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Diagnostic Study on African startup ecosystem for greater knowledge based-economic growth: The case of Ethiopia

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Abstract

The African startup ecosystem has experienced significant growth in recent years, with an increase in funding, the number of startups, and the number of investors involved in the ecosystem. However, despite this expansion, the African startup ecosystem still represents only 0.2% of the global startup value. Much more work is needed to enable the continent to catch up with the global startup scene. The Ethiopian startup ecosystem is a part of the wider African startup ecosystem, but it falls behind in terms of funding, number of startups, and involvement of both local and international investors compared to the regional leaders (Kenya, South Africa, Egypt, and Nigeria). Analysing the startup ecosystem in Ethiopia can provide valuable insights to map the current situation of startups in Ethiopia outlining their challenges and opportunities and inform the development of strategy & other interventions focusing on youth and women-operated startups in Ethiopia. Purposive selection of study locations and respondents were made to gather data using in-depth questionnaires. The finding of this study indicated that the main challenges of the ES include lack of proper regulations, lack of right or skilled manpower (missing the required number of staff with required expertise, experience and skills), venture capital shortage, weak industry linkage, knowledge gaps, lack of creative environment, abandoning startups at seed stages, lack of strong linkage with market, limited coaching service, lack of working space, lack of networking and getting better service providers, lack of sustainable government support and collaboration. These findings with their implication will have pragmatic value in informing decision-making and interventions by the government.

Key words: Innovation, Startups, Ecosystem.

1.1 Background

Africa has long been cited as the final frontier for global growth and investment, yet reality has often failed to live up to these expectations. The continent has shown pockets of tremendous potential, which have proven to be fertile ground for entrepreneurs and startups to grow and blossom. Africa has the potential to become a startup superpower in the tech sector. Funding for tech startups on the continent is growing at an impressive rate – six times faster than the global average – and a record $4.9 billion was raised in 2021, the amount more than tripling in one year. But this is still a fraction of the total: African startups account for just 0.2 per cent of the $3.8 trillion value globally. Cumbersome regulations, the digital-skills gaps, limited funding and highly fragmented markets continue to hold Africa's startups back (Bayuo et al., 2022).

Major problems which are troubling most startups are lack of clear understanding of policies, lack of funds, infrastructure, and experience in making good decisions, poor employee engagement and lack of guidance from experts (Malagiha and Hazarika, 2018). The biggest challenges to tech start- ups in the continent are infrastructure, skills and talent, finance, government regulations, access to the market and immaturity of the tech startup ecosystem (GP Business Consulting, 2022). It is important to identify the problems faced by tech startups that cause them to fail to proffer solutions that will enable them to contribute to economic growth.

Startup ecosystem mapping/diagnosis, which is the essence of this study, helps to explain and understand the status of the ecosystem so that right intervention and support activities can be taken to nurture or develop the ecosystem and its key components. This ecosystem diagnostic study for the case of Ethiopia can give a valuable insight for the other nations of African continent to take appropriate intervention and policy measures to foster their respective STI ecosystem which is at different stages of development.

1.2 Purpose and Objectives of the Study

The purpose of this study is to map the status or situation of startups in Ethiopia outlining their challenges and opportunities and inform the development of strategy & other interventions focusing on youth and women- operated startups in Ethiopia, thereby other African nations might follow similar approach to develop and promote STI in the continent.

1.3 Study's Context and Framework

Startup ecosystem mapping/diagnosis, which is the essence of this study, helps to explain and understand the status of the ecosystem so that right intervention and support activities can be taken to nurture or develop the ecosystem and its key components. Startup diagnosis study uses common constructs to explain ecosystem status, define ecosystem problems and mapping using the following themes: startup financing, government (policy, laws & support/incentives), culture & human capital, digital & other infrastructure, markets to startups, support institutions (incubators and accelerators, and other supporting organizations & platforms). Meanwhile, the main actors of the startup ecosystem are obviously the startups themselves.

This study also adapted a framework of analysis comprising seven key components of the startup ecosystem: Finance, financing & investment (ecosystem component 1); Ecosystem support institutions or ecosystem builders (Ecosystem Component 2), Markets and marketing (Ecosystem components 3); Digital and Other Infrastructure (Ecosystem component 4); Government ecosystem components (Ecosystem component 5); Culture, community and social (Ecosystem Component 6); and Human capital and capacity building (Ecosystem Component 7). It also discusses other platforms & cross-cutting issues.

In this study, the researcher finds it informative and appropriate to discuss the facts, status, challenges and prospects of Ethiopian startups embedding in the other ecosystem components since the secondary sources on startups as one component of the ecosystem are discussed in fragmented way. The brief description of the other components is presented below and displayed in Figure 1:

Component 1-Finance, financing & investment: Finance, financing & investment ecosystem components may include and discuss various issues pertinent to government, MInT, ERCA, commercial & development banks, microfinance institutions, angel investors, venture capitalists, corporate investors, similar local & foreign investors, donors, awarding agencies, NGOs, bilateral agreements, multilateral agreements, international institutions, programs/projects, finance catalysts and networking agencies, incubators, accelerators, and similar institutions/agencies that can finance startups or programs/projects dedicated to finance startups.

Component 2- Ecosystem support institutions or ecosystem builders: Business support service ecosystem components include and discuss issues related to government and other similar support institutions/systems that promote, aid and facilitate the capacity building of startups, business development service providers (government, NGO and private institutions), ecosystem builders themselves such as incubators, accelerators, and other similar hubs.

Component 3- Market and marketing: Marketing ecosystem components include and discuss the issues of promotion, markets, marketing, commercialization, networking support institutions and government agencies which can provide market facilitation, connection, creation, advisement, promotion, networking, and other services to startups.

Component 4- Digital and other infrastructure: Infrastructure ecosystem components may include and discuss about actors that have direct contributions on technology infrastructure building, permits, availing efficient tech-platforms & facilities, physical infrastructure (office space, meeting spaces, etc.) and digital infrastructure (networks, bandwidth, etc.), utility service providers (electricity, water, telecommunications, internet), working space, shade and/or land providers, shades, workshops, ICT labs, science/technology/innovation labs, facilities in higher learning institutions, etc.

Component 5- Government support (support/promotion/laws/policies): Government ecosystem components may involve and discuss about any government support, promotion, policy and legal platforms, structure and infrastructure that can promote and build any of the startup ecosystem components and aid to develop the startups.

Component 6- Culture, community and social: Culture, community and social ecosystem components may include and discuss various issues related to a culture of promoting entrepreneurship, science, technology and innovation by the general public, potential consumers/buyers of new products/services invented locally, empowerment of women startups, entrepreneurial mind-sets and readiness of students/youth/women, influence and role of social institutions, informal organizations, encouragement from family, friends, investors, role models, social networks, etc.

Component 7-Human capital and capacity building: Human capital and capacity building components may include and discuss about the education, training, research and development system, capacity building, availability of trained workforce in science and technology, governmental and non-governmental institutions that can promote an entrepreneurship culture, science, technology (innovation).

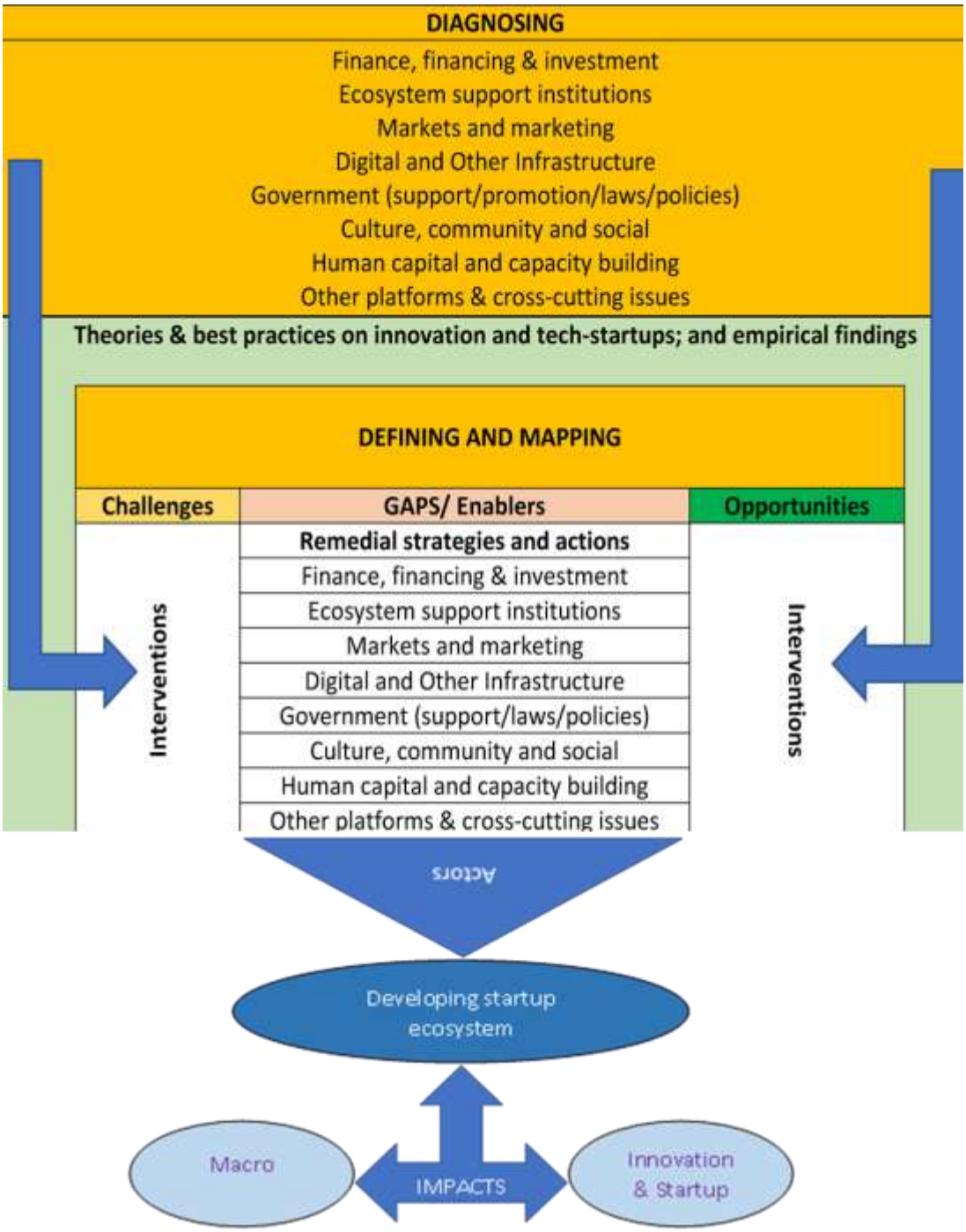


Figure 1 Conceptual framework of the study

1.4 Methodology

Being the national study made on the startup ecosystem which identify the problems and status of the ecosystem as a baseline, discussing the methodological approaches has to be given not less importance. Thus, it is necessary to discuss the methods & procedures employed along the scope and limitations of the study.

1.4.1 Research method

This study has explored and reported the startup ecosystem in Ethiopia, made situation analyses and reality check on and among the different actors of the ecosystem. In order to gather the relevant data from these subjects, the exploratory study has employed mixed methods, it was possible to collect more than the expected number of questionnaire data. The qualitative data analysis supplements the quantitative data analysis and vice versa.

