach in developing entrepreneurship between advanced and developing economies. The research conducted by Cao & Shi (2020) shows a challenge in applying the entrepreneurial model in advanced economies to emerging economies directly.

Therefore, a better understanding of the factors contributing to startup success must be researched to bridge the gap in startup development between developed and developing economies. Furthermore, identifying success factors in different countries based on the country's economic status becomes crucial for the world's startup stakeholders. This paper aims to investigate and compare the startup success factors between developing and developed economies to seek insight and lesson learned to develop a vibrant entrepreneurial ecosystem in developing countries. The systematic literature review is used to answer research questions as it promotes helpful information updates through reviewing articles in the electronic database. Moreover, the systematic literature review can be sorted according to the location of the study cases found or developed.

1.1 Startup Success Factors: Developing VS Developed Countries

Government plays a pivotal role in governing the entrepreneurial ecosystem for the startup ecosystem to grow (Chandra & Fealey, 2009). There are three approaches: bottom-up, top-down, and hybrid (Sun et al., 2018). The bottom-up approach, which is primarily used in the US, works by deploying the competition-based rule-setting to facilitate the linkage and networking among founders, investors, universities, large firms, accelerators, and consultants (Sun et al., 2019; Pauwels et al., 2016; Belz et al., 2019). While the top-down approach works the other way around in which the country holds the vast power to command the startup ecosystems by feeding them with subsidies to promote technology commercialization, this approach is usually found in Japan and Sweden (Sun et al., 2019). Moreover, the hybrid approach combines the strength of the other two approaches, mainly found in developing countries such as Taiwan, China, and Singapore.

The governing system of the startup or entrepreneurial ecosystem in developing and developed countries creates a different environment that influences startup success in those countries. In past decades, extensive literature has been developed on the factors influencing the startup's success (Yoon-Jun, 2010). However, the research is still lack of unanimity in determining the generic factors for startup success and the insufficient knowledge about startup worldwide (Sulayman et al., 2014). Consequently, it is vital to identify the success factors in order to mitigate the failure risks and subsequently increase the success rate. Moreover, there were several studies about the identification, analysis, and discussion on the main factors that influence the startup success (Almakenzi et al., 2015; Anh et al., 2012; Balboni et al., 2014; Banda & Lussier, 2015). Yet, those studies did not pay the attention into investigating the difference of success factors for startup between developing and advanced economies. Furthermore, most of studies focus on a single case study such as Singapore (Wang & Ang, 2004), Nigeria (Abimbola & Agboola, 2011), India (Satar & John, 2016), or the US (Lee & Lee, 2015). Therefore, in this paper, the success factors of startups are

compared between two different economic statuses to find insight into how to develop vibrant startups ecosystem to increase the success rate

Location choices are relevant to entrepreneurship as it promotes different market conditions and cultural values (Yu & Artz, 2019; Hemmert et al., 2019). Furthermore, the economic differences promote different business accelerators that influence the performance of the firms/ventures (Chan et al., 2020). Therefore, the different economies may result in different business strategies. For example, in developed countries like Singapore, the government has launched several incentives to encourage entrepreneurs and investors to create companies in the Country (Cheah et al., 2016). While, in Indonesia, as a developing country, the success factors are mainly about the vast advantage of the market (access to the market). The different economies may result in different success factors. Thus, business stakeholders need to acquire information about the specific success factors that will influence the firm’s success in the future.

2. Research Methodology

A systematic literature review (SLR) is being employed in this study to address the research questions. In this study, a systematic literature review (SLR) is performed by following guidelines from Kitchenham (2020). The design review for this study follows three steps comprise Planning, Conducting, and Reporting. Through this method, the literature study can be better constructed due to its well-ordered procedure. Aside from that, SLR promotes the identification of existing research findings with inconsistent and repetitive themes (Usman, 2011). SLR is categorized as a secondary study where the data is collected through the existing literature the researcher gathered. This data involves computer-aided research through online libraries or databases. Furthermore, SLR comprises steps in retrieving and reporting literature clearly and reproducibly (Ardito et al., 2015).

2.1 Research Questions

Based on the introduction above, the author formulates research questions to better investigate success factors for startup in developing and developed countries. The following research questions are as follows:

- (1) What are the factors that influence success of digital startup in the developing economies?
- (2) What are the factors that influence success of digital startup in the advanced economies?

