

CHAPTER 2

LITERATURE REVIEW

To be able to conduct insightful and sharp research, there are previous literature and studies regarding the same topic have been found. The works found are about startups, its development stage, the challenges it faces, and a more thorough introduction about the sectors discussed in the research.

2.1. Former Research on the Topic

There are several pieces of research found on the topic of startup challenges and startup success. The previous research is analyzing startup success and the challenges it encounters from various perspectives. Table 2.1. shows the recent study that the researcher found regarding the topic.

Table 2.1. Former Research on Startup Challenges and Startup Success

No	Title	Author/s	Method	Conclusion and findings	Research Comparison
1	Startups' roads to failure	Marco Cantamessa, Valentina Gatteschi, Guido Perboli, Mariangela Rosano POLITO (Polytechnic of Torino), 2018	The three-step method or preliminary research	Startup failures are rarely due to a single cause. This research is studying the most critical cause behind startups' lack of success in up to the first five years of their establishment. This research is using the SHELL (business model (S), product (H), competitors or stakeholders (E), organization (L), customer or user (L)) model to categorize the startup failures. The research finds that 47% of the startups manage to run their business for only two to three years. The business model (S) and customer or user (L) are two of the most influential factors behind startup failures. Failure to meet the business model (S) requirements causes 37% of startups failures,	This research is studying both the external and internal factors that cause startup failures. My research only analyzes the effect of external challenges to startup success.

No	Title	Author/s	Method	Conclusion and findings	Research Comparison
				and the failure to fulfill customer or user (L) factor causes in 30% of the startup failure.	
2	Startup companies: Life cycle and challenges	Aidin Salamzadeh, and Hiroko Kawamorita Kesim. The University of Tehran and Ondokuz Mayıs University, 2015.	Conceptualization	This research explained and conceptualized startup phenomena by elaborating on its lifecycle and the challenges it encounters. It maps startup growth into three stages: the bootstrapping stage, the seed stage, and the creation stage; and its challenges into four categories: financial challenges, human resources, support mechanisms, and environmental elements.	This research elaborates on the startup lifecycle and challenges broadly. This research determines the startup lifecycle according to its founder and internal activity of the startup. This research study both the internal and external challenges that a startup face. My study defines the startup growth stage according to both the internal activity on a startup and the external progress. This research studied more on the external challenges and sees which challenge has a more significant effect on startup success according to its sector.
3	The Influence of Innovation and Entrepreneurial Self-Efficacy to Digital Startup Success	Agnes Dessyana, Benedicta Prihatin Dwi Riyanti Atmajaya University, 2017	Quantitative	This research finds that self-efficacy entrepreneurial have are more influential in determining startup success than innovation. Startups with a higher degree of self-efficacy are more likely to achieve higher success. Otherwise, innovation only plays a role in the development phase of the startup, which is the first three months to two years.	This research focuses more on learning which factors between the psychological and innovation factors that hold a more significant influence on startup success. My research is studying how the external challenges that a startup encounter in their growing phase affect its startup success.
4	Systematic Literature Review of Critical Success Factors of Information Technology Startups	José Santisteban, David Mauricio. The National University of San Marcos, 2017	Systematic literature review	This research is elaborating startup success factor from the selected 74 of the available 1013 primary studies around the topic. The systematic literature review concludes three factors that influence a startup's success: organizational, individual, and external factors.	This research is determining the most influential factors for startup success through systematic literature research. My research is learning about the external challenges that influence a startup's success from an in-depth interview with startups in the Indonesia startup ecosystem.
5	Impact of entrepreneurship policies on opportunity to startup	Ali Davari, Taraneh Farokhmanesh University of Tehran, 2017	Descriptive correlational study	This research studies the influence of policies in legislation, supportive action, education, and culture in developing opportunities for a startup. It finds out that	This research studies how policies affect the opportunity that a startup has. My research focuses more broadly on all external challenges, including but not limited

No	Title	Author/s	Method	Conclusion and findings	Research Comparison
				supportive action of giving financial and non-financial support affect the opportunity of a startup by 0.48 ($t > 1.96$). Followed by the impact of regulation on entrepreneurship law and general affect the opportunity of a startup by 0.41 ($t > 1.96$).	to, the regulation and government-environmental challenges and see how it influence a startup's success.

2.2.Startup

The startup definition may differ from each institution and ecosystem players in the ecosystem. Marcus, Malen, & Ellis (2013) define a startup as a company that is not fully operating yet and still has a continuously changing model. On the other side, startup.com, as one of the leading startup platforms, defines a startup as an entrepreneurial venture that's initiated by not more than three founders. It is a venture that is currently in its very early phase of improving the focus on trying to capitalize on the perceived market demand. They do this by keeping improving their viable product, service, or platform (McGowan, 2018). A startup is also known as a company that's not older than ten years, with a maximum of just around 12 employees (including founders). It has a highly innovative business model or technology (Kollman, Stockmann, Hensellek, & Kensbock, 2016). Together, all those definitions illustrate startup as a scalable young venture initiated by just a few founders. The products and business model of a startup keep on changing and innovating with a very innovative business model or technology that often puts them in an uncertain and risky situation.

For a company to be called a startup, they need to share some similar characteristics. Startups.co.uk (2019), UK business advice platform, points out that startup is a young venture (a newly established venture that is not over ten years old). It must be legally registered as it works as a sign that the company is more than just a business idea, already validated and running. Startups usually have a remarkably high dependency on the founders. It is a venture born because of the founders' eagerness and aims to offer problem-solving by making a better product with innovation. Aside from those characteristics, a startup is also a fast-paced venture.

They need to be lean and flexible in making decisions or changing priorities. They should be ready to grow and achieve some milestones in a relatively short amount of time. The startup is also a venture full of risk and uncertainty. There is too much risk of failure along the way. The last but most important characteristic a startup must have that differentiates between a startup and an SME is that startup has a global view. It has a concept that can be applied and marketed globally. SMEs, on the other side, are particularly knotted in a specific demographic or business model.