1.4.2 Subjects of the study/ecosystem actors

The participants of study include different actors (startups, accelerators, incubators, government institutions, financial institutions, etc.) playing different roles in the country's startups ecosystem. The subject groups/respondents of this diagnostic study involved the following participants:

i) Startups
ii) Government startup promoters and supporters (like MInT, Job Creation Commission, etc.)
iii) Non-government startup promoters and supporters
iv) Startup supporters (accelerators, incubators, and Investors)
v) Selected Universities and technology centers (universities with incubation centers)
vi) Investors & financial institutions (venture capitalists, angel investors, seed capital providers, fund catalysts, prize institutions, donors, banks & other financial institutions)
vii) Other subjects (private companies which organize programs or sharing work place, etc.)

1.4.3 Sampling

Purposive selection of study locations and respondents were made to gather data using in-depth questionnaires and even observations where possible. In spite of this, attempt was made to reach all potential respondents of all groups at least by sending emails and placing calls.

Selected location: As it is a national study which is made for the first time on the SU ecosystem, the study was conducted in locations which were organized into four routes/clusters: Addis Ababa; 4 cities in Oromia Region (Bishoftu, Adama, Ambo and Jimma); 3 cities in Amhara Region (Bahir Dar, Debre Birhan and Godar); 3 cities found in Eastern Ethiopia (Dire Dawa, Harar and JigJiga); and 2 cities from Southern Ethiopia (Hawassa & Arba Minch). These cities and major towns are selected due to their large population size (≥120,000), existence of incubation centers, and industrial and agro-processing parks.

1.4.4 Data analysis, integration and reporting

Before explaining the data integration, it is sound to discuss the data analysis made for both the quantitative data and the qualitative data.

Quantitative data analysis: The quantitative data is mainly used to map the startup ES, particularly to map the two major ES actors identified by this study—startups and ESBs. It is also used to supplement the findings obtained through qualitative discussions or complement those issues which could not be covered by the quantitative data when appropriate. However, in order to have a complete map of the ES and its actors, the qualitative findings made through desk research/content analysis is mandatory.

1.4.5 Function & uniqueness of the diagnostic research

Conducting diagnosis study on startup ecosystem especially for countries in early activation (emergence) stage is vital. Early-stage startups are highly dependent on their surrounding startup ecosystem. If we can create healthier startup ecosystems, we can generate more startups that are successful. We can do this by codifying how ecosystems function and evolve quantifying the factors that shape their performance (Startup Genome, 2017). Countries found at the pre-activation or emergence phase begins by gathering, diagnosing, and assembling the necessary resources for a startup ecosystem to come to life. Ecosystems at this stage are characterized by a slow (organic) growth and are likely to lack many important features such as venture capital, service provides, serial entrepreneurs or advisors, and startup friendly policies. According to a

model developed by Mekong Business Initiative (2021), the best way to support this type of ecosystem is to foster a vibrant, entrepreneur community is to nurture it with many types of events" in order to catalyse face-to-face collaboration and community.

- Diagnosis to take the right interventions
- Mapping to show the status of the startup ecosystem (e.g., for right ranking)
- Promotion of the startup ecosystem to investors (attract investors)
- Because findings from the desk review imply as Ethiopia's startup ecosystem has not gained its right position in international indexing

This study is unique and the first of its kind in terms of its scale (made in 13 cities), respondent groups (almost all ecosystem actors including the startups themselves) and its pragmatic value for making immediate interventions and provides strategic directions along the steps of implementation. The depth of the research also makes it unique since it explored the barriers in terms of the ecosystem components, support and interventions needed.

1.4.6 Limitations and treatment of limitations

There were some limitations while undertaking the study. Mainly, there were some difficulties in obtaining proportionate data from the desired target group. That means, there were difficulties to find proportionate number of questionnaire respondents in all locations. For instance, in Ambo, startup population is not well organized to reach for the study. The other limitation is availability of data which can be used for benchmarking and discuss trending of the startup industry and ecosystem.

2. Startup Ecosystems—Facts and Lessons

2.1 Introduction

The main purpose of making a review on startup ecosystems from closer economies is to learn from their ecosystem initiation, creation and development-related challenges and best practices. Thus, the focus of the literature on Africa's startup ecosystem and funding is not to see the status of different economies but to see what is there to Ethiopia's startup ecosystem building. Depending on availability of data/literature for some topics and if the concept has to be discussed, a limited number of sources are consulted if far from 2018/2019. Nevertheless, most of these sources are used for trending and comparison purpose.

2.2 Tech-startup funding in Africa

The startup environment in Africa has been booming in recent years. Investments attracted by this sector continue to grow steadily, but several regional and national weaknesses still prevent the continent from unlocking its full potential. The African tech sector has continued to witness exponential growth in the past five years. The tech startups in the region took center stage in 2021 when they reached an inflection point as companies raised over $4 billion, more than what they raised in 2019.

Startup ecosystems across Africa are beginning to play a vital role in determining the attractiveness of the continent by attracting global brands, talent and a diverse pool of investors. Nonetheless, theses ecosystems have raised more than $2bn over the past two years especially in Nigeria, Kenya, Egypt and South Africa (FDI Intelligence, 2021). On the other hand, the African tech startup ecosystem is also heavily dependent on donor funding, without a sustainable model of funding for itself. Start- ups also require mentorship and guidance for new entrants. Serial tech entrepreneurs, crucial for mentorship, angel investment and venture funding, are not common on the continent although this is changing slowly (GP Business Consulting, 2022).

The fintech sector dominated last year's total funding, accounting for 63% ($3 billion) of the funding that went to African startups. Amidst the global inflation, in the first half of 2022, African tech startups jointly raised $3.1 billion. The "big four" in the African region, with countries such as Nigeria, Kenya, South

Africa, and Egypt still maintained dominance, as the African tech ecosystem is significantly shaped by activities in these countries. Since the year 2019, startups operating in these countries have raised 83 % of all funding and signed 78 % of all $1 million-plus deals, as they show no indications of slowing down (Emmanuel, August 2022).

The African VC investment remains centered around 4 top countries attracting 80% of the volume invested.

1) Nigeria & Kenya are dominated by one particular industry representing almost half of the funding volumes: Fintech (44%) for Nigeria and Agritech (46%) for Kenya.
2) In Ghana, Fintech, Insurtech and Healthtech represent 95%+ of the funding, although the three sectors are fairly well balanced.
3) In South Africa, two sectors dominate the funding: Fintech (38%) and Enterprise (28%). Nonetheless, Agritech, E/M/S-Commerce, Mobility and Edtech each attracted above US$ 10 Million of funding.
4) Egypt shows a uniquely balanced ecosystem as the fundraising is widely spread between 5 verticals led by Healthtech (20%) and Enterprise (16%) with E/M/S-Commerce, Healthtech and Logistics each attracting around 15% of the funding (Partech, 2020).

Kenyan startups raised nearly one billion dollars in the first half of 2022, surpassing what the country secured last year. Data shows that, of the big four in Africa — the quartet that includes Nigeria, Egypt and South Africa, and which receives most VC funding in the continent — Kenya has so far showed the greatest growth in funding gained this year. This is after the East African country, through 76 deals, raised $820 million in the first half of this year, according to the Big Deal database, almost double the funding secured by the country's startups last year. For Kenya, this represents a 422% growth in funding raised, when compared to a similar period last year — when the country's startups raised $157 million.

The Big Deal's 2021 report, placed the funding secured by Kenya for the whole of last year at $411 million while Partech's data says the country raised $571 million. On both accounts, Kenya held the fourth position in Africa in terms of funding received. Egypt and South Africa have emerged third and fourth in terms of funding so far this year, having secured $538 million (71 deals) and $392 million (53 deals), respectively. However, Egypt earned the second-highest gain after recording a 244% growth in the period under review. South Africa, which was the continent's second VC investment destination last year, attained a marginal 2% growth in funding raised (Njanja, August 2022).

Africa-based investors are more active in deals with startups HQ'ed in one of the Big Four (involved as a main investor in 59% of $1m+ deals since 2019) compared to those HQ'ed elsewhere (37%). They are particularly active in Egypt (67%), South Africa (65%) and Nigeria (59%); less so in Kenya (47%). In terms of sectors, they play a strong role in Education & Jobs (involved as a main investor in 66% of $1m+ deals since 2019), Healthcare (63%) and Fintech (58%) but not so much in Agriculture & Food (34%), Energy & Water (36%) or Logistics & Transport (31%). They are slightly more active in deals involving a startup with a female CEO (they participated as a main investor in 59% of such deals since 2019) than a male CEO (53%), and startups with at least a female co-founder (58%) vs. all-male founding teams (53%). They are particularly well represented in the deals with startups with an all-female founding team (one female founder or an all-female founding team) where they are involved as a main investor in more than two thirds (68%) of the $1m+ deals since 2019. Of the 10 countries with the highest GDP, 8 make it to the top 10 in terms of funding raised. Ethiopia again (6th largest economy, #20 in funding raised) and Cote d'Ivoire are the exceptions, replaced in the top 10 by Senegal and Uganda. In terms of funding raised expressed as percentage of total GDP, the continental 'average' stands at 0.18% of GDP. Senegal (with $222m raised for a GDP of approx. $25b) is way ahead of the group (0.9%), followed by Kenya (0.41%), Nigeria (0.36%), South Africa (0.28%) and finally Egypt (0.16%) (Cuvellier, October 2022).

Countries like Tanzania and Ethiopia are yet to secure anywhere near the huge venture investments the big four regularly pull in, despite their sizeable populations of 59 and 115 million respectively World Economic Forum, August 2022.. In 2022 so far, startups in Africa with a female CEO have raised only 3% of the total funding. And that's actually less than 4 years ago.

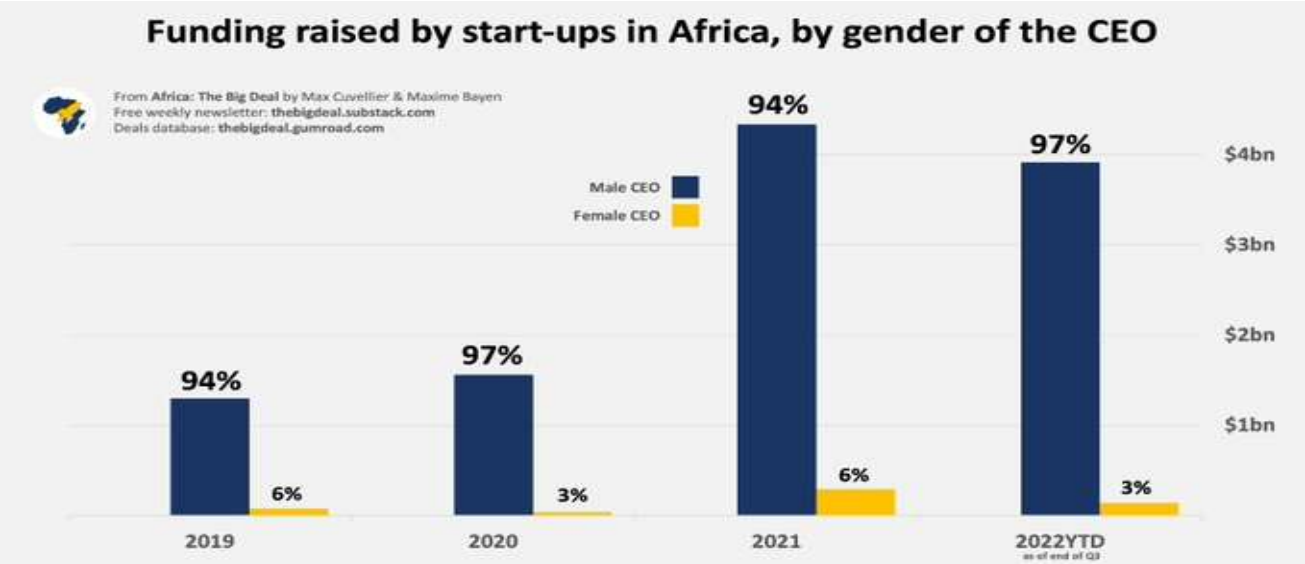


Figure 1: *Funding raised by startups in Africa by gender of the CEO (Source: Cuvellier, October 2022)*

By 2030 Africa could attract more than $90 billion in funding for tech startups, up from the current $4.9 billion. To achieve this, governments will need to decisively address the factors affecting funding of tech startups. The existing investment landscape presents challenges and deters investors: our analysis takes a deep dive into the risks, the economic and regulatory disincentives, and the lack of diversity in funding solutions. We then follow up with policy recommendations to address these challenges (Bayuo et al., 2022).