2.2 Research Objectives

Based on the research questions above, the research objectives for this study are as follows:

- (1) To explore the factors that influence success of digital startup in the developing economies
- (2) To explore the factors that influence success of digital startup in the advanced economies

2.3 Planning the Review

Before conducting the review, the author develops the strategy to obtain the data through electronic databases effectively. The detail of the review planning is as follows:

- (1) Search String for Selecting Articles in Electronic Data Base

In order to answer research questions above, this study used five electronic databases to search the articles which are: 1. Science Direct 2. IEEE 3. ProQuest 4. Emerald Insight 5. Google Scholar. The articles search in this study is within 11 years span which from 2012 to 2023. Moreover, to search the articles, the author used the following search string in the titles, abstract, keywords as shown in the Table 1 below:

Table 1. Systematic Literature Review Search String

Data Base	Type	Search String
Science Direct	Journal and Conference	(success factor OR success OR factor OR success category) AND (technology startup OR tech startup OR technology-based startup)

Data Base	Type	Search String
IEEE	Journal and Conference	(success factor OR success OR success category) AND (technology startup OR tech startup OR technology-based startup)
ProQuest	Journal and Conference	noft(success factor) OR noft(success) OR noft(success category) OR noft(high tech start up) OR noft(startup technology) OR noft(Startup)
Emerald Insight	Digital	((success factor OR success OR success category) AND ((technology startup OR tech startup OR technology-based startup)))
Google Scholars	Digital	(success factor OR success OR success category) AND (technology startup OR tech startup OR technology-based startup)

(2) Study Selection Criteria: Toll Gate Approach

The purpose of study selection criteria using toll gate approach is to filter the articles from the electronic databases. The toll gate approach determines the inclusion and exclusion criteria, this is to ensure that the author only uses the relevant articles which is aligned with the goal of this review. The inclusion and exclusion criteria for this review is shown in Table 2 and Table 3 below:

Table 2: Toll Gate: The Exclusion Criteria for Selected Articles

Toll Gate Stage	Dimension	Style Tag
		Partial text articles will be excluded
		Articles which are not related to digital/tech startup context will be excluded

Table 3: Toll Gate: The Inclusion Criteria for Selected Articles

Toll Gate Stage	Dimension	Style Tag
1	Over all criteria for the articles	Publication date range within 2012 – 2023 (last 11 years) Non duplicates articles Articles in the form of journals and conference proceedings Articles can be both from industrial and academic environment The articles can be written in both Bahasa Indonesia and English
2	Title and abstract	The articles must be aligned with the search strings
3	Exclusion Criteria	The exclusion criteria are elaborated in the Table 2

3. Conducting the Review

After developing and validating the search protocol, the next step is to conduct the review by applying all of the developed protocol to all databases that has been determined before. The result of the search for toll gate 1 is 3,062 articles, furthermore the searched articles are sorted using toll gate 2, and the final result for the articles after applying exclusion criteria is 58. The detail of the following searched articles is shown in the Table 4.

Table 4 The Result of Articles After Sorted Using Toll Gate Approach

Data Base	Toll Gate 1	Toll Gate 2	Exclusion Criteria
Science Direct	75	4	57
IEEE	93	22	
ProQuest	953	34	
Emerald Insight	918	2	
Google Scholar	1023	150	

After the selection of articles is conducted, the authors analyzed the publication's trends throughout databases and year of publishing. In this study, the articles are only from five databases from 2012 to 2023 (last 11 years) as shown in Table 4 above. The finding shows that there is an increasing trend of academic paper for the topic of startup and startup success from various countries in the world. Furthermore, most articles were published in 2022, which accounted for 10 out of 57 articles found through search string. Besides, most academic papers are found in the Google Scholar due to its large range of sources which accounts for 70% of the articles.

After the exclusion criteria is applied, the authors then classify all the articles based on the location or object of studies. There are 32 studies found in the developing countries which are dominated by Asian countries. While, in the developed country, there are 25 academic papers found in all databases. Based on country where the selected studies reside, Indonesia is a developing country that has most case studies with 9 academic papers in total. While among the developed countries, Germany has most case studies with 7 academic papers. The increasing trends of academic papers has shown in the developing countries compared to the developed countries in the last decades. The developed countries that is more advanced in the tech-based entrepreneurship has seen that this topic is less interesting. On the other hand, the topic of startup technology in developing countries is quite new phenomenon and currently booming, which caused the increasing academic papers that writes about the technology startup within developing economies.

3. Analysis and Discussion

In this systematic review, the authors used content analysis through calculation of frequency of major theme appeared in all academic papers (Fraenkel et al., 2012). Furthermore, the textual narrative analysis is used to standardize data extraction format which is from various study characteristic (Popay et al., 2006). This method of textual analysis is suitable to achieve the objective of this systematic review which the to compare similarities and difference from the synthesis across the academic papers (Lucas et al., 2007).

The study reveals that there is significant difference of success factor for startup between advanced and developing economies. In the developing economies, the success factors revolve around the external and organizational factor. Conversely, in advanced economies, the most influential/relevant success factors are defined by individual factor category which relates to quality of characteristic that influence the success of the company.