2.3.Startup Development Stage

There are a few interpretations of startup development stages. It can be seen from various perspectives like life cycle, product development, and fundraising stage. Among some of the earlier research on the startup development stages, Table 2.2. describes the most relevant startup stages that will be used as a reference in doing this research.

Table 2.2. Startup Development Stages from Earlier Studies

Ref	Stages				
	("Startup Development Phases," 2018)	Ideation and concepting	Committing	Validating	Scaling
Formation		MVP	Validation	Growth	
(Marcus et al., 2013)	Seed	Early-stage / Series A		Expansion/series B	Later stage/series C and after
(Bocken, 2015)	Seed	young		growing	Mature
(Bandera & Thomas, 2019, p. 5451)		Pre-revenue		Post-revenue pre-breakeven (revenue-generating)	Post-revenue post-breakeven period (revenue and profit-generating)

(Marcus et al., 2013; "Startup Development Phases," 2018 ; Bocken, 2015; Bandera & Thomas, 2019).

Startup development stages are the stages that define the current situation and life cycle of a startup. Startup Common identified startup growth in their article "Startup Development Phases" (2018) into five stages. The first stage is the ideation and conception stage, which represents the formation stage in startup growth. It is the phase when the founders are still building up their team without any commitment

yet. They start to develop their potential business plan without producing any real product yet. The next stage is called the committing stage. In this stage, the founders are committed as they have signed agreements and establish strategies. They have started the product development with the Most Viable Product (MVP) is ready to be validated. Next is the validation stage, where founders test the solution/product they made. They make some Key Performance Indicators (KPIs) to test if the product their product can attract some profit traction build traction. In this stage, startups usually have gained some additional funding or investments. The fourth stage is the scaling stage, as it is when a startup is at its fast growth. Startups usually focus on achieving KPI around revenue-generating, market penetration with some consideration on attracting more significant funding. The last stage is the established phase, as it is the final growth stage of a startup. A startup usually can easily attract funding, have achieved significant growth with some founders who have already exited.

On the other hand, Marcus et al. (2013) identified startup growth into four stages according to the fundraising stage of a startup. The first is the seed stage. On the seed stage, a startup is not fully operating yet, and there are still many improvements made in the startup. However, it already manages to earn investment. The second stage, early stages or series A is the stage when a startup has established the product or service. They are ready to be tested while some of the products might already be available in the market. After acquiring its series A funding, a startup is entering the third stage called the expansion or series B stage. In this stage, startups have the product and service according to the demand. It is being widely available in the market, showing high growth, and started to revenue-generating but not yet profit-generating. The last stage is the later stage/series C and higher. In this stage, the startup growth is stable, and they can start to be profitable.

However, Bocken (2015) identified startup growth into four stages. Seed as the first phase, this phase startup is mostly affected by the founders' inner circle, such as their family, friends, the founder's capital, or even grants. The next stage is the young phase, as it is when a startup starts producing its product/service and

starts to attract its' first batch of clients. The growing stage is next as it is when the market increases, more sales are gained, and the competition is getting more intense. The last phase is mature, as it is when steady transactions and able to generate profits.

Last, Bandera & Thomas (2019) identify startup growth into three-phase according to its' revenue-generating stages. The first is the pre-revenue stage, as it is the stage when the startup has not to generate any revenue. Startups in the stage are still focusing on validating the business model and value proposition. The next one is the post-revenue pre-breakeven period. It is when the company starts to shift its focus to gain some profitability from innovating to leverage their operational efficiency. The last phase is post-revenue post-breakeven stage is when they manage to achieve break-even and focuses on generating profit.



Figure 2.1. Startup Development Stage Summary

This research has defined the startup growth stages into four stages, as shown in Figure 2.1. The first stage of startup growth is the “ideation stage,” also known as seed-stage (Bocken, 2015; Marcus et al., 2013). It is the preparation stage for a startup where the business model keeps on changing. In this stage, the company is still developing its' business model and not yet developing any product. Ideation stage startups' capital mostly comes from the founder's inner circle. After the ideation stage, the startup is entering the second stage called the “pre-revenue stage.” It is also known as both the Minimum Viable Product (MVP) and the validation process (“Startup Development Phases,” 2018); early stage (Marcus et al., 2013); and young (Bocken, 2015). It is the stage where the company focus is still on creating and validating their MVP. In this phase, startups have not monetized from the business as they focus on seeing how the market responds to their product as they keep adjusting their business model. The third stage is the “growing stage.” This stage is also known as “revenue-generating/post-revenue pre-breakeven stage” (Bandera & Thomas, 2019); scaling (“Startup Development

Phases,” 2018); expansion (Marcus et al., 2013); or growing (Bocken, 2015). It is the stage when a startup is in its' fast growth and already able to monetize from the product. Their product is already widely spread in the market even though they are not able to make a profit yet. The startup is at its best as they enter the last stage, the “maturing stage.” This stage is also known as revenue and profit-generating/post-revenue post-breakeven stage (Bandera & Thomas, 2019) or establishing (“Startup Development Phases,” 2018) or the later stage (Marcus et al., 2013) or mature (Bocken, 2015). It is the stage when a company has shown stable growth. It is when a startup has reached its' breakeven, being incredibly attractive for capital providers, and usually the time some founders exit.

2.4.Startup Innovation

According to Amit, John, & Paul (2015), innovation is an idea realized in a product (goods or service), business process, or business model that benefits both the customers and business. The innovation they make takes part in contributing to economic growth regardless of the type and impact the innovation brought up. In the startup landscape, innovation must always bring up a positive advancement of a particular creation to their consumer. It must not always include the involvement of new technology because the added value can be from other non-technical ways (Dominguez, 2017).