2.3 African startup ecosystems

Over the last 10 years, maturity of the business landscape has unlocked new opportunities in Africa, especially the entry of accelerators, incubators, and other startup ecosystem players. These organizations are constantly adapting their models to respond to the ever-changing needs of the ventures they support (Muathe, Sang, Kosimbei, Letema, Nyachae, Kiriago, Chelule, Ouko, Mutua and Maina, 2022). There is a higher propensity for innovation in tech entrepreneurship in developing countries compared to developed countries (GP Business Consulting, 2022).

As stated by the 2021 Global Startup Ecosystem Report by Startup Genome, Africa's rapidly growing startup ecosystem is currently valued at an enormous $6.6 billion. According to the International Finance Corporation, Africa maintains its lead over the rest of the world in innovative financial services based on mobile telephony, a trend that is rapidly bringing banking and other financial services to the unbanked and underbanked.

2.3.1 Innovation hubs

Technology hubs are fast becoming the main avenues to find locally developed applications and startups because of their increasing proliferation across the continent. Tech hubs provide a unique environment where tech startups can startup faster. They nurture a network of entrepreneurs, serving as a place from

which they can work, collaborate, meet, network, and learn. Their central assumption is that by serving as a hotspot connecting the right people in a physical space, good ideas and innovations will result. Currently, there are 643 active tech hubs in Africa.

The study made by Africa Developer Ecosystem (2021) categorized 16 African countries into five trajectories on the issue of developers and tech-startups. Among the countries, Ethiopia is the one (Algeria, Cameroon, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Morocco, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda).

South Africa is preserving steady growth. Largest developer population, investment in leading technologies, strong education, and robust startup and technology ecosystem dominated by larger companies. Egypt, Nigeria and Kenya are advancing. They have large developer population, strong startup ecosystem with a strong funding environment, and stable socio-economic conditions. Morocco, Rwanda and Ghana are fostering landscape for growth. They are in moderate-to-large developer population, mid-late-stage startup and technology ecosystem, and moderately stable economic environment. Tunisia, Algeria, Ivory Coast are Senegal are emerging which are establishing the foundation for growth. They are in small-to-moderate developer population, early-stage startup ecosystem, and an improving technology ecosystem.

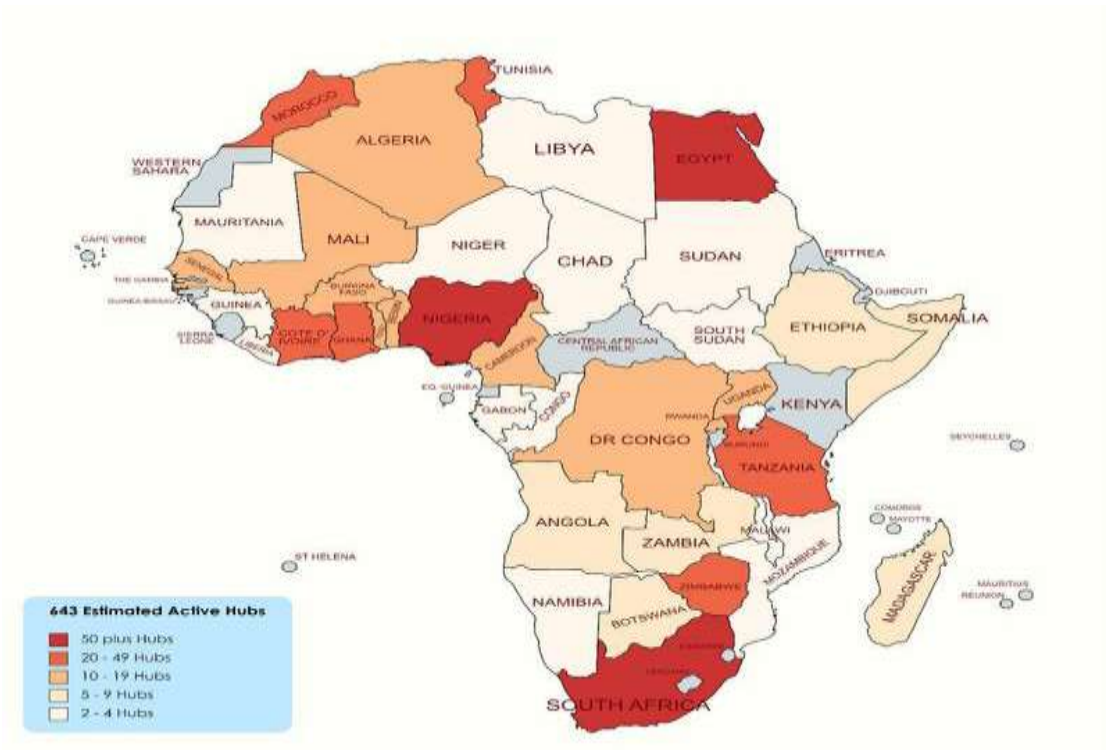


Figure 2: *Active Tech Startup Hubs in Africa (Source: GPBC analysis and Afrilabs & Briter Bridges)*

Ten African Cities are hosts to 250 tech hubs, with the remaining hubs spread across the rest of the continent. As witnessed from the global ranking indexes such as Startup Genome, Startupblink and Startup Commons and other platforms, it is clear that countries with larger number of technology hubs are performing best in terms of the startup venture creation, fund raising/financing and innovation. In the overall result, the growth of startups and innovations will in turn drive economic growth and provide more employment opportunities, something which the country is currently in dire need of since the impact of the

pandemic. https://ventureburn.com/2021/09/plans-and-findings-of-proposed-sa-startup-act-to-be-revealed/ Thus, Ethiopia is not the exception so that it is mandatory to go aggressively in developing its hubs and digital infrastructure.

2.3.2 Africa's Tech-Startup Financing

For its inaugural African Tech Ecosystems of the Future rankings, fDi has teamed up with research company Briter Bridges to map the continent's nascent tech ecosystems and explore their potential moving forward. The results provide a first look at the lively tech realities developing around Africa's biggest cities, where talent is finally able to find growing pools of capital to evolve their ideas into successful business ventures. South Africa emerges from the report as a top tech startup investment destination, achieving not only first place overall but first place for Economic Potential, Startup Status and Business Friendliness. Following behind South Africa, Kenya took second place, both overall and in economic potential.

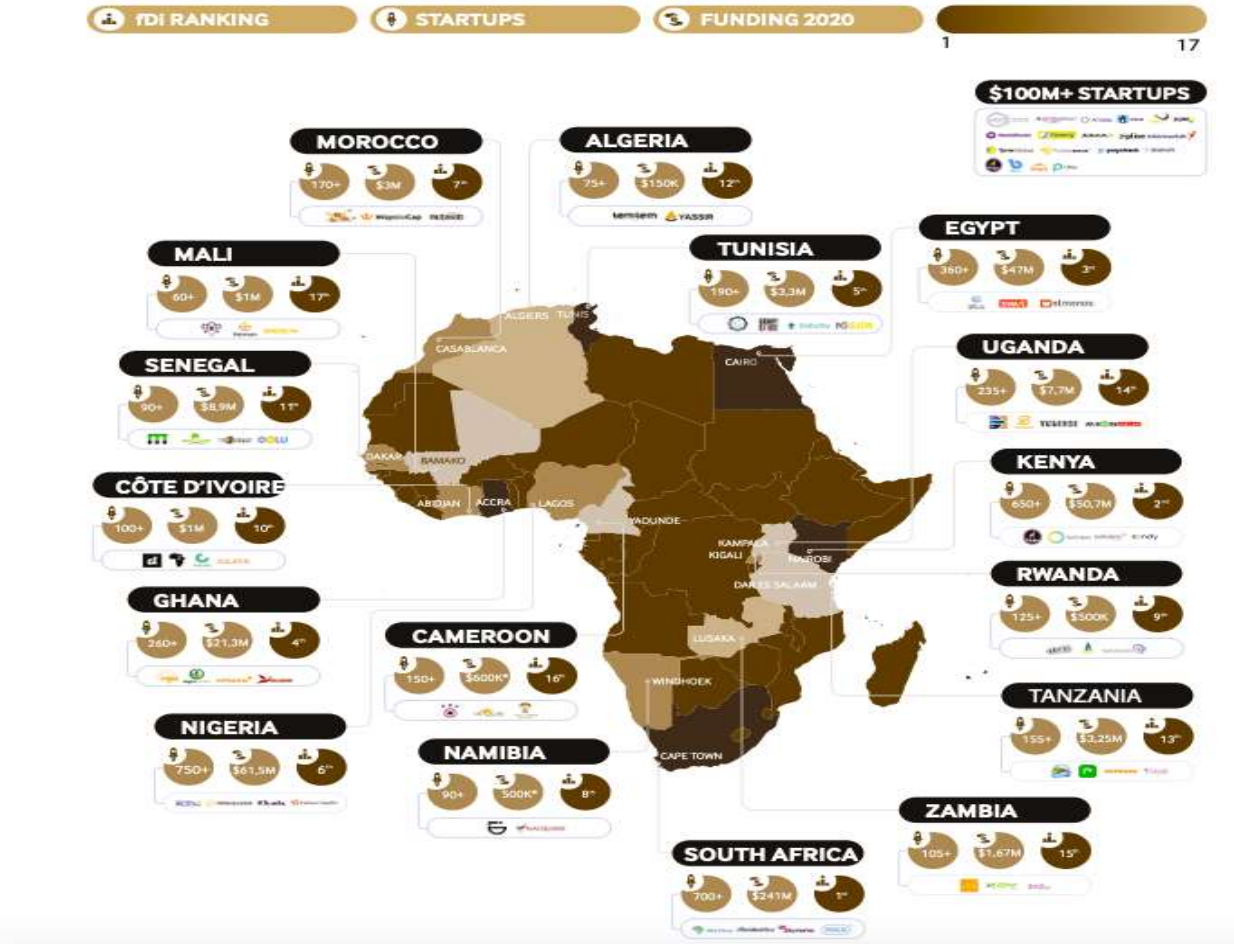


Figure 3: Main funding obtained by tech-ecosystems in Africa

Driven by Megadeals, Fintech accounted for only 32% of deals, but a large majority (63%) of funding. Digitization of foundational sectors of the economy (Commerce, Education, Energy, Health, Logistics) meant each broke into the $200M range (Partech Partners, 2021).