3.1 Analysis

- (1) What are the factors that influence the success of digital startup in the developing countries?

Based on the textual narrative analysis conducted in this systematic review, it was found that there are thirteen success factors for digital startup in the developing countries. The authors determine top five success factors that will be compared to the counterpart in the developed countries. The details of the success factors in the developing countries are shown in the Table 5 below:

Table 5 Startup Success Factors in Developing Economies

Success Factors	Definition	%
Government support	Access to seed funding from the government and the support in the form of development program for digital startup	11.11%
Managerial experience in of the founders	Managerial experience of the founding team allows the company to have effective and efficient management	10.19%
Funding Accessibility	The continuous funding access from the financing agents	10.19%
Organizational size	It is considered that the bigger the size of the entrepreneurial team, the greater the talent.	10.19%
Innovative Products/Services	Innovative products and services that fit with the market needs will help the company to create revenue as early as possible	9.26%
Capabilities and skills in business and technology of the founders	Skills in business and technology of the founders to develop the company's competitive advantage	8.33%

Success Factors	Definition	%
Industry's experience of the founders	The founder experience in the industry allows the companies to the broad resources and network to promote growth	7.41%
External Environment	External environment is conditions where the business cannot control, usually using PESTEL frameworks	7.41%
Previous startup's experience of the founders	The entrepreneurial experience of the founders ensure the smoothness of company's launching and avert the error in its management	7.41%
Leadership of the entrepreneur	The ability of the founders to lead the company in order to create the supportive environment, to have the synergy with all the internal stakeholders which will effectively drive the growth.	6.48%
Business Model	Business model development to achieve sustainable firms	6.48%
Academic formation of the founding team	Academic foundation related to the education background of the founders that has impact to the company's growth	6.48%
Incubator	Business incubator to help the startup in developing R&D into commercialization	0.93%

According to the findings of systematic review above, the author determined five factors that are most relevant success factor for startup in developing economies which are Government support (11.11%), Managerial experience of the founders (10.19%), Funding accessibility (10.19%), %, Organizational size (10.19%), and Innovative Products/Services (9.26%).

(2) What are the factors that influence the success of digital startup in the developed countries?

Based on the textual narrative analysis conducted in this systematic review, it was found that there are fifteen success factors for digital startup in the developing countries. The authors determine top five success factors that will be compared to the counterpart in the developing countries. The details of the success factors in the developing countries are shown in the Table 6 below:

Table 6 Startup Success Factors in Developing Economies

Success Factors	Definition	%
Previous startup's experience of the founders	The entrepreneurial experience of the founders ensure the smoothness of company's launching and avert the error in its management	11.54%
Industry's experience of the founders	The founder experience in the industry allows the companies to the broad resources and network to promote growth	10.26%
Funding Accessibility	The continuous funding access from the financing agents	10.26%
Managerial experience in of the founders	Managerial experience of the founding team allows the company to have effective and efficient management	10.26%
Capabilities and skills in business and technology of the founders	Skills in business and technology of the founders to develop the company's competitive advantage	9.09%
Organizational size	It is considered that the bigger the size of the entrepreneurial team, the greater the talent.	10.19%
Business Model	Business model development to achieve sustainable firms	7.79%
Business Incubator	Business incubator to help the startup in developing R&D into commercialization	5.19%
Innovative Products/Services	Innovative products and services that fit with the market needs will help the company to create revenue as early as possible	5.19%
External environment	External environment is conditions where the business cannot control, usually using PESTEL frameworks	5.19%

Success Factors	Definition	%
Academic formation of the founding team	Academic foundation related to the education background of the founders that has impact to the company's growth	3.90%
Leadership of the entrepreneur	The ability of the founders to lead the company in order to create the supportive environment, to have the synergy with all the internal stakeholders which will effectively drive the growth.	3.90%
Government support	Access to seed funding from the government and the support in the form of development program for digital startup	3.90%
Clustering	The digital startup with the same industry sector deal to cooperate to achieve growth.	2.60%
Organizational age	The company's years of operation from its creation	1.30%
Business Incubator	Business incubator to help the startup in developing R&D into commercialization	5.19%

According to the findings of systematic review above, the author determined five factors that are most relevant success factor for startup in developed economies which are Previous startup's experience of the founders (11.54%), Industry's experience of the founders (10.26%), Funding Accessibility (10.26%), Experience in management of the founders (10.26%), and Capabilities and skills in business and technology of the founders (9.09%).