Table 2.3. Types of Innovation

	Core Business	R&D Product	Moonshots
Objective	Leverage startup ability to improve operations, costs, or digital technologies within the core business	Work with startups to accelerate new technology development/product innovation	Gain a foothold or strategic presence in disruptive new technology or market spaces
Staff	Project managers and startup scouts	Technologist, data hackers, startup scouts	In-house entrepreneurs, designers, marketers, startup scouts
Mode	Startups as business execution lever	Startup as technology/product development accelerator	Startups as disruptive ecosystem partners/accelerants

(Imaginatik & Masschallenge, 2016)

According to Imaginatik & Masschallenge (2016), there are three types of innovation a startup can bring into an ecosystem. It is the innovation in the core

business, R&D Product, and moonshot (ambitious, ground-breaking technological projects with promising benefits and high potential risk with no high expectation on short-term profitability (Rouse, 2014). Table 2.3 is showing the classification of innovation and the contribution of each startup in each type of innovation.

2.5.Success for a Startup

Successful startup plays a significant role in the modern economy (Wong, Cheung, & Venuvinod, 2012). It has a massive impact on a country's development (Kollman et al., 2016). In Europe, a successful startup can generate up to 50% of the new jobs in the country (Kollman et al., 2016). Santisteban (2017) defines a successful startup as a new venture with a product/service that can change how people do things. It manages to earn promising traction from the market, being able to make a lot of new job opening and make a repeatable, scalable, and profit-generating business model. It is easy to identify whether a startup is successful or not from its internal economic situation. The internal economy of a startup can be seen from its annual revenue report and its source of financing reflected in the cap table (Kollman et al., 2016).

2.6. Challenges Faced by a Startup

Wong et al. (2012) mentioned about entrepreneurs as the people who are prepared to make changes in their ventures. They need to be lean so they can discover new ideas that help them to survive and grow in the world that keeps on changing. An entrepreneur needs to be ready for a change since, through the process, they will find many challenges. As an entrepreneur, they must have the quality and character to overcome the challenges that came along. Some former researchers try to map the challenges they need to face.

Kollman et al. (2016) identify 8 things that has a very big impact on startup growth and the unfulfillment of these things will become significant challenges that a startup need to overcome: education system, the ability of educational institutions like school and universities to develop and deliver the entrepreneurial mindset and behavior in their countries; individual attributes and knowledge, each person's

eagerness to grow and their entrepreneurial spirit; market dynamics, as all the market related things such as opportunities, room for innovation and monetization; competition, which is consisting of Porter’s five forces such as the rivalry between competitors, new market entry barrier, suppliers bargaining power, customer’s bargaining power, possible substitute and the innovation speed of each company; politics, such as the drop of some bureaucracy, tax breaks, and some support on raising capital; business environment, like socio-economic, political, legal and regulatory condition for the startup; cooperation, the willingness of big companies to partner with startup and how many collaboration options a startup have to those companies; institutional support, which includes the funding providers, support around management guidance, and proper access to infrastructure and technology.

Google & A.T. Kerney (2017) also pointed out some challenges a startup face and some efforts government can do to overcome it: talent development, decreasing the human capital gap through the making of several numbers of programs in order to attract overseas talents to come; fiscal incentives; startup facility like educational platform and administrative assistance that facilitate the born and grow of startup community; funding and exit options for a startup. On the other hand, Salamzadeh & Kesim (2015) mentioned four challenges a startup need to face: human resource, which includes all the people running the startup including its’ founders; environmental, which includes the trends that exist, the market limitations, legal matters; support mechanism, which includes all startup ecosystems and startup enablers; and financial, investment and funding options a startup have (Salamzadeh & Kirby, 2017).

Table 2.4. Challenges Faced by a Startup from Earlier Studies

Ref.	(Kollman et al., 2016)	(Google & A.T. Kerney, 2017)	(Salamzadeh & Kesim, 2015)	Classification of factors used in this research
Challenges factors	Education system	Talent development	Human resources	Talent
	Individual attributes and knowledge			
	Market dynamics	Fiscal incentives	Environmental elements	Market
	Competition			
	Politics			
	Business environment	Startup facility	Support mechanism	Startup
	Cooperation			
				Regulation and Government related environment

Ref.	(Kollman et al., 2016)	(Google & A.T. Kerney, 2017)	(Salamzadeh & Kesim, 2015)	Classification of factors used in this research
	Institutional support			Facility
		Funding and exit options	Financial	Funding

(Kollman et al., 2016; Google & A.T. Kerney, 2017; Salamzadeh & Kesim, 2015)

Those groups identify a classification of the challenges factors towards a startup's growth that shares similar characteristics. Out of the selected studies, there are five challenges factor categories that are identified: talent, market, regulation, facility, and financial. "Talent" is also known as talent development (Google & A.T. Kerney, 2017) and human resources (Salamzadeh & Kesim, 2015). It is the availability of high-quality human resources and personal development programs to support a startup. "Market" is also a mixture of market dynamics and competition (Kollman et al., 2016). It is all the market-related things which include all the business environment that affect market behavior. Market challenges consist of Porter's five forces (rivalry between competitors, new market entry barrier, suppliers bargaining power, customer's bargaining power, possible substitute). "Regulation and government-related environment" is also called fiscal incentives (Google & A.T. Kerney, 2017). It also includes both politics and government-related business environment (Kollman et al., 2016), even the regulatory, political, legal environment like the drop of some bureaucracy and tax breaks. "Startup facility," which is also known as the support mechanism (Salamzadeh & Kesim, 2015), are the external support parties that facilitate the startup to grow. It includes startup ecosystems or often called Startups Assistance Organizations (SAO), like incubators and accelerators, and capital providers like VCs and Angel investors. Besides the external parties that involve a startup, a startup facility also includes the proper facility of infrastructure and technology (Anderson, 2017). "Funding," which is also known as funding and exit options (Google & A.T. Kerney, 2017) and financial (Salamzadeh & Kesim, 2015). These are the fundraising challenge that a startup needs to face, requiring them to have a sharp judgment with usually the consideration to expand and grow.