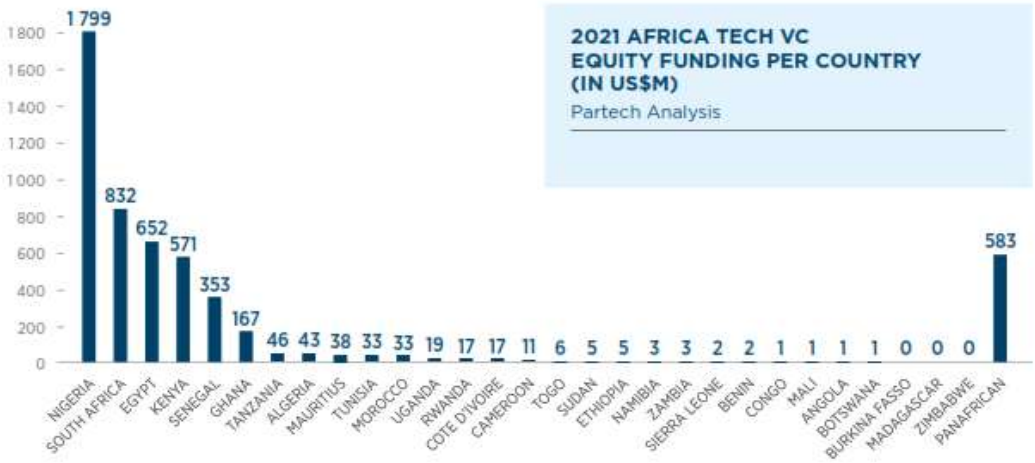


Figure 4: *VC equity raised by African tech-startups in 2021*

African tech startups raised US$2.7 billion in total funding in the first three quarters of 2022, almost 30 per cent more than the US$2.1 billion banked in the entirety of 2021.The seventh edition of Disrupt Africa's annual African Tech Startups Funding Report, released in January, found 564 startups raised a combined US$2,148,517,500 in 2021, a record for a calendar year (Jackson, T. October 2022).

Africa's complex tax regimes also serve to stifle their growth. Subjecting tech startup firms to the same tax regimes as other business endeavours makes it difficult for them to grow beyond ideas. In more advanced countries, special tax breaks exist for tech startups. The United States' Federal R&D tax credit, for instance, allows companies that engage in research and development to free up funds to reinvest in their business or reduce expenses. To benefit fully from tech startups, African countries need to introduce the right policies to ensure their sustained growth and development. If not, investors may be look elsewhere where the return on investment is better. (GP Business Consulting, 2022).

2.3.3 African Countries with Startup Act/Bill

Running a startup in Africa comes with a lot uncertainties especially as regards the regulatory environment. This is perhaps why most African entrepreneurs opt to form offshore corporations in order to strengthen not only their legal identities but also to protect the interests of investors. The Startup Act concept in Africa, which Tunisia pioneered, is once again helpful in assuaging the anxieties of both founders and investors.

Startup Acts are comprehensive legislative and regulatory frameworks aimed at fostering entrepreneurship and enabling the development of new firms with high growth potential generally through the granting of targeted incentives (tax, subsidies, procurement, etc.). Startup Acts can also be defined as a collaborative processes involving the collaboration of different stakeholders (including non-traditional ones) of the entrepreneurship ecosystem from both public and private sectors (entrepreneurs, incubators, innovative hubs etc.) (Rodrigues, 2021).

The purpose of the Startup laws in all countries are similar. They are all geared towards promoting innovative and tech-inclined products and services at the national level and international level. The Nigerian startup Bill and that of Ethiopia, do not expressly provide for its territorial application but the Kenya Startup Act takes a step further, to provide for its application at the 'county' level.

With regards to incentives, the Startup laws in Kenya, Ethiopia, Senegal, Tunisia and the proposed bill in Nigeria make provision for tax reliefs, loans and credit facilities, investment funding from both the public and private sectors, and also the issuance of grants. Additionally, Nigeria's Bill makes provision for a

pioneer status incentive scheme on incorporation and registration of intellectual property at discounted prices (Atoyebi, 2022.).

Several African governments are working to remove and rationalise the barriers to tech- startup growth through the implementation of legalisation aimed at supporting tech entrepreneurs. Dedicated startup legislation to promote startup growth has been or is being developed in 35 African countries (Bayuo et al., 2022).

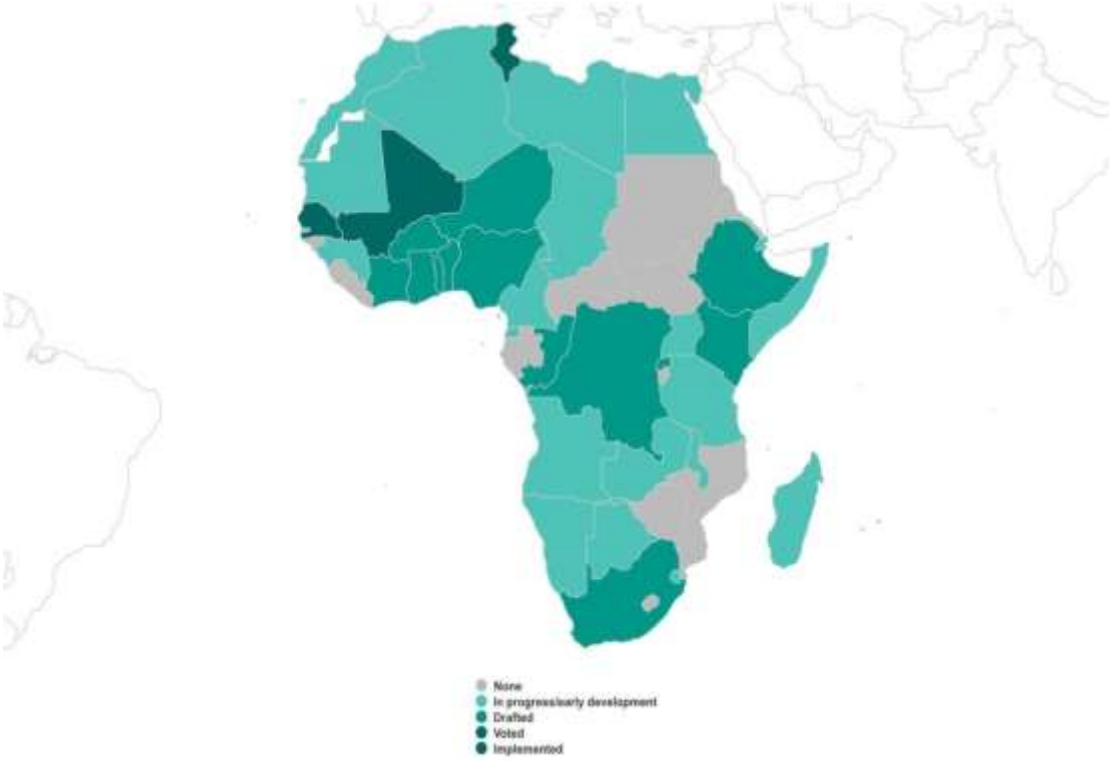


Figure 5: *Plotting the progress of startup legislation across Africa (Source: TBI, 2021)*

This legislation sets out far-reaching policies that aim to create a conducive environment for high-growth technology-enabled businesses: supporting entrepreneurs to start businesses, increasing incentives for investors to put their money into promising companies and making it easier for startups to operate.

Measures include tax holidays and other tax incentives, intellectual property laws, streamlined processes and one-year leave periods for entrepreneurs with the right to return to their previous jobs.

Table 1: A matrix of policies included in African startup legislation

Country	Dedicated authority to manage implement-tation of the law	Provisions for startup business support (training, legal, accountin)	Financial support for startups	Tax incentives for startups	Tax incentives for investors	Strengthens research and development	Intellectual property protections	Support to accredited incubators
Ghana	x	x	x	x	x	x	x	x
Kenya		x	x			x	x	
Senegal	x			x				x
Tunisia	x	x	x	x	x		x	
Mali	x	x	x			x		
Ethiopia	x							x
Nigeria	x	x	x	x	x	x		

South Africa: South Africa is home to one of most developed VC networks and the oldest startup incubator on the continent, the Cape Innovation and Technology Initiative. The incubator is credited with supporting more than 3000 entrepreneurs in its two-decade history. With ready access to VC funds, government grants, incubators and tech talent, South Africa is a vision of what other tech ecosystems could become (FDI Intelligence, 2021).

South Africa's Startup Act: The proposed South African Startup Act aims to facilitate and promote the growth and innovation of young South African entrepreneurs. According to research reports, startups with a turnover of less than an R100-million annually should be exempted from the limitations of current policies and 'red-tape which limits the growth of startups in the country.

Nigeria: The public sector is catching on to the massive potential of startups to transform Nigeria's economy, and as the Nigeria Startup Bill is being discussed, there is hope that the country will finally have a clear legal framework for developing its ecosystems. Other initiatives, such as the Startup Nigeria incubator or the Co-Creation Hub, will hopefully continue to foster the entrepreneurial spirit in the country. Nevertheless, Nigeria faces some major challenges, including a shortage of financing options and poor broadband internet infrastructure. As Nigeria is attracting international recognition with its success stories, Startupblink is certain that investment levels will increase. In the meantime, the government will have to do its part to address the infrastructure deficit to allow its talented entrepreneurs to achieve success faster (Startupblink, 2022).

Nigeria's Startup Act: Under the proposed Nigerian Startup Bill, a Startup Label shall be valid for a period of 10 years from the date of issuance. Learn more by downloading the entire document (African Heroes, February 2022). The Nigerian startup Bill, a welcome development in Nigeria was approved by the Federal Executive Council in December, 2021. The Bill aims at providing incentives, removing regulatory constraints and developing a framework for startups in the Nigerian technology system (Atoyebi, 2022). The Bill was propagated by a collaboration between the public sector and thriving investors in the private sector. Notable collaborators include the Presidency, the Federal Ministry of Communications and Digital Economy, the Nigerian Export and Promotion Council, and wider government bodies with almost 300 volunteers and private sector players, Future Africa and Ventures Platform, Advocacy for Policy and Innovation (API) and Innovation for Policy Foundation, and media organisations; TechCabal and Wimbart. Other collaborators included, Google Nigeria and the UK-Government, through the West Africa Research and Innovation Hub and the UK-Nigeria Tech Hub, are also backing the bill (Vanguard, 2021).

Kenya: Kenya Vision 2030 was designed to convert the country into "a newly-industrializing, middle-income country providing a high quality of life to all its citizens in a clean and secure environment." A key feature of this plan was the Konza Technology City, an ambitious project meant to stimulate economic growth through ICT (GP Business Consulting, 2022). A key policy area of the Kenyan Youth Development

Policy (2019) is investment in education, training and skills development. Whilst these interventions are well intended, they are often mass-scaled and propose a one-size-fits-all approach to entrepreneurship.