3.2 Discussion

This systematic literature review on the comparative study of startup success factors between developing and developed economies concentrated on fifty-seven articles from five databases (Science Direct, IEEE, ProQuest, Emerald Insight and Google Scholar). After reviewing all the articles, the initial finding shows thirteen success factors in academic papers in developing countries and sixteen in academic papers in developed economies. The authors then determine five factors that influence the startup success for both developing and developed countries and classify those factors into three categories which are individual, organizational, and external factors (Santiseban & Mauricio., 2017)

The initial result reveals a significant difference in startup success factors between developing and developed economies. In developing economies, four success factors are categorized as external factors (government support and funding accessibility) and organizational factors (organizational size and innovative products/services). Only one success factor is categorized as an individual factor: experience in the entrepreneur's management. On the other hand, the finding in developed economies is the other way around, startup success factors are dominated by individual factors (previous startup experience of the founders, industry's experience of the founders, experience in management of the founders, and technological or capabilities and skills in business and technology of the founders). At the same time, there is only one success factor from the individual factor category, which is funding accessibility.

In the developing economies, Government support appears as the most influential factors for the startup success, where it shows that government play a great role in creating the supportive business environment for tech-startup companies. Furthermore, it also shows the lack of infrastructure to support the development of vibrant startup ecosystem. This finding is supported by Cao & Shi (2020), the research outlined that the emerging economies present the entrepreneurial constraint to innovation, there three factors which are voids of institution, scarcity of resources (finance, human, knowledge, and physical infrastructure) and structural gaps (the absence of actors and networks). Conversely, the most relevant success factors for startup in developed country is Previous experience startup of the founding team which categorizes as individual factors. This finding shows that startup success in most of developed countries is heavily relied on the individual qualities and characteristic of the founding team. This finding is supported by Sevilla-Bernardo et al (2022) where the paper pointed out that the most relevant factors in North America and Europe are CEO and Idea.

It is can be concluded that startup success is much less related to the individual quality and characteristics of entrepreneurs in which the experience of founding team is vital in creating the success for the company (Keogh & Johnson, 2021). Furthermore, the experience of the founding team includes ability to transform the idea and its familiarity in solving the problems or challenges for day-to-day activities, management, to product-market-fit which

influence overall company's success (Mahyuni & Rinaldi, 2022; Binowo & Hidayanto, 2023). Yet, these factors are somehow the most difficult to be implemented (Fitria & Hakim, 2022).

4. Conclusion

This systematic literature review compares the success factors of tech startup between developing and developed countries. The aim of this comparative literature study is to seek insights through the difference of factors that influence tech startup success between developing and developed countries, in the extent of which most relevant factors to the startup success in both developing and developed economies. There are 57 selected academic papers that have analyzed using textual narrative analysis to look for the success factors for the tech startup. In developing countries, there are thirteen factors that have been identified. While, in developed countries there are fifteen factors that have identified.