2.7.Challenges Focus

2.7.1. Market

The market includes the end to end market dynamics and competition, including Porter five forces that affect market behavior. The market always remains an everlasting challenge for startups. As for them to grow, a startup must have a secure product/market fit. Product/market fit is the extent to which a product satisfies the market demand (Tjokro et al., 2020) or to what extent the product can enter a market (market entry). Most of the time, people assume that market entry happens once, which is when a startup is about to enter an industry. However, according to Helfat & Liberman (2002), a firm must keep making entry decisions during the of an enterprise; whenever there is a leap in technology or trend and businesses. These multiple entry points do not always require a startup to enter a whole new market; it is often the development of a new niche or market segment (Helfat & Liberman, 2002).

Entering a market is always a tense game for a startup because even though they are new players in the industry, they will have to deal with the existing players in the industry. Startups only have two options, which is to compete head-to-head with the current players in the market or cooperate with them. Collaboration can be done by licensing out any added value like technological innovation or becoming strategic alliances (Hashai & Markovich, 2017). However, startups are privileged with the many market entry opportunities they have.

According to Helfat & Liberman (2002), a startup has four market entry opportunities. A startup can bring a fundamentally new product or service to the industry or often known as the new-to-world industry. The second option a startup has is by bringing in a new product generation with modification on an existing product to a mature market segment. It is called the new product-market niche. A startup can also develop a product or service that already existed in another location to a new area with different geographic locations. They can also make an

established product-market where existing players do not participate (established product-market).

There are several earlier studies on what are the challenges that exist in the market. The effort spent to find a suitable target market. It includes the costly budget needed to raise awareness and facing customer acquisition, which is only some of the daily hurdles a startup needs to meet. According to Kollman et al. (2016), as mentioned in the EU Startup Monitor, market challenges may vary from customer acquisitions/sales and internationalization. On the other hand, Bosma et al., (2020) mentioned that market framework challenges are around cultural and social norms, internal market dynamics, and domestic market burdens. Having a mature market strategy is essential for a startup as good market efficiency and the market size are some of the keys to efficient, driven economies. The internal market openness and the available cultural and social norms are the keys to an innovation-driven business (Daniels, Herrington, & Kew, 2016).

2.7.2. Startup facility

The startup facility, which is also known as the support mechanism (Salamzadeh & Kesim, 2015) are the external support parties that facilitate the startup to grow. It includes startup ecosystems or often called Startups Assistance Organizations (SAO) like incubators, accelerators, capital providers like VCs, and Angel investors. Besides the external parties that involve a startup, a startup facility also includes the proper facility of infrastructure and technology (Anderson, 2017).

a. Startups Assistance Organizations (SAO)

SAO (Start-ups Assistance Organizations) is the startup assistance organization that enables entrepreneurs and ventures at diverse growth stages to develop successful businesses. SAO provides a variety of assistance and support services (Tjokro et al., 2020). SAO is a critical support mechanism that plays a vital role in the startup's life cycle, where the lack of participation in a startup increases the risk of failing (Salamzadeh & Kesim, 2015). The attendance of SAOs plays a significant role in making a startup to be an innovation-driven business (Daniels et al., 2016).

According to Salamzadeh & Kesim (2015), SAOs, or support mechanism of a startup includes angel investors, angel investors, hatcheries, small business development centers, VC. Where according to Bosma et al., (2020), the variables of startup supporting ecosystems includes the R&D transfer, entrepreneurial education at the post-school stage, and entrepreneurial learning at the school stage.

Table 2.5. Classification of SAOs

classification	types of support
Network	Events
	Competitions
	Coworking spaces
	Platforms
	Startup media
Talent	Education
	Extracurricular
	Research
Support	Accelerator
	Incubators
	Growth
	Policy Influencers
	Government
Capital	Pre-seed fund
	Public funds
	Corporate Venture Capital
	Business angels
	Alternative finance
	Private Equity and VC Firms
Expertise	TTO's and KTO's
	Development
	Science Parks

(Koenraads, 2018)

b. Infrastructure

Advancement in infrastructure helps leverage entrepreneurial opportunities. Even though its highly capital intensive, infrastructure plays a vital role in improving the connectivity, interaction, and exchange of knowledge between people, which fuel and benefit entrepreneurial ventures like startups. The research of Audretsch, Heger, & Veith (2014) classifies infrastructure into four categories. The first two categories indicate physical infrastructures like motorway interchange and long-distance train station, followed by the knowledge and communication infrastructure.

These four categories of infrastructure play a more critical role in different types of startups. Physical infrastructures like railway, highway, ports, and other traditional types of supports play a more significant impact on firms like manufacturing. Knowledge infrastructure indicates how accessible are knowledge in certain areas (distance to closest university or research institution). It plays a significant role in encouraging the advancement of startups in technology-oriented services. Communication infrastructure, like the availability of broadband, is leveraging activities in software startups, high technology-oriented services, manufacturing, consumer-related services, and retail trade startups (Audretsch et al., 2014). So, noting the critical role each infrastructure has to each type of startups, the absence or lack of specific infrastructure facility can hinder the startup growth.

2.7.3. Talent

Talent is also known as talent development (Google & A.T. Kerney, 2017) or human resources (Salamzadeh & Kesim, 2015). It is the availability of high-quality human resources and personal development programs to support a startup. According to Kollman et al. (2016), one of the challenges faced by a startup is around staff acquisition. A startup usually starts with one or a few cofounders only. However, as the startup grows, the founders need to find experts to develop their business, which includes prototype, MVP, or business model (Salamzadeh & Kesim, 2015). The team hiring part becomes so crucial that the lack of knowledge in this part can cause the startup to fail due to human management issues (Salamzadeh & Kesim, 2015). That is how talent remains as one of the critical considerations in the startup ecosystem. Labor market efficiency, higher education, and training on human resources are some of the keys to efficiency-driven economies (Daniels et al., 2016).