Kenya, already established as the heart of East Africa's technology ecosystem, with almost 50 tech hubs, represents the Eastern point of this innovation quadrangle, and new investors and corporates are flocking to Nairobi every week, looking to seize the fast-growing pool of tech talents in the country. The startup ecosystem in the country has been described as a robust one with entrepreneurs building solutions for their communities that they want to scale across the globe. The country's capital Nairobi is home to more than 200 startups. Tech startups in the country raised 14.4% of the funds (Emmanuel, August 2022). South Africa, Nigeria and Kenya have historically been the fintech hubs of Africa, but the next chapter for the industry in the continent will likely come from new, fast-growing ecosystems, including Ethiopia, Ghana and Rwanda, according to a new report (Fintechnews Middle East, January 2021).

GMSA's 2019 mapping revealed that Kenya already established as the heart of East Africa's technology ecosystem, with almost 50 tech hubs, represents the Eastern point of this innovation quadrangle, and new investors and corporates are flocking to Nairobi every week, looking to seize the fast-growing pool of tech talents in the country (Giuliani and Ajadi, July 2019). A growing and diversifying ecosystem, *Nairobi represents Africa as the leading Startup ecosystem* on the continent. Often referred to as Silicon Savannah (A play on Silicon Valley and the landscape of Kenya) the city boasts a booming tech scene on the back of the success of M-Pesa, while organizations like Konzo Techno City and Metta support and promote the city's entrepreneurship spirit (StartupBlink, January 14, 2020).

In terms of financing the landscape, there has been an increase in funding. Moreover, some of the early startup successes have become angel investors themselves e.g. Ken Njorge from Cellulant that is- now investing in Market force. Over this period, there has been notable changes in the startup ecosystem like seeing a move from mainly foreign companies to local entrepreneurs raising financing (Muathe, Sang, Kosimbei, Letema, Nyachae, Kiriago, Chelule, Ouko, Mutua and Maina, 2022)

Kenya's Startup Act: One significant thing achieved by the Kenyan Startup Bill is to shut out startups owned by established corporates. Hence, under the new law, any startup business unit (whether a subsidiary or not) owned by any established company which is not itself a startup, will not be considered a startup (African Heroes, February 2022)..

Tunisia: Tunisia is the first African country to introduce Startup Act. The Tunisian government is well aware of the importance of creating startup hubs and passed a Startup Act in 2018; a legal framework designed to boost innovation and foster entrepreneurship.

The World Bank is providing support to women and SME development in Tunisia through the Innovative Startups and SME Project. It supports the government's Startup Tunisia program and targets startups and innovative SMEs by fostering the entrepreneurship ecosystem, venture capital funds, incubators, accelerators, and coworking spaces. In 2020, the project launched an SME fund called InnovaTech, which focuses on investments in innovation and technology in digital media, renewable energy, agribusiness, ICT, media and ecommerce, and in all technologies related to digital transformation (Andrianaivo, 2020).

Tunisia's Startup Act: Tunisia is one of those countries with its eyes set on empowering its startup ecosystem, and allocating the necessary resources for its hungry and passion-driven entrepreneurs. "The Startup Tunisia initiative is meant to put the country on the map of startup-friendly ecosystems, sustained by three main pillars: the Tunisian Startup Act; the 200m Euro Fund of Funds; and the ecosystem support. With these things in motion, a synergy effect is expected to be produced between three key players: Investors, as the growth engine; incubators/accelerators as the performance lifter; and Startups as the economic and innovative locomotive." — Haythem Mehouachi, General Manager of Smart Capital, Startup Tunisia operator.Through Tunisia's latest Startup Act, it hopes to create a fertile ground for innovation that

both encourages competition and propels individuals who seek to utilise their solutions to the benefit of the community in many industries through its pre-set criteria (as quoted from the Tunisian Startup Act).

Senegal: Senegal has demonstrated the positive impact of a regulatory framework tailored to technological innovation. In 2018, the country ranked 140th in the Doing Business. Senegalese startups attracted $6 million the same year, according to the Partech report on the level of funding attracted by startups in 2018. In 2021, after the government passed a Startup Act, a law that facilitates the framework for creating, funding, and growing startups, Senegal's rank in Doing Business 2020 improved significantly to 123rd. The 2020 edition of Partech's report found that the credibility of its startup ecosystem has strengthened the interest of tech investors, who have invested $353 million (Edjo, 2022).

Senegal's Startup Act: Senegal has developed a Startup Act to facilitate the development of new enterprises in the country. The startup scene in Senegal typically has a strong technology focus. The development of this policy instrument tends to be a reaction to a push from technology-based firms. The development of the startup policy tools is therefore closely aligned with technology development (Thorsteinsdóttir, Bell and Bandyopadhyay, 2021). The Senegalese Startup Act also applies to any startup created by any Senegalese living abroad who owns at least 50% of the startup. Learn more by downloading the entire document (African Heroes, February 2022).

Rwanda: Rwanda offers an inspiring example of a country that was on the brink of failure, and has revived to become one of the most successful and organized economies in Africa. The next phase of developing a leading regional and global ecosystem will not be easy. This is especially true due to the country's relatively low population in comparison to many of its African counterparts, which makes it imperative for its founders to focus on the global market.

Rwanda's startup act: The Rwandan government appears to be taking a more aggressive role in driving startup growth with the passage of the Startup Act, which lays out the government's policies for startup growth. The country expects that the Startup Act would promote the development of the tech-based services industry. The Rwandan government has become the latest on the continent to start working on implementing a Startup Act, which it hopes will spur the development of the country's tech-based services industry. The aim is to establish a continent-leading startup ecosystem, and to legislate for this the Rwandan government has recruited the Innovation for Policy Foundation (i4Policy) to draft a national Startup Act (Jackson, August 2020).

Ghana: The Ghanan startup scene has made strides in mobile finance, as the country is well known for its mobile money systems. There is also a rising trend of female entrepreneurship. While these female entrepreneurs are mostly found at the micro level and are not necessarily startup founders, with the right kind of public support, this trend could become a growth engine for the startup scene. That said, entrepreneurs in Ghana lack enough resources for capacity building and a support network equipped to help them face challenges. The startup scene in Ghana is still young and has a lot of room to evolve (Startupblink, 2022).

Ghana's Startup Act: Under Ghana's proposed Startup Bill, 20% of public procurement contracts must be reserved for Startups and SMEs (African Heroes, February 2022).

Algeria: The Algeria Startup Ecosystem is ranked at number 117 globally, and shows a negative momentum -1 spots since 2021. Algeria also ranks at number 4 for startups in Northern Africa. There are 1 cities ranked in the top 1,000 in Algeria and the top ranked city in Algeria is Algiers at 771 globally (Startupblink, 2022)**..**

Algeria's Startup Act: Under the Algerian Startup Act, the "Startup" label is granted to the company for a period of four (4) years, renewable once (1), in the same forms (African Heroes, February 2022). The startup label allows companies to benefit from several tax and parafiscal advantages, such as exemption from business activity tax (TAP), corporate income tax and VAT on purchases for investment purposes. In

addition to SRA funding, companies with the startup label have the opportunity to benefit from land and to raise funds from local and foreign private investors (Algeria Disrupt, April 2022).

Ethiopia: According to the newly drafted Business Startup Proclamation of Ethiopia (not yet approved), startup and innovative businesses will be entitled to incentives for five years and three years, respectively. Startup leave, startup scholarships, funds to register intellectual property rights nationally and internationally, administrative legal support during registration, and support for accounting and human resources management will be provided to these businesses. Access to finance, tax breaks, an extended tax reporting period, exemptions from employee retirement and health insurance responsibilities, guarantees to get financing support, and privileges to open foreign exchange accounts are additional incentives for these businesses, according to the bill. The draft proclamation can be downloaded from: http://ictet.org/wp-content/uploads/2020/08/Laws_ETH_Startups-English-2020-06-02.pdf

2.3.4 Startup VC funding in Africa

There have been some successes in attracting investment into Africa's tech startups. For instance, in 2018, annual equity funding for tech startups in Africa doubled to more than USD1 billion—around 2.5Pct of total FDI. Nine countries received more than USD10 million: Kenya received USD348 million, Nigeria USD306 million, South Africa USD250 million, Tanzania USD75 million, Egypt USD67 million, Malawi USD28 million, Senegal USD22 million, Rwanda USD19 million, and Ethiopia USD11 million. Ethiopia is 150 out of 158 countries in the ranking. In the sub-indexes, Ethiopia ranked 152 in ICT, 155 in skills, 86 in R&D, 144 in industry, and 134 in access to finance (Spence, June 2021).

Reflecting the still nascent nature of Ethiopia's digital ecosystem, third-party investor funding to companies in this space has been trivial to date—no more than $30-$40mn by our estimates. Most startups in the sector have thus relied on own financial resources (including friends and family) and internally generated resources, limiting substantially their ability to scale up to any significant degree (Cepheus Capital Research, 2020). In 2019 and 2020, Ethiopian startups raised 11 million dollars from 63 private equity companies and venture capital investors registered in the country (Samuel, August 2020).

Table 2: Funding to digital companies in Africa

Africa Ranking	Country	Global Ranking
1	South Africa	54
2	Tunisia	60
3	Morocco	76
4	Mauritius	77
5	Egypt	87
6	Namibia	91
7	Gabon	94
8	Algeria	98
9	Ghana	103
10	Kenya	105

The very small scale of investor funding to digital companies in Ethiopia's case stands out sharply when seen in a cross-country context (Cepheus Capital Research, 2021).

African VC investment remains centered around 4 top countries attracting 80% of the volume invested.

1) Nigeria & Kenya are dominated by one particular industry representing almost half of the funding volumes: Fintech (44%) for Nigeria and Agritech (46%) for Kenya.
2) In Ghana, Fintech, Insurtech and Healthtech represent 95%+ of the funding, although the three sectors are fairly well balanced.

3) In South Africa, two sectors dominate the funding: Fintech (38%) and Enterprise (28%). Nonetheless, Agritech, E/M/S-Commerce, Mobility and Edtech each attracted above US$ 10 Million of funding.
4) Egypt shows a uniquely balanced ecosystem as the fundraising is widely spread between 5 verticals led by Healthtech (20%) and Enterprise (16%) with E/M/S-Commerce, Healthtech and Logistics each attracting around 15% of the funding (Africa, 2020).