From the finding above, the authors can conclude that there was a significant difference between developing and developed economies for the startup success factors. The finding in developing economies shows that the success factors are mostly dependance on the external and organizational factors. On the other hand, in developed economies, the success factors are heavily relied on the individual factors which refers to the quality of the founding team.

Overall, the result of this systematic literature review study is to contribute in enriching knowledge onto the existent literature, especially about the success factors for startup in developing and developed economies. Furthermore, the comparative study on the success factors for startup should inform the entrepreneurs, investors, researchers, policymakers, and scholars to be the lesson learned in developing vibrant startup ecosystem to achieve higher success rate.

References

- Abimbola, Oluremi & Agboola, Mayowa., 2011, Environmental Factors and Entrepreneurship Development in Nigeria. *Journal of Sustainable Development in Africa*, 13. 166-176.
- Almakenzi, S., Bramantoro, A. and Rashideh, W., 2015, A survivability model for Saudi ICT startups. *International Journal of Computer Science and Information Technology*, Vol. 7, No. 2, pp.145-157.
- Anh, D., Hoa, Q. & Quoc, T., 2012, Critical success factors for Vietnamese software companies: A framework for investigation. *Journal of Sociological Research*, 3(2), 160-169.
- Anotakis, P., 2012, Founders' human capital and the performance of UK new technology-based firms. *Small Business Economics*, 39, 495-515.
- Ardito, L., Messeni Petruzelli, A. & Albino V., 2015, From technological inventions to new products: A systematic review and research agenda of the main enabling factors. *European Management Review*, 12(3), 113-147.
- Arruda, C., Silva, V. and Costa, V., 2013, The Brazilian entrepreneurial ecosystem of startups: an analysis of entrepreneurship determinants in Brazil as seen from the OECD pillars. *Journal of Entrepreneurship and Innovation Management*, Vol. 2, No. 3, pp.17-57
- Asmoro, A. & Nugroho, L.E. & Sulisty, Selo., 2018. Prediction modeling of software startup success by PLS-SEM approach. *International Journal of Engineering and Technology (UAE)*, 7. 141-147. 10.14419/ijet.v7i4.40.24421.
- Auerswald, P. E., 2015, *Enabling entrepreneurial ecosystems*. In D. Audretsch, A. Link, & M. L. Walsok (Eds.), *The Oxford handbook of local competitiveness*: 54-83. Oxford: Oxford University Press.
- Azimzadeh, Morteza & Pitts, Brenda & Ehsani, Mohammad & Kordnaej, Asadollah., 2013, The Vital Factors for Small and Medium Sized Sport Enterprises Start-ups. *Asian Social Science*, 9. 10.5539/ass.v9n5p243.
- Bala Subrahmanya, M.H., 2017, How did Bangalore emerge as a global hub of tech starts in India? entrepreneurial ecosystem - evolution, structure and role. *Journal of Developmental Entrepreneurship*, March, 22(1),22.
- Balboni, B., Bortoluzzi, G., Tivan, M., Tracogna, A., & Venier, F., 2014, The growth drivers of start-up firms and business modelling: A first step toward a desirable convergence. *Management*, 9(2), 131-154.
- Banda, J. & Lussier, R., 2015, Success factors for small businesses in Guanajuato, Mexico. *International Journal of Business and Social Science*, 6(11), 1-17.
- Baskoro, H., Prabowo, H., Meyliana, M. and Lumban Gaol, F., 2022, Predicting Startup Success, a Literature Review. *International Conference on Information Science and Technology Innovation (ICoSTEC)*, 1(1), pp. 123-129. doi: 10.35842/icostec.v1i1.6.