According to Hermann, Gauthier, Holtschke, Bermann, & Marmer (2015), some of the things a startup consider during the hiring process is around the talent quality (previous experience in startup and the technical skill), availability (easiness in

finding relevant talent including the time needed and the administration process of hiring talent abroad), and cost (average market salary). After the hiring process, startups still need to deal with talent issues around the retention rate of employees and the high hiring cost for compensation or when facing talent hijacking (Kurode, Kurode, & Moitra, 2019).

Indonesia itself is still facing a talent shortage, as according to Google & A.T. Kerney (2017), in 2017, Indonesia's producing far fewer engineers than surrounding countries like Malaysia, Thailand, Vietnam, and India. There are also no specific government programs and initiatives to bring in foreign talent or to prevent Indonesian talent from going abroad. In early 2019, some leading unicorns in Indonesia are initiating their R&D centers to fulfill their talent need and expectation (DailySocial id, 2018).

2.7.4. Regulation and Government-Related Environment

Table 2.6. Regulation and Government-related Environment of a Startup

Sources	(Kollman et al., 2016)	(Anderson, 2017)	(Bosma et al., 2020)	Classification of factors used in this research
Classification of challenges	Reduction of the regulatory and administrative burden	The bureaucracy of government authorities	Government policies: taxes and bureaucracy	Government policies (taxes and bureaucracy)
	Tax reduction or relief	Policy around multiple levies and taxes		
	Support for venture capital			
	Support with raising capital		Government policy: support and relevance	Government policy (support and relevance)
	The improved exchange between politics, startup, and the established economy, easiness in hiring international talents			
	Better support for founders (e.g., local support and advice structures)	Imported goods/services and competition from multinationals hinders local SMEs	Government entrepreneurship programs	Government entrepreneurship programs
Establishing entrepreneurship education	Establishing multinational startup events, competitions, and networks			

	Raising the cultural acceptance for entrepreneurship	Awareness of SME	Internal market burdens/entry regulation	Internal market burdens/entry regulation
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(Anderson , 2017; Bosma et al., 2020; Kollman et al., 2016)

Regulation is also called fiscal incentives (Google & A.T. Kerney, 2017). It includes both politics and government-related business environment (Kollman et al., 2016) also the regulatory, political, legal environment like the drop of some bureaucracy and tax breaks. According to Salamzadeh & Kesim (2015), legal (including government-related issues) is one of the environmental elements of the startup that will affect the success of a startup. The lack of attention in the area often causes failure for startups. According to Daniels et al. (2016), government policy and government entrepreneurship programs are essential for a business to grow efficiently. In Indonesia itself, regulation has always been one of the most concerning factors for the startup ecosystem. DailySocial id (2018) mentioned some of the regulatory hurdles in Indonesia. It is around E-commerce tax, standardized QR code payment, ride hailing-related regulation and localized data center. The absence of relevant regulation can be seen as both obstacles or necessity. However, surely it has to be solved to bring business certainty (DailySocial id, 2018). As there are several studies from the diverse country around the topic, here are some of the measuring factor used to measure the regulative and governmental environment for a startup (with some adjustments),

Those groups identify a classification of bottlenecks on the Regulation and Government Environment towards a startup's growth that shares similar characteristics. Out of the selected studies, there are four challenges factor categories that are identified. The first one is government policies, which include taxes and bureaucracy. Then there is the government policy that includes government support and relevance. The last two are government entrepreneurship programs and internal market burdens/entry regulations. Government policies (taxes and bureaucracy) include reduction of regulatory and administrative burden, the bureaucracy of government authorities, tax reduction or relief, and support for venture capital (Anderson, 2017; Kollman et al., 2016). Government policy (support and relevance) includes support with raising capital and improved

exchange (between politics, startup, and the stable economy). It also includes the easiness of hiring international talents and better support for founders (e.g., local support and advice structures). Government policy also includes government support related to imported goods/services and competition from multinationals that often hinders local SMEs (Anderson, 2017; Kollman et al., 2016). Government entrepreneurship programs include establishing entrepreneurship education, multinational startup events, competitions, and networks (Anderson, 2017; Kollman et al., 2016). Internal market burdens/entry regulation includes raising the cultural acceptance for entrepreneurship, and awareness of SME (Anderson, 2017; Kollman et al., 2016).

2.7.5. Funding

Funding is also known as funding and exit options (Google & A.T. Kerney, 2017) and financial (Salamzadeh & Kesim, 2015). These are the fundraising challenge that a startup needs to face, requiring them to have a sharp judgment with usually the consideration to expand and grow. The often confusion that a startup has around funding is usually on predicting the amount of capital the startup needs as founders need to consider it according to its' stages. Founders must choose between loan and equity, and keep up with the sufficient financial report (Kurode et al., 2019). Kollman et al. (2016) point out that the challenges around startup funding are in maintaining profitability, cash flow/liquidity, and raising of capital.

According to Google & A.T. Kerney (2017), there are two classifications of investors according to its' demographic scope of investment, which are the local investors and foreign investors. Local investors are a capital provider who is headquartered or has the most investment in the country. It consists of the conglomerate or state-owned enterprises VCs. They have a strong local presence and expertise in the country's market and often participate in smaller and early-stage deals. On the other hand, a foreign investor is an investor who is headquartered and has the majority of investments outside the country. They usually come from more advanced startup markets like Japan, the US, China. They are bringing in global

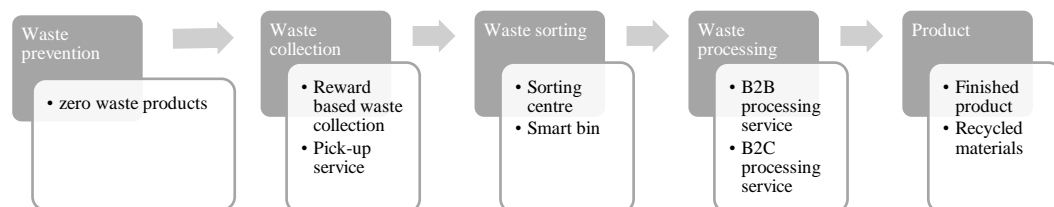
expertise and networks and often participate in bigger ticket size, and later-stage rounds.