1) Nigeria: $307 m
2) Kenya: $304 m
3) Egypt: $269 m
4) South Africa: $259 m
5) Ghana: $111 m

Table 3: Funding obtained by African tech-startups

#	Country rank	$ in M	#	Country rank	$ in M	#	Country rank	$ in M
1.	Nigeria	$307 m	11.	Algeria	5,5	19.	Sierra Leone	3,0
2.	Kenya	$304 m	12.	Tanzania	4,6	20.	Gambia	2,7
3.	Egypt	$269 m	13.	DRC	4,6	21.	Benin	2,4
4.	South Africa	$259 m	14.	Cameroon	4,0	22.	Ethiopia	2,2
5.	Ghana	$111 m	15.	Togo	3,8	23.	Mauritius	1,8
6.	Rwanda	11,6	16.	Zambia	3,8	24.	Mali	1,0
7.	Uganda	11,3	17.	Tunisia	3,4	25.	Libya	0,6
8.	Morocco	11,1	18.	Malawi	3,3	26.	Madagascar	0,2
9.	Senegal	8,6						
10	Cote d'Ivoire	6,5						

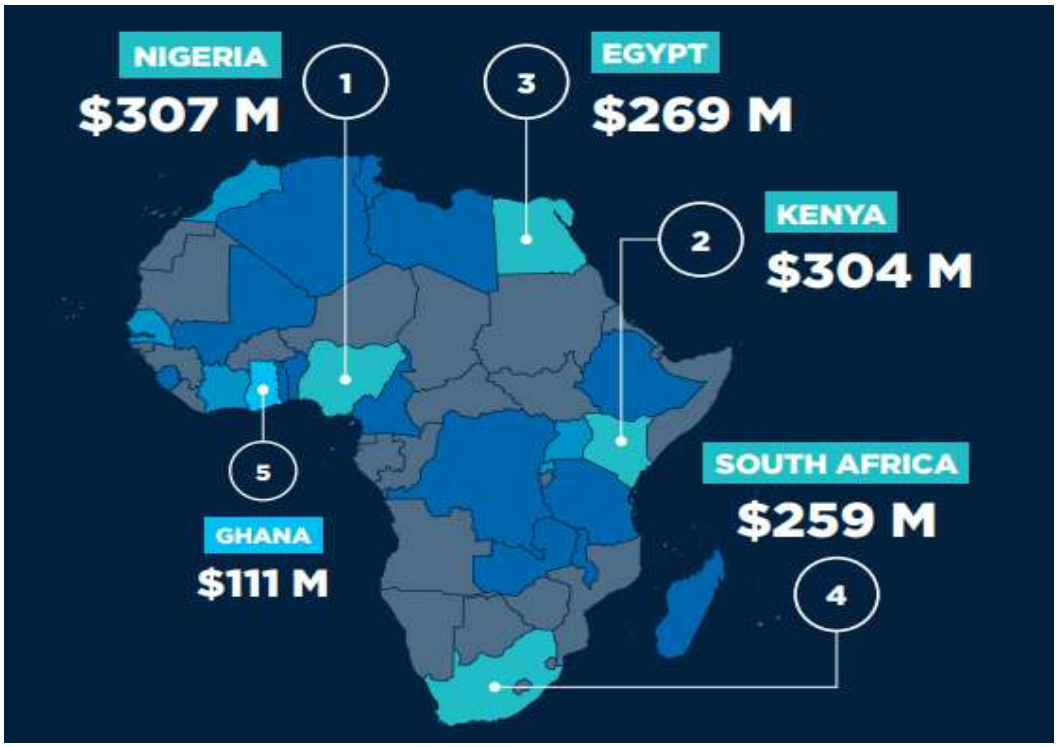


Figure 7: *Tech-startups raised the largest proportion of VC in 5 African countries*

According to the African Tech Startups Funding Report 2020, there was biggest increase in total startup funding between 2019 and 2020. At present, Ethiopia's fintech industry is relatively small compared to the likes of South Africa, Nigeria and Kenya, leaving plenty of space for growth (Disrupt Africa, January 2021). Elsewhere, Ethiopia saw four startups backed (down from five in 2020); raising USE3,775, 000 - an increase of 63.1 per cent on USE2,315,000 in 2020. Ethiopia is developing nicely, and these figures represent respectable growth, albeit much slower than the 9,160 per cent jump in investment witnessed in 2020! (Disrupt Africa, 2021).

Countries like Tanzania and Ethiopia are yet to secure anywhere near the huge venture investments the big four regularly pull in, despite their sizeable populations of 59 and 115 million respectively (World Economic Forum, August 2022).

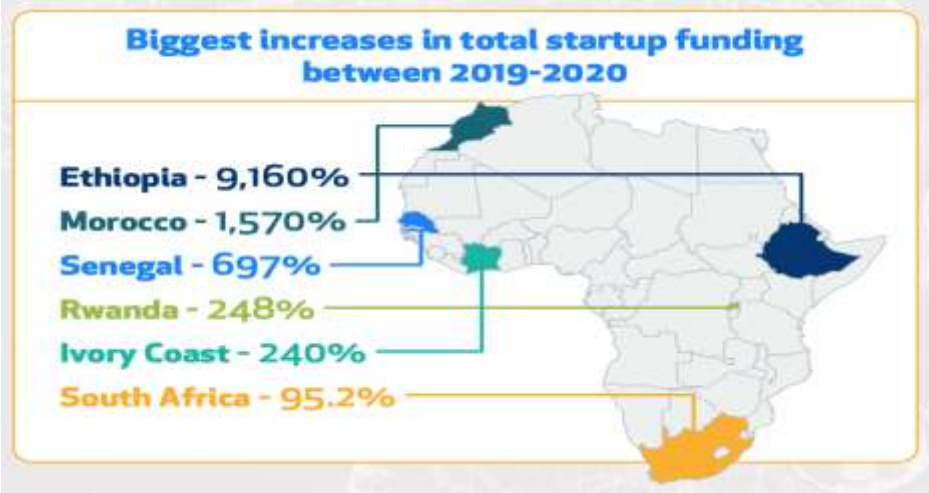


Figure 8: *Biggest increase in total startup funding between 2019 and 2020 (Source: Disrupt Africa, Jan 2021)*

3. Empirical Findings

The purpose of this study is to map the status or situation of startups in Ethiopia outlining their challenges and opportunities and inform the development of strategy & other interventions focusing on youth and women- operated startups in Ethiopia.

Sample size and data cleaning: The quantitative data was collected from startups and ESBs. The quantitative data analyses that are made based on the edited clean and usable data from startups (n=168) and ESBs/support institutions (n=70), respectively. In total, 247 questionnaires were collected from self-identified startups. Of the total 127 collected online questionnaires, only 108 are found to be appropriate for the purpose of the study. Similarly, of the total 120 (205-85) collected paper-based questionnaire, only 59 (168-109) are used for the quantitative data analysis. A total of 70 questionnaires were used for analysis of the second group of respondents—ESBs.

Participant composition: The participants of this study include different actors (startups, accelerators, incubators, government institutions, financial institutions, etc.) playing different roles in the country's startups ES. This study covered different regions and cities in the country in which the participants of the study were selected from three major cities in Amhara region (Bahir Dar, Gonder and Debre Brihan), four cities in Oromia region (Jimma, Adama, Ambo, and Bishoftu), Addis Ababa, Dire Dawa, Harar, JigJiga, Hawassa, and Arba Minch.

3.1 Mapping of startups

The study was conducted in locations which were organized in four routes/clusters: Addis Ababa; 4 cities in Oromia Region (Bishoftu, Adama, Ambo and Jimma); 3 cities in Amhara Region (Bahir Dar, Debre

Birhan and Godar); 3 cities found in Eastern Ethiopia (Dire Dawa, Harar and JigJiga); and 2 cities from Southern Ethipia (Hawassa & Arba Minch). There were also online participants from the following 13 towns/cities: Kibremengist (Oromia); Wolkite (SNNPRs); Alemtena (Oromia); Awash (2 respondents, Afar); Tulu Bolo (Oromia); Mizan Aman (SNNPRs); Samara (Afar); Mekelle (Tigrai); Nekemte (Oromia); and Lega Tafo (Oromia). Since the is uneven distribution of SUs and the data collected, the factor 'location' could not be used to make analysis of variance among the respondents of the sampled cities.
While 19% of the respondents were from A.A, the rest 81% were from the other cities.

Company location for selected 168 startups (city)

		F	%	Valid %	Cum. %
Valid	A.A	32	19.0	19.0	19.0
	Adama	11	6.5	6.5	25.6
	Ambo	2	1.2	1.2	26.8
	Arba Minch	3	1.8	1.8	28.6
	Bahir Dar	30	17.9	17.9	46.4
	Debre Birhan	8	4.8	4.8	51.2
	Dire Dawa	14	8.3	8.3	59.5
	Gondar	10	6.0	6.0	65.5
	Harar	7	4.2	4.2	69.6
	Hawassa	14	8.3	8.3	78.0
	JigJiga	6	3.6	3.6	81.5
	Jimma	19	11.3	11.3	92.9
	Other	12	7.1	7.1	100.0
	Total	168	100.0	100.0	

SU' years in business: Those SUs were asked for how long had their organization been active in operation after legally registered. This question was intended for classifying the firms based on years of operation so that comparisons could be made on the challenges the SUs encountering at their different growth stages and the capital need of the SUs at their different growth stages which may be explained in years. It was also possible to understand the changes in the ES, such as availability of financing in different years of the SUs, mainly in the past 5 years.

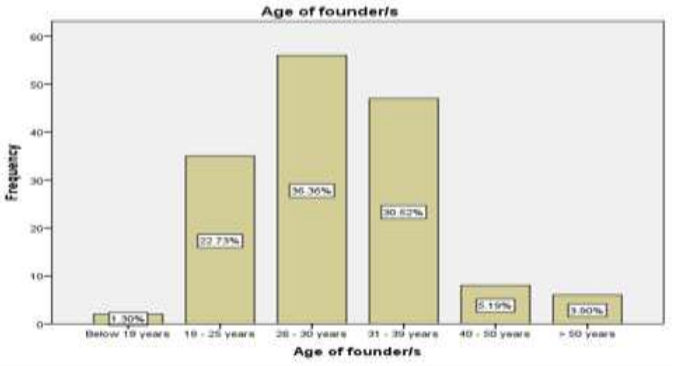
Years since Co. legally registered

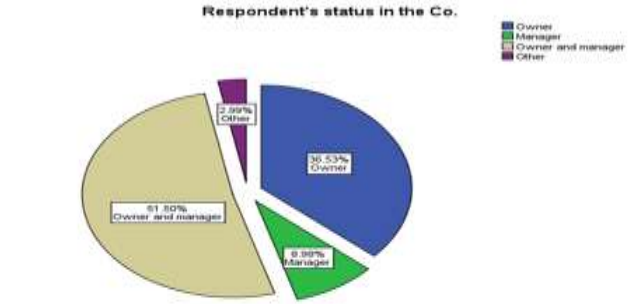
		F	%	Valid %	Cum. %
Valid	<1 yr	71	42.3	42.5	42.5
	1 to 2 yrs	34	20.2	20.4	62.9
	3 to 4 yrs	33	19.6	19.8	82.6
	5 yrs	11	6.5	6.6	89.2
	6 to 7 yrs	8	4.8	4.8	94.0
	> 7 yrs	10	6.0	6.0	100.0
	Total	167	99.4	100.0	
Missing	System	1	.6		
Total		168	100.0		

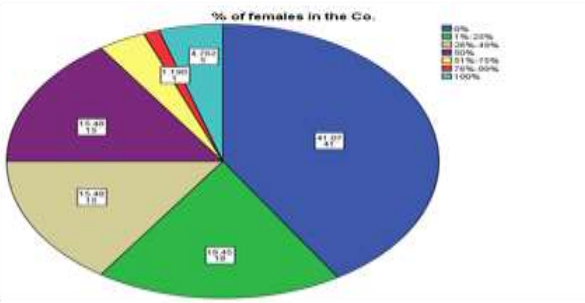
The largest proportion (42%) of the firms have been in operation for less than one year, followed by those firms in operation from 1 to 2 years (20%), and from3 to 4 years (19.6%), respectively. Only 11 % of the

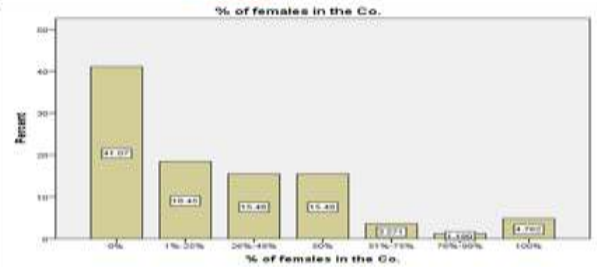
firms were in business for 5 years. The sample size from these four groups is 90%, which aligns with the legal definition of SUs in the drafted proclamation. Only 10% of the respondents have been in operation for more than 6 years.