- Berkus, Dave. 2016. After 20 Years: Updating the Berkus Method of Valuation. Available: <https://www.angelcapitalassociation.org/blog/after-20-years-updating-the-berkus-method-of-valuation/>, Accessed on May 21, 2023
- Binowo, K., & Hidayanto, A. N., 2023, Discovering Success Factors in the Pioneering Stage of a Digital Startup. *Organization*, 56(1), 3-17. <https://doi.org/10.2478/orga-2023-0001>
- Bocken, N., 2015, Sustainable venture capital catalyst for sustainable start-up success?. *Journal of Cleaner Production*, 108, 647-658.
- Burt, Ronald & Opper, Sonja., 2020, Political Connection and Disconnection: Still a Success Factor for Chinese Entrepreneurs. *Entrepreneurship Theory and Practice*, 44. 104225871989311. 10.1177/1042258719893110.
- Cachay, Orestes & Mauricio, David & Santisteban, José. (2020). Critical success factors for technology-based startups. *International Journal of Entrepreneurship and Small Business*. 1. 1. 10.1504/IJESB.2020.10035620.
- Cao, Z., Shi, X., 2021, A systematic literature review of entrepreneurial ecosystems in advanced and emerging economies. *Small Bus Econ*, 57, 75–110. <https://doi.org/10.1007/s11187-020-00326-y>
- Chandra, A. & Fealey, T., 2009, Business incubation in the United States, China and Brazil: A comparison of role of government, incubator funding and financial services. *International Journal of Entrepreneurship*. 13. 67-86.
- Cheah, S., Ho, Y. P., & Lim, P., 2016, Role of Public Science in Fostering the Innovation and Startup Ecosystem in Singapore. *Asian Research Policy*, 7(1), 78–93.
- Daniel Keogh & Daniel K.N. Johnson, 2021, Survival of the funded: Econometric analysis of startup longevity and success. *Journal of Entrepreneurship, Management and Innovation*, Fundacja Upowszechniająca Wiedzę i Naukę "Cognitione", vol. 17(4), pages 29-4
- David, D., S. Gopalan, and S. Ramachandran., 2020, *The Startup Environment and Funding Activity in India*. ADBI Working Paper 1145. Tokyo: Asian Development Bank Institute. Available: <https://www.adb.org/publications/startup-environment-and-funding-activity-india>
- Díaz-Santamaría, C.; Bulchand-Gidumal, J., 2021, Econometric Estimation of the Factors that Influence Startup Success. *Sustainability*. 13, 2242. <https://doi.org/10.3390/su13042242>
- D. M. Kristin, Y. U. Chandra and M. N. Masrek, 2022, Critical Success Factor of Digital Start-Up Business to Achieve Sustainability: A Systematic Literature Review. *International Conference on Information Management and Technology (ICIMTech)*, pp. 583-588, doi: 10.1109/ICIMTech55957.2022.9915107.
- Dolfsma, Wilfred & Seo, DongBack., 2013, *Government policy and technological innovation - A suggested typology*. *Technovation*, 33. 173–179. 10.1016/j.technovation.2013.03.011.
- Dronjak, M., 2019, Social Entrepreneurship: Determining Critical Success Factors for Croatian Social Enterprises, Varazdin Development and Entrepreneurship Agency (VADEA), Varazdin.
- Eisenmann, T., 2021, *Why start-ups fail*. Harvard Business Review, Available: <https://hbr.org/2021/05/why-start-ups-fail>, Accessed on May 21, 2023
- Festel, G.W., Wuermseher, M., & Cattaneo, G., 2013, Valuation of Early-stage High-tech Start-up Companies. *International journal of business*, 18, 216-231.
- Fraenkel, J. R., & Wallen, N. E., 2012, *How to Design and Evaluate Research in Education (8th ed.)*. New York, NY: McGraw-Hill.
- Isenberg, D., 2011, *The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship*. Babson Entrepreneurship Ecosystem Project, Babson College, Babson Park: MA.
- Gartner, W. & Liao, J., 2012, The effects of perceptions of risk, environmental uncertainty and growth aspirations on new venture creation success. *Small Business Economics*, 39, 703-712.
- Giardino, Carmine & Bajwa, Sohaib & Wang, Xiaofeng & Abrahamsson, Pekka., 2015, Key Challenges in Early-Stage Software Startups. *Lecture Notes in Business Information Processing*. 212. 52-63. 10.1007/978-3-319-18612-2_5.
- Grilli, L. & Murtinu, S., 2014, Government, venture capital and the growth of European high-tech entrepreneurial firms. *Research Policy*, 43, 1523-1543.
- Gross, Bill. 2015. The Single Biggest Reason Why Start-Ups Succeed. [Video], Available: <https://www.youtube.com/watch?v=bNpx7gpSqBY>, Accessed on May 21, 2023.
- Guzman, J.B. and Lussier, R.N., 2015, Success Factors for Small Business in Guanajuato, Mexico. *International Journal of Business and Social Science*, 6, 1-7.
- Gottschalk, S. & Niefert, M., 2013, Gender differences in business success of German start-up firms. *International Journal of Entrepreneurship and Small Business*, 11(19), 1-24.
- Groenewegen, G. & De Langen, F. 2012, Critical success factors of the survival of start-ups with a radical innovation. *Journal of Applied Economics and Business Research*, 2(3), 155-171.