2.8. Sector Focus

2.8.1. Waste management

Indonesia is estimated to produce around 190,000 tons of waste every day with the most significant component of organic waste (Mann, 2019). Aside from organic waste, there is a concerning rate of plastic waste produced in Indonesia. There are around 25,000 tons of plastics waste in Indonesia every day, with at least 20% of it are likely to end up in rivers and coastal waters (Mann, 2019). The massive number of unmanageable wastes happened due to the lack of public awareness in the issues and investments in the sector by the government or other private sectors. Most wastes are generated locally and still very privately managed by local parties. It is locally-owned and community-driven solutions that provide accessible and cost-effective infrastructure for waste management. However, these recent years there are seen to be raising awareness and trends of waste management on a personal and household level, especially on the middle-class-society using waste friendly products and better waste sorting in houses. There are a few startups in the sector that is developing along with the rising trend.

The classification of the rising startups in the waste management sector is classified based on its process as follow



(Tjokro et al., 2020)

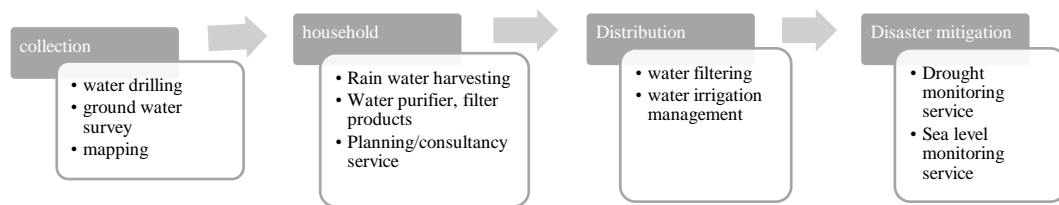
Figure 2.2. Classification of Waste Management Startup

2.8.2. Water management

Indonesia is facing a severe issue with the even distribution of clean water and sanitation. The rapid growth of the Indonesia economy over the past 20 years has not been accompanied by equal access to clean water. The lack of access to clean water is an urgent concern, let alone noting Indonesia as the fourth highest population country worldwide. The water issue is seen as an urgent matter, for it has a high impact on life from health to the welfare of society. According to The Ministry of National Development Planning (Bapennas), in 2019, there are still 33.4 million people lacking access to clean water. There are around 99.7 million people lack access to proper sanitation facilities. The 2019 BPS data mentioned that there is only 72.55 population have access to clean water. This number is far below the SDG target of 100% clean water access (“Bapennas: Dibutuhkan 253,8 Triliun Untuk Akses Air Bersih Yang Merata di Indonesia,” 2019). It is harder for people in Indonesia to notice that water as one of the suppressing issues in the country. Indonesia itself is the largest archipelagic country in the world, with around 17,000 islands, with 81% (7.9 million km²) of the total area of the country is sea area (*ADB Indonesia - Country Water Assessment Indonesia*, 2016).

There is a considerable expectation of innovation and funding support on the water management sector in Indonesia. For millions of low-income societies and those in remote areas, new water connections, water wells, and improved toilets are not affordable (“Indonesia’s water and sanitation crisis,” 2019). However, luckily there are seen a growing microfinance sector and startups recognizing the issue. Some startups are taking advantage to fill in the gap, and the ever-increasing need for better water management in Indonesia.

The classification of the rising startups in the water management sector is classified based on its process as follows



(Tjokro et al., 2020)

Figure 2.3. Classification of Water Management Startup

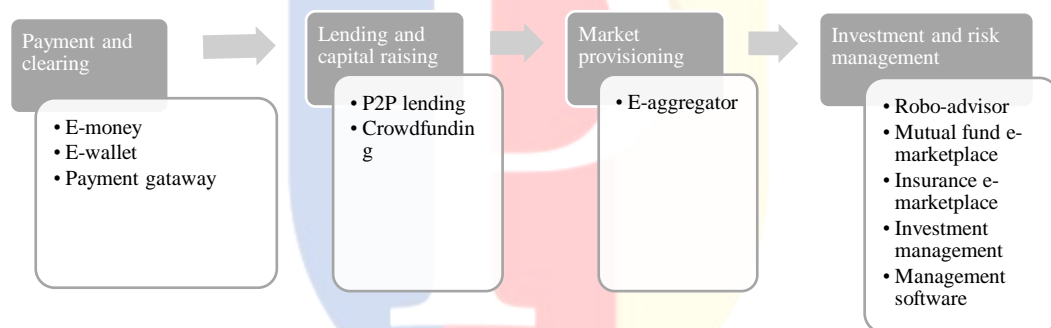
2.8.3. Financial Technology (Fintech)

Fintech ecosystem has pointed massive growth in Indonesia with the first startup players in the industry has grown into one massive unicorn, with some other players soon catching up with the reach of the high valuation of more than USD 100 million (Daily Social Research, 2019). This large number of investments are portraying the investor's and existing ecosystem players' confidence in the sector. It is foreseen that fintech is going to keep holding a vital role in Indonesia's digital industry development. Fintech players now have a broader collaboration option with other financial institutions and merchants from various sizes (SMEs to big business) (Daily Social Research, 2019). The rising adoption of digital payments is benefiting the other sectors. It is contributing to the rapid growth of Indonesia's internet economy with a growth rate of 49% a year. Reaching an estimated USD 40 billion (2019) and expected to keep growing to USD 130 billion by the year 2025. It is making Indonesia the most prominent and fastest-growing Internet economy in Southeast Asia (*e-Conomy SEA 2019, 2020*).