Although profitability of startups differs from sector/innovation to sector/innovation, it is fact that many startups operate for years before making profit. It was evident from the qualitative analysis that even those innovative firms operating in the technology sector for a decade still consider themselves as 'startups'. There may be a need to reconsider the startup labelling period of the drafted startup act and innovation fund proclamation to 10 years as it is eveident in Nigeria, Spain and India, and 8 years in Tunisia, for example.









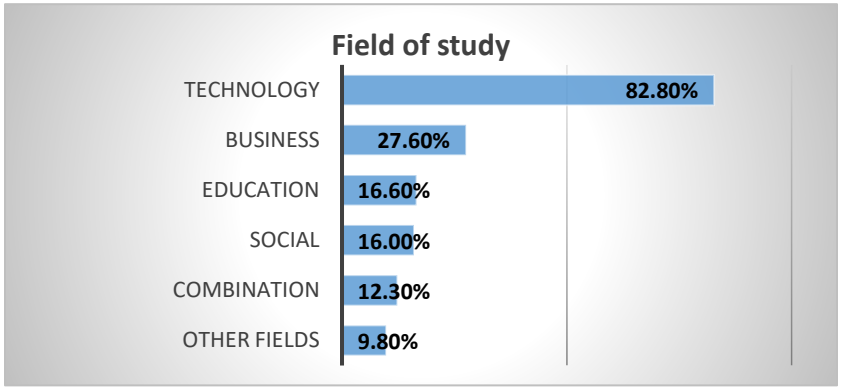
Form of business ownership: Of all the companies which indicated the form of ownership of their company, only 3% of them are incorporated ones (i.e., corporations which may issue shares to the public in open market). Although those companies which are formed as private limited companies (PLCs) are also named incorporated form of business, they are owned by a couple of owners who are usually group of innovators (source: qualitative data). Despite the fact that the introduction of the new commercial law which allows one-man PLC (new Commercial Code of Ethiopia Proclamation No 1243/2021), this form of ownership is not yet under implementation. A couple of respondents could also identify their business as one-man PLC which was later verified as sole proprietors through interviews. The pie-chart on the right depicts as there were equal number of participants from firms which were sole proprietors and PLCs, each accounted one-fourth of the total respondents. Thus, about half of the respondents are either sole proprietors or PLCs.

The ownership classification is necessary since it also indicates the vision and commitment of the startups in growing their firms by transforming into corporate form of business ownership, which will have better potential for growth. However, from anecdotal observation, most of the sole proprietorship form of businesses are one-man show companies. This happens because most SU have difficulty of pooling experts and fund which were vital for the growth of their SU firms.

Age of founder/s

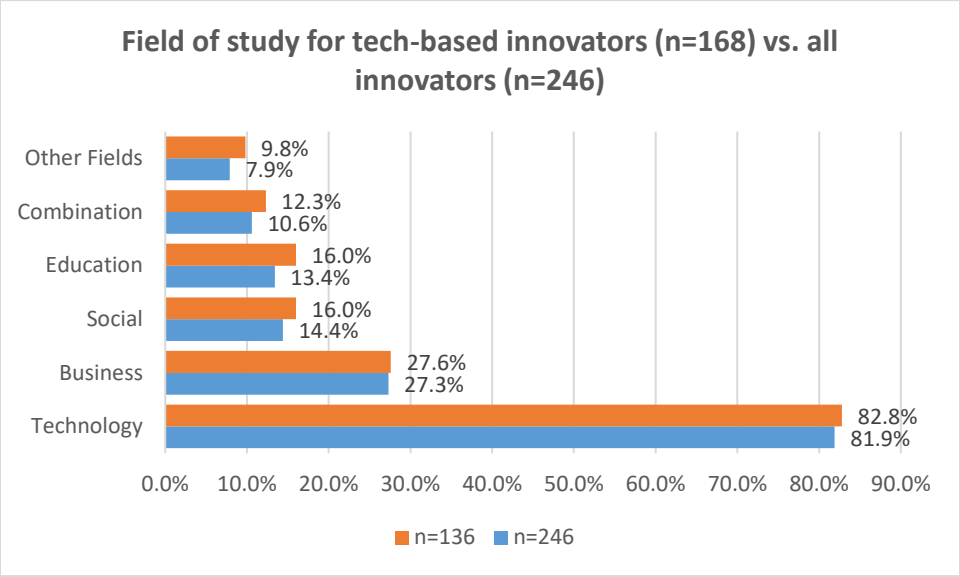
		F	%	Valid %	Cum. %
Valid	Below 18 years	2	1.2	1.3	1.3
	18 - 25 years	35	20.8	22.7	24.0
	26 - 30 years	56	33.3	36.4	60.4
	31 - 39 years	47	28.0	30.5	90.9
	40 - 50 years	8	4.8	5.2	96.1
	> 50 years	6	3.6	3.9	100.0
	Total	154	91.7	100.0	
Missing	System	14	8.3		
Total		168	100.0		

Age of the startuppers: Age is one factor considered in this study. It aims at identifying the major age group engaged in technology-driven products/services. Not less than 60% of the founder/s of the startup (person/s with innovative business idea) had the age of below 31 years. Of course, 28% of the startuppers were found in the age range of 31 to 39 years, who are in middle ages. Only 8% of the startuppers were above 39. This indicates that most innovtions are initiatives and works of the youth.



Field and level of education of the respondents: Since it was possible to get responses to the questionnaires from almost all the owners or owner-managers and contacted innovators, the education level and field of study demonstrates the composition of the startuppers.

To make analysis of the SUs' in term of their level and filed of education, percentage of cases are used in that two or more of the startups might have indicated their level or field of education for each shareholder and then this rating is counted to calculate the percentages.



Education Level Frequencies

It is possible to observe that about half of them completed their first degree while ¼ of them had completed their second degree. One-fifth of the respondents had obtained their diploma or completed TVET levels education.

Rights Frequencies

		Responses		% of Cases
		N	%	
Registered rights	Patent	33	19.3%	20.0%
	Copy right	4	2.3%	2.4%
	Trade mark	9	5.3%	5.5%
	In-process	28	16.4%	17.0%
	No right (not yet)	97	56.7%	58.8%
Total		171	100.0%	103.6%

Innovation right registration: One issue that affects the development of the innovative and startup ES is the registration of rights and the benefits that may result out of the rights for the innovations. Although participants were asked to mention any of these rights for their innovative ideas/product (patents/Copyrights/Trademarks), the registration of patent rights and copy rights are taken for this analysis. Percentage of cases that were provided for the multiple response items results as majority of them did not obtain their offerings which were claimed by most of them were 'innovative'. To make a crude analysis of

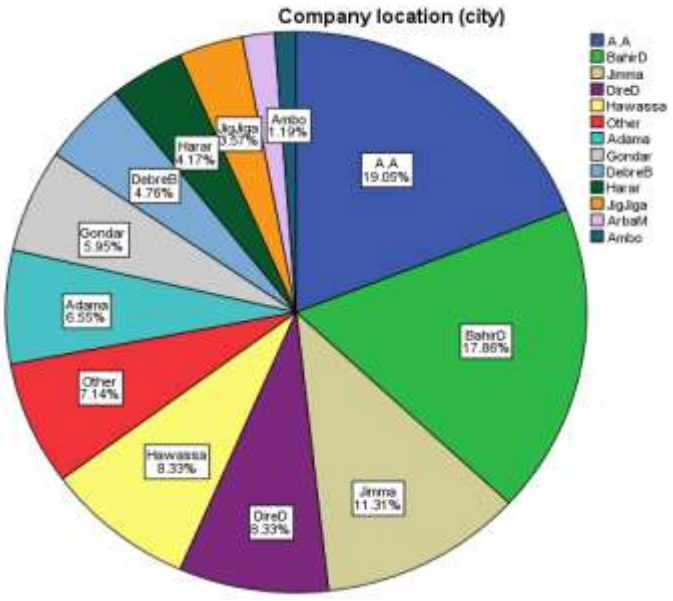
the responses for this multiple response item, participants were also asked to provide brief description of their innovations. This was also made to make appropriate mapping of the startups.

It is possible to find ¼ of the cases selected for this item with patent rights while 17% of the cases witnessed as they were in process of obtaining it. Analysis of this response will be made in conjunction of the qualitative findings which may have implications on the ES which can be related to providing loans by use of rights (IP) as a possible means of the financing challenges of the SUs in the future ES.

3.1.1 Based on location/distribution/density

City and respondent distribution: It is necessary to remind here the sampling approach the study employed to reach the potential respondents/startups. The study used census and snow ball sampling to reach all potential startups which are defined for the study's purpose. As can be seen from the pie-chart, there is uneven distribution or existence of startups in the sampled cities (most of them are regional cities), where more most of the startups are concentrated in the capital city (Addis Ababa). This concentration has also resulted because, as also noted by not a few startups, startups that are thriving to realize their business idea usually move to the capital city for different reasons, such as larger customer base, target markets, availability of better financing and growth option, digital facilities, better networking with local and foreign partners and even to get better support services. Furthermore, as will be discussed in the upcoming findings, most startups in the regional cities are innovations in ag-tech when compared to those operating in the capital city.

This section provides startuppers' personal and subject firms' background information.



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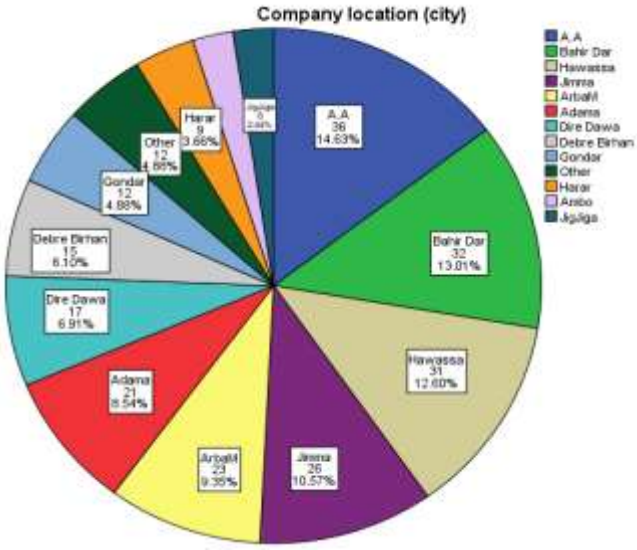
they move for better growth options. Furthermore, as will be discussed in the upcoming findings, most startups in the regional cities are innovations in ag-tech when compared to those operating in the capital city.

The above 168 respondents are used for the project purpose and are ICT-based startups while the 246 respondents (see pie-chart on the right) are representing all startups or startuppers having overall technological innovation which may not be an ICT-based innovation.

In Kenya, innovation ESs are concentrated in urban areas, with many of the initiatives being run independently. There is therefore a risk of duplication and saturation of focus on the efforts being applied (UNDP, 2022). Similar pattern is observed here in Ethiopia's startup distribution/density. The results indicate as much has remained in building the ES in the cities found outside of the capital which obviously have policy implications which are explained in the later sections.



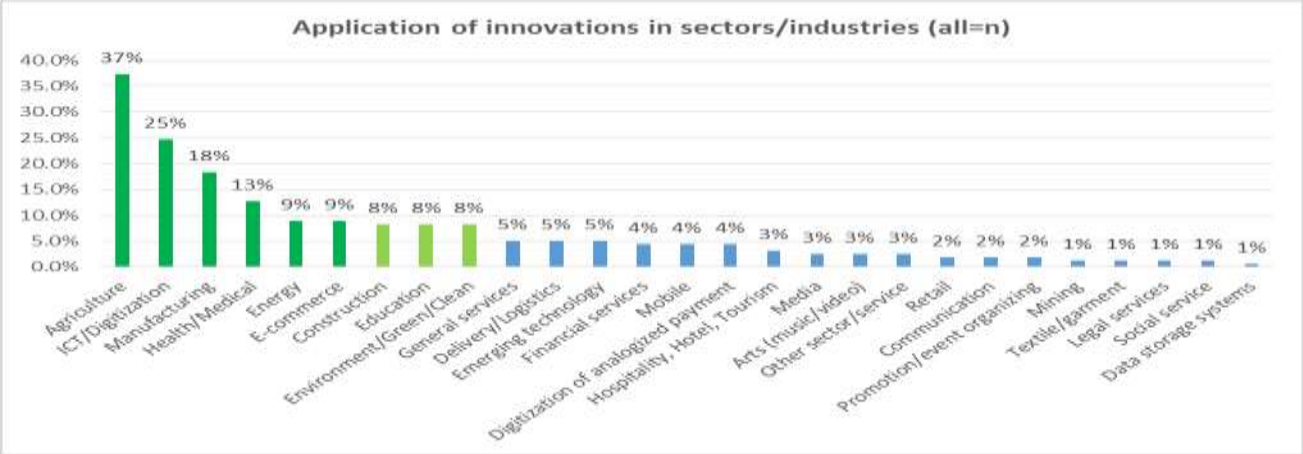
3.1.2Based on sectors/industry/ Areas of applications of the innovations

This section discusses the sector/industry in which the SUs are operating or offering their innovations to serve a particular sector/industry. This categorization is also used to map the startups in terms of these industries or their classification of innovations.

Categorization of sectors of innovative products/services of the startups can further be explained based on location, growth stage of the startup project/firm, status of registration, right ownership, finance raising/growth needs and among the female-owned vs. male-owned businesses and/or innovations.

It should be noted that an innovation might serve a number of industries/sectors and/or solve different problems. Thus, participants were given a chance to choose more than one sector or the industry their offerings would serve among the long list options.

Sector engagement of the innovation: The following graph illustrates the list of innovations in the different sectors. Frequencies of responses show as most applications of the innovations are found in the first six sectors involving agriculture, ICT/digitization, manufacturing, health/medical, energy and e-commerce. Equally, applications in constructions, education and environment and/or cleantech are also following by 8% of the selected cases.



The above graph is for the whole sample n=168. However, it is also interesting to see whether there existed differences between the startups' innovative offerings of those from A.A and from the regional cities.

Sectors/innovations in different bases on analysis: Categorization of sectors of innovative products/services of the startups can further be explained based on location (A.A vs. other cities), growth stage of the startup project/firm, status of registration, right ownership and among the female-owned vs. male-owned businesses and/or innovations. The major bases of categorization that can help to make informed decisions are presented below.

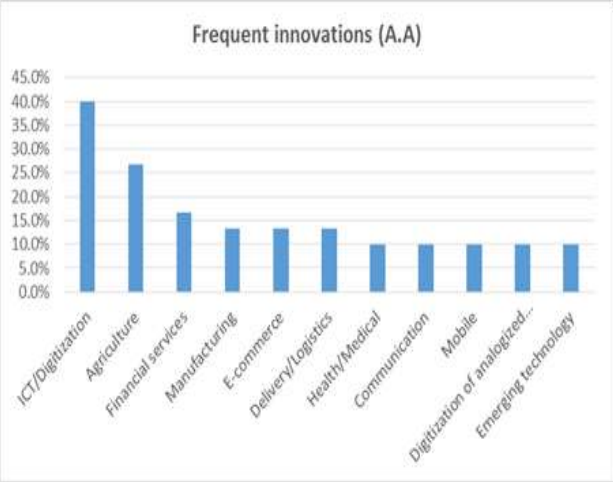
Innovations by sector for A.A SUs vs. other cities' SUs: The table below lists the innovations made by the SUs as categorized for A.A and the other cities. Agriculture is found to be the leading application of the innovation in the regional cities while ICT/digitization of operations/process/methods is the most introduced use of application by A.A SUs. Of the sampled 32 SUs, Agriculture and Financial services are the two common innovators introduced by the SUs operating in A.A. Equal numbers of cases are also found in Manufacturing, E-commerce and Delivery/Logistics innovations/sectors.

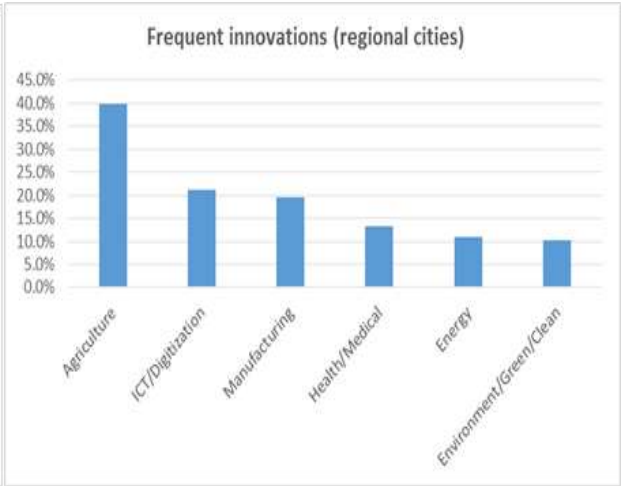
As all the rest cities, which are above 13 are used for the second category (i.e., other cities), a good number of innovations are intending to serve sectors or innovations in Agriculture, ICT/Digitization and Manufacturing. Comparisons of results from the categories of cities, A.A and the other cities, clearly shows that SUs operating in the other cities are inclined to innovate in the agriculture sector.

As can also be learned from the analysis made from secondary sources, SUs operating in delivery/logistics are fast emerging applications/services in A.A. whereas, analysis of response cases for the other cities places this innovation found at the 12th rank for the regional cities. Unlike the 5 innovations provided by SUs from A.A., only 2 innovations on the financial services are also mentioned by participant SUs from the regional cities.

Table 4: Sector/industry of the innovative product/service (A.A vs. Other Cities)

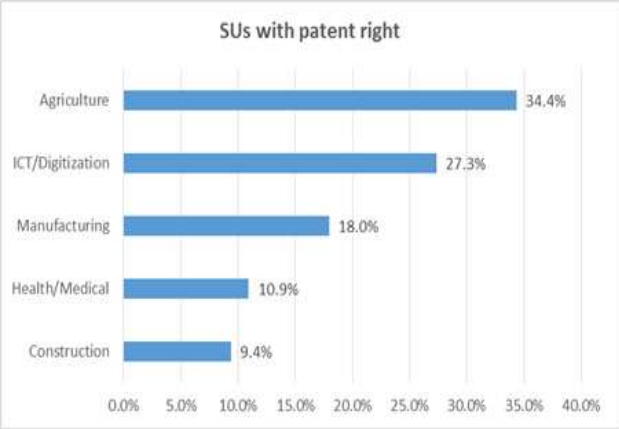
A.A	N	%	% of Cases	Other cities	N	%	% of Cases
ICT/Digitization	12	17.60%	40.00%	Agriculture	51	22.60%	39.80%
Agriculture	8	11.80%	26.70%	ICT/Digitization	27	11.90%	21.10%
Financial services	5	7.40%	16.70%	Manufacturing	25	11.10%	19.50%
Manufacturing	4	5.90%	13.30%	Health/Medical	17	7.50%	13.30%
E-commerce	4	5.90%	13.30%	Energy	14	6.20%	10.90%
Delivery/Logistics	4	5.90%	13.30%	Environment/Green/Clean	13	5.80%	10.20%
Health/Medical	3	4.40%	10.00%	Construction	12	5.30%	9.40%
Communication	3	4.40%	10.00%	Education	11	4.90%	8.60%
Mobile	3	4.40%	10.00%	E-commerce	10	4.40%	7.80%
Digitization of analogized payment	3	4.40%	10.00%	General services	6	2.70%	4.70%
Emerging technology	3	4.40%	10.00%	Hospitality, Hotel, Tourism	4	1.80%	3.10%
General services	2	2.90%	6.70%	Delivery/Logistics	4	1.80%	3.10%
Media	2	2.90%	6.70%	Mobile	4	1.80%	3.10%
Education	2	2.90%	6.70%	Digitization of analogized payment	4	1.80%	3.10%
Promotion/event organizing	2	2.90%	6.70%	Retail	3	1.30%	2.30%
Social service	2	2.90%	6.70%	Arts (music/video)	3	1.30%	2.30%
Construction	1	1.50%	3.30%	Financial services	2	0.90%	1.60%
Hospitality, Hotel, Tourism	1	1.50%	3.30%	Media	2	0.90%	1.60%
Mining	1	1.50%	3.30%	Legal services	2	0.90%	1.60%
Textile/garment	1	1.50%	3.30%	Mining	1	0.40%	0.80%
Arts (music/video)	1	1.50%	3.30%	Textile/garment	1	0.40%	0.80%
Data storage systems	1	1.50%	3.30%	Promotion/event organizing	1	0.40%	0.80%
Total	68	100.0 %	226.7%	Total	226	100.0 %	176.6%

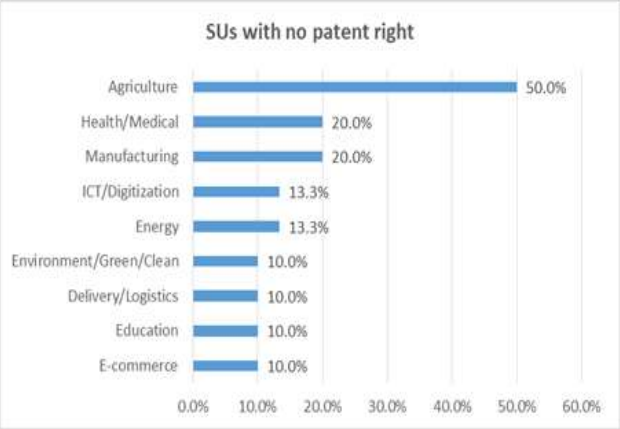




There may also be interest to see what common innovations do have registration of rights and which of the frequent innovations do not have rights (IP). Previous discussions indicated as 28 or 17% of the SUs witnessed as they were in the process of registering their innovation in the IPO and 33 of the total 168 SUs already obtained rights for their innovations. Those who already obtained their rights had offered products/services are mostly found in the agriculture, health/medical, manufacturing, ICT/digitization and energy sectors. Those who have not obtained or applied to obtain rights have also the highest proportion of innovations in the same sectors except the energy (for patented) and the construction (for non-patented) sectors.

Innovations by sector for patented US vs. non-patented SUs





3.1.3 Based on growth stages of the startups