- Haddad, Haifa & Weking, Jörg & Hermes, Sebastian & Böhm, Markus & Krcmar, Helmut., 2020, Business Model Choice Matters: How Business Models Impact Different Performance Measures of Startups.
- Haltiwanger, J., Jarmin, R. & Miranda, J., 2012, *Who creates obs? Small vs. large vs. young?* Unpublished working paper. University of Maryland and US Census Bureau.
- Hardiansyah, R., & Tricahyono, D., 2020, Identifikasi Faktor-Faktor Kesuksesan Start Up Digital di Kota Bandung. *Jurnal Ekonomi*, 27(2), 134-145. doi:<http://dx.doi.org/10.31258/je.27.2.p.134-145>
- Hemmer, Martin & Cross, Adam & Cheng, Ying & Kim, Jae-Jin & Kohlbacher, Florian & Kotosaka, Masahiro & Waldenberger, Franz & Zheng, Leven J., 2019, The distinctiveness and diversity of entrepreneurial ecosystems in China, Japan, and South Korea: an exploratory analysis. *Asian Business & Management*. 18. 10.1057/s41291-019-00070-6.
- Hermawan, Atang & Septiawan, Budi & Febriani, Nurul., 2019, Critical Success Factors for Financial Technology Startup Company.
- Hormiga, E., Batista-Canino, R. & Sánchez-Medina, A., 2010, The role of intellectual capital in the success of new ventures. *International Entrepreneurial Management Journal*, 1-22.
- Hudson, John & Khazragui, Hanan., 2013, Into the valley of death: Research to innovation. *Drug discovery today*, 18. 10.1016/j.drudis.2013.01.012.
- Hyder, S. and Lussier, R., 2016, Why businesses succeed or fail: A study on small businesses in Pakistan. *Journal of Entrepreneurship in Emerging Economics*, Vol. 8, No. 1, pp.82–100.
- Hyytinen, Ari & Pajarinen, Mika & Rouvinen, Petri., 2014, Does innovativeness reduce startup survival rates?. *Journal of Business Venturing*. 30. 10.1016/j.jbusvent.2014.10.001.
- Janáková, Hana., 2015, The Success Prediction of the Technological Start-up Projects in Slovak Conditions. *Procedia Economics and Finance*, 34. 73-80. 10.1016/S2212-5671(15)01603-2.
- Joshi, K. & Satyanarayana, K., 2014, What ecosystem factors impact the growth of high-tech start-ups India?. *Asian Journal of Innovation and Policy*, 3(2), 216-244.
- Kalyanasundaram, Ganesaraman., 2018, Why Do Startups Fail? A Case Study Based Empirical Analysis in Bangalore. 10.7545/ajip.2018.7.1.079.
- Kim, Bo-Young & Kim, Hyojin & Jeon, Youngok., 2018, Critical Success Factors of a Design Startup Business. *Sustainability*. 10. 2981. 10.3390/su10092981.
- Kitchenham, B., Mendes, E., Travassos, G.H., 2007, A Systematic Review of Cross- vs. Within-Company Cost Estimation Studies, *IEEE Trans on SE*, 33 (5), pp 316-329.
- Klein, T., Dasija, W., & Meinerzhagen, S., 2022, Phase dependency of success factors in startups.
- Krishna, H. S., Deepak, C., & Bala Subrahmanya, M. H., 2021, An assessment of competitiveness of technology-based Startups in India. *International Journal of Global Business and Competitiveness*, 16, 28–38. <https://doi.org/10.1007/s42943-021-00023-x>.
- Lee, I. and Lee, K., 2015, The Internet of Things (IoT): Applications, Investments, and Challenges for Enterprises. *Business Horizons*, 58, 431-440. <https://doi.org/10.1016/j.bushor.2015.03.008>
- Lucas, Todd & Alexander, Sheldon & Firestone, Ira & LeBreton, James., 2007, Development and initial validation of a procedural and distributive just world measure. *Personality and Individual Differences*. 43. 71-82. 10.1016/j.paid.2006.11.008.
- Luc, Tran & Thanh, Le & Phung, Nguyen., 2020, Studying the Successor Startup Enterprises—A Case Study of Quang Binh Province, Vietnam. *Open Journal of Business and Management*. 08. 1426-1438. 10.4236/ojbm.2020.84091.
- Mack, E., & Mayer, H., 2016, The evolutionary dynamics of entrepreneurial ecosystems. *Urban Studies*, 53(10): 2118–2133. <https://doi.org/10.1177/0042098015586547>.
- Mahyuni, L. P., & Rinaldi, V., 2022, Exploring key success factors of sustainable start-up business. *Jurnal Ekonomi Dan Bisnis*, 25(2), 237–252. <https://doi.org/10.24914/jeb.v25i2.3046>
- Mattes, Verena & Leible, Sarah & Schallmo, Daniel., 2022, Start-up Ecosystems: An Approach for Analysis and Success Factors.
- Mattes, Verena & Leible, Sarah & Schallmo, Daniel., 2022, Start-up Ecosystems: An Approach for Analysis and Success Factors.
- Motoyama, Y., & Knowlton, K., 2014, Examining the connections within the startup ecosystem: A case study of St. Louis. Working Paper in Ewing Marion Kauffman Foundation.
- Mueller, S., Volery, T. & Von, B., 2012, What do entrepreneurs actually do? An observational study of entrepreneurs' everyday behavior in the start-up and growth stages. *Entrepreneurship Theory and Practice*, 995-1017.
- Nalintippayawong, S., Waiyawatpattarakul, N., & Chotipant, S., 2018, Examining the Critical Success Factors of Startup in Thailand Using Structural Equation Model. *2018 10th International Conference on Information Technology and Electrical Engineering (ICITEE)*, 388-393.