Indonesia is one of the catchiest markets in Southeast Asia, with the highest population number of around 264 million people in the country. It includes 99 million of the unbanked population (Daily Social Research, 2019; *e-Conomy SEA 2019, 2020*). Fintech in Indonesia still has a long runway, motivating startup to catch the untapped opportunity. It encourages startups on expanding access, reducing cost, and increasing efficiency to financial services for Indonesia's widely spread and diverse population (Daily Social Research, 2019).

The fintech in Indonesia offers a wide variation of financial services. The current leading players with the lending and payment model with the potential rise of newcomers in insurance and wealth management for many Indonesian still do not have insurance coverage in any form. Fintech plays a significant role in achieving government agendas for attaining a higher financial inclusion rate (SNKI) for the startup in the sector are actively educating the market, including the unbanked society about the available financial services (Daily Social Research, 2019). Meanwhile, SNKI is focusing on six pillars of financial education, public financing facilities, financial information mapping, supportive regulations, distribution networks and intermediation facilities, and consumer protection (Parlina, 2016).

The classification of the rising startups in the fintech sector with the business model is classified based on its process as follow



(Tjokro et al., 2020)

Figure 2.4. Classification of Fintech Startup

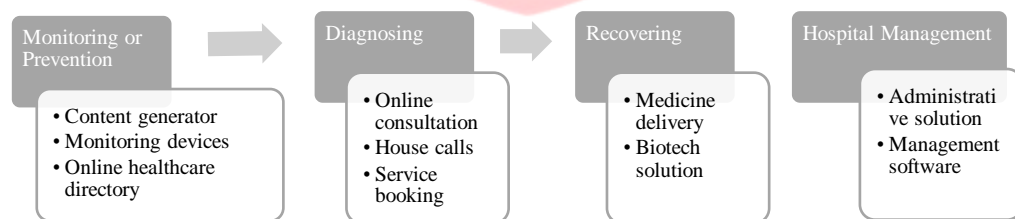
2.8.4. Healthcare

Healthcare is the sector specializing in products and services with high relation to health and medical services. Unlike e-commerce and fintech sectors that are growing mature with tighter competition, healthcare in Indonesia just started to rise. Gary Khoeng, the Executive Director of Vertex Venture, one of the leading VC in Indonesia, consider the healthcare in Indonesia is still in its' so early stage. There are no numerous notable startups in the sector seen apart from the few successful startups (Harsono, 2019b). However, optimistic growth is showed in the industry for Indonesia is ranked highest 3 for the developing market among the other Southeast (SEA) countries with the largest healthcare investment in 2019 is earned by one of

the leading teleconsultation startups in Indonesia. A total of 93% of the total funding in the SEA also falls in Indonesia and Singapore (*Asia PAC healthtech investment landscape*, 2019). The health sector has seen robust growth with increasing demand. For healthcare sector growth is tightly benefited from the rising middle-class economy, an increase in the young population, and social investment for the productive workforce. It leads to the growing demand for healthcare products (Britton, Koseki, & Dutta, 2018).

Indonesia has a very dispersed population through the Indonesian archipelagic landscape. The common challenges are the poor access to many of the remote areas and economic issues like the vast income disparities, which is one of the leading causes of the gap in supply-demand (Lim, Sharma, Colyer, & Lee, 2018). The currently available healthcare ecosystem is still very inconvenient. It is still a very traditional supplier-oriented, with a very volume-driven and high touch model (Lim et al., 2018). Thus, healthcare startups in Indonesia are still focusing on tackling those low hanging fruit issues with the technologies. It is mostly focusing on improving access and efficiencies for healthcare products and services (Harsono, 2019b).

The classification of the rising startups in the healthcare business model is classified based on its process as follow



(Tjokro et al., 2020)

Figure 2.5. Classification of Healthcare Startup

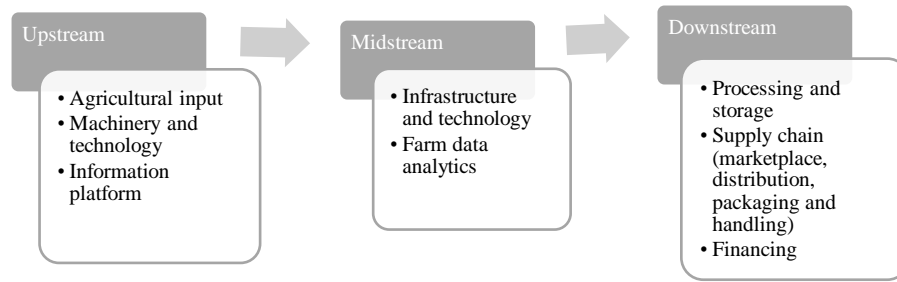
2.8.5. Agriculture

Sustained by the various landscape, agriculture has continued being one of Indonesia's local households' primary source of earnings with a significant

contribution to Indonesia's export revenue. This sector was one of the pillars of the Indonesian economy. This sector dominates 55.1% of the labor market back then in the 1990s, and it dropped down to just 31.9% in 2017. That still has quite a long path to go to reach its' full potential. However, there have been some notable improvements in the past few years on the governance period of President Joko Widodo. There are a growing number of business-friendly initiatives and the rising interest of investors in the sector. (“New areas for growth in Indonesia’s agriculture sector,” 2018). Advancements in the agricultural industry can present many benefits in economic, social, and environmental. However, aside from those benefits, the most significant contribution the agricultural sector can give is ensuring food security (International Food Policy Research Institute (IFPRI), Ministry of National Development Planning Agency (BAPPENAS), & Asian Development Bank (ADB), 2019).

Indonesia's agriculture startup landscape has started to arise in the year 2015 as some of today's leading players of the agricultural marketplace and P2P lending platforms for farmers in the sector are tapping into the market (Harsono, 2019a). The available startup industry has been able to prove their competency in giving direct support to farmers by providing direct lending and increase the farmers' prosperity by cutting the middlemen. More than just digitizing the agriculture sector, the currently available last-mile technologies in the industry are reshaping and disrupting the long-established value chain into a whole new ecosystem (Loukos & Tricarico, 2019).

The classification of the rising startups in the agriculture business model is classified based on its process as follows



(Tjokro et al., 2020)

Figure 2.6. Classification of Agriculture Startup

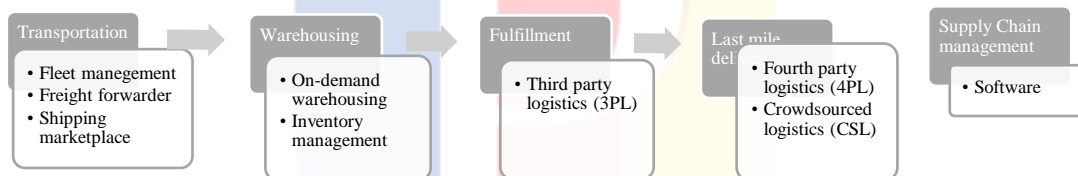
2.8.6. Logistics

Indonesia is known as one of the biggest archipelagic countries with around 17.000 islands. Thus, logistics and infrastructure have a significant role in the economic growth, connectivity, and equal distribution of infrastructure supports in Indonesia. Logistics in Indonesia are encountering various challenges such as inadequate infrastructure, the lack of qualified IT and communication networks regardless of its' vital role as the backbone of domestic and international trade of Indonesia (Mulia, 2019). Inefficiencies in logistics like the high shipping cost, significant price disparity on freight cost are some of the logistics challenges in Indonesia that affect the country's economic growth.

The cost of shipping in Indonesia remains high as it takes up around 24% of the country's GDP (2016), which is considered inefficient compared to other countries like China (18%), Thailand (15%), and Singapore (8%) (Sukaesih, 2016). The considerable disparity in freight costs between the east and west part of Indonesia is mainly because of the lack of port capacity and the unbalanced flow of goods between the two regions. It is also an indication of the disparity in regional economic development. In some cases, the domestic shipping cost in Indonesia is three times higher than the international shipping cost (Sukaesih, 2016). The growth in the logistics sector is affected by the maturing growth of e-commerce, increasing international trade and investment, and infrastructure advancements (Sun, Xing, Lim, & Tran, 2019).

The logistics industry is said to be the next emerging industry as it is following the rapid growth of Indonesia's digital economy. The number of unsolved logistics issues in Indonesia are attracting the rising number of investments in the sector. Sebastian Togelang, the founding partner of Kejora Ventures, one of Indonesia's leading VC, is showing high confidence in logistics. The logistic sector was showing a double-digit percentage of growth every year in the past few years. He also considered logistics as the key enabler to the internet economy in Indonesia. It holds a vital role in the movement of goods from merchants to consumers and also involves payments between parties (Mulia, 2019). With the crucial role of logistics to the development of other startups in other sectors, logistics will face rapid growth with more opportunities in the supply chain of logistic issues.

The classification of the rising startups in the logistics business model is classified based on its process as follow



(Tjokro et al., 2020)

Figure 2.7. Classification of Logistics Startup

2.9. Conceptual Framework

This research will mainly focus on analyzing the effect of each startup's challenges on a startup's success. The challenges that will be mostly discussed: talent, as in the availability of high-quality human resource and the access to the development program for them; market, the current market situation including the competitors and customers; regulation, all legal, law, policy, and government-related matters; facility, the external enabler of a startup, the infrastructural and facility for the startup; and funding, access to external funding support.

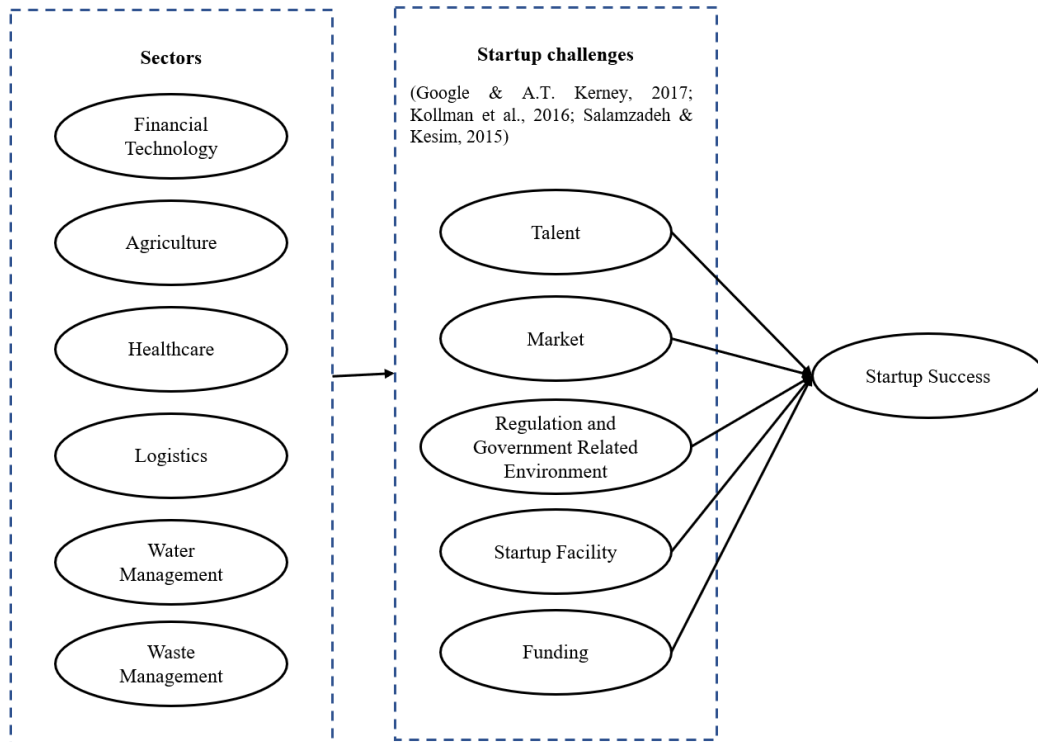


Figure 2.8. Conceptual Framework