- Okrah, James & Nepp, Alexander & Agbozo, Ebenezer., 2018, Exploring the factors of startup success and growth. 9. 229-237.
- Patanakul, Peerasit & Pinto, Jeffrey., 2014, Examining the roles of government policy on innovation. *The Journal of High Technology Management Research*, 25. 97–107. 10.1016/j.hitech.2014.07.003.
- Pauwels, Charlotte & Clarysse, Bart & Wright, Mike & Van Hove, Jonas., 2015, Understanding a new generation incubation model: The accelerator. *Technovation*. 50. 10.1016/j.technovation.2015.09.003
- Popay, Jennie & Roberts, Helen & Sowden, Amanda & Petticrew, Mark & Arai, Lisa & Rodgers, Mark & Britten, Nicky & Roen, Katrina & Duffy, Steven., 2006, Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme. 10.13140/2.1.1018.4643.
- Preisendorfer, P., Bitz, A. & Bezuidenhout, F., 2012, Business Start-ups and their prospects of success in South African Townships. *South African Review of Sociology*, 43(3), 3-23.
- Sahaf, Muneera & Tahoo, Lamea., 2021, Examining the Key Success Factors for Startups in the Kingdom of Bahrain. *International Journal of Business Ethics and Governance*, 9-49. 10.51325/ijbeg.v4i2.65.
- Satar, Mir., 2016, A Conceptual Model of Critical Success Factors for Indian Social Enterprises. *World Journal of Entrepreneurship, Management and Sustainable Development*. 12. 1-29. 10.1108/WJEMSD-09-2015-0042.
- Santisteban, José & Mauricio, David., 2017, Systematic literature review of critical success factors of Information Technology startups. *Academy of Entrepreneurship Journal*, 23. 1-23.
- S.E. Fitria & Hakim, F.R., 2021, Identification of Critical Success Factor Startup in Business Incubator (Case Study: Bandung Techno Park). *International Journal of Social Service and Research*.
- Sefiani, Y. & Bown, R., 2013, What influences the success of manufacturing SMEs? A perspective from tangier. *International Journal of Business and Social Science*, 4(7), 297-309.
- Skawińska, Eulalia & Zalewski, Romuald., 2022, Success Factors of Startups in the EU—A Comparative Study. *Sustainability*. 12. 8200. 10.3390/su12198200.
- Song, M. K., Podoynitsyna, H., Bij, H., & Halman, J. I. M., 2008, Success factors in new ventures: A meta-analysis. *The Journal of Product Innovation Management*, 25, 7–27.
- Spigel, B., 2016, Developing and governing entrepreneurial ecosystems: the structure of entrepreneurial support programs in Edinburgh, Scotland. *International Journal of Innovation and Regional Development*, 7(2): 141–160.
- Startup Statistics (2023), 35 Facts and Trends You Must Know, Available: <https://firstsiteguide.com/startup-stats/>, Accessed on June 1, 2023.
- Startup Failure Rate Statistics (2023), Available: <https://explodingtopics.com/blog/startup-failure-stats>, Accessed on June 1, 2023.
- Sulayman, Muhammad & Mendes, Emilia & Urquhart, Cathy & Riaz, Mehwish & Tempero, Ewan., 2014, Towards a Theoretical Framework of SPI Success Factors for Small and Medium Web Companies. *Information and Software Technology*. 56. 10.1016/j.infsof.2014.02.006.
- Sun, S. L., Zhang, Y., Cao, Y., Dong, J., & Cantwell, J., 2019, Enriching innovation ecosystems: The role of government in a university science park. *Global Transitions*, 1(June), 104–119. <https://doi.org/10.1016/j.glt.2019.05.002>
- Tasnim, Rahayu & Saleh, Yahya & Mariani, M.N. & Said, Hamdan & Zainuddin, Muhammad., 2013, Are Successful Entrepreneurs Committed or motivated? A Research Review Synchronizing Commitment, Motivation and the Entrepreneur. *ACRN Journal of Entrepreneurship Perspectives*. 2. 46-62.
- Thiranagama, Randi., 2016, An Empirical Study of Success Factors in Transforming Accounting and Engineering Professionals into Entrepreneurs in the SME Sector, Sri Lanka. *NSBM Journal of Management*, 1. 26. 10.4038/nsbmjm.v1i1.3.
- Thiranagama, R. & Edirisinghe, K., 2015, Factors affecting small business start-up of engineers and accountants in Sri Lanka. *NSBM Business & Management Journal*, 6(1), 84-107.
- Tracogna, Andrea & Venier, Francesco & Tivan, Moreno & Bortoluzzi, Guido & Balboni, Bernardo., 2014, The Growth drivers of Start-up Firms and Business Modelling: A first step towards a desirable convergence. *Management*. 9. 131-154
- T. Lux and Y. Kempf, 2021, Success Factors for Market Entry of Mobile Health Startups. *IEEE/ACS 18th International Conference on Computer Systems and Applications (AICCSA)*. pp. 1-4, doi: 10.1109/AICCSA53542.2021.9686849.
- Wang, Clement & Ang, Bee., 2004, Determinants of Venture Performance in Singapore. *Journal of Small Business Management*, 42. 347 - 363. 10.1111/j.1540-627X.2004.00116.x.
- Weking, Jörg & Böttcher, Timo & Hermes, Sebastian & Hein, Andreas., 2019, Does Business Model Matter for Startup Success? A Quantitative Analysis.

- Yoo, C., Yang, D., Kim, H. & Heo, E., 2012, Key value drivers of startup companies in the new media industry – The case of online games in Korea. *Journal of Media Economics*, 25(4), 244-260.
- Yoon-Jun, L., 2010, Technology strategy by growth stage of technology-based venture companies. *International Review of Business Research Papers*, 6(6), 216-234
- Yu, Li & Artz, Georgeanne., 2019, Does rural entrepreneurship pay?. *Small Business Economics*. 53. 10.1007/s11187-018-0073-x.
- Zarrouk, Hajer & Ghak, Teheni & Bakhouché, Abdelazak., 2021, Exploring Economic and Technological Determinants of FinTech Startups' Success and Growth in the United Arab Emirates. *Journal of Open Innovation: Technology, Market, and Complexity*. 7. 50. 10.3390/joitmc7010050.
- Zhao, A. & Ren, Y., 2022, The Efficacy of Leadership on the Success of a Startup. *7th International Conference on Social Sciences and Economic Development*.

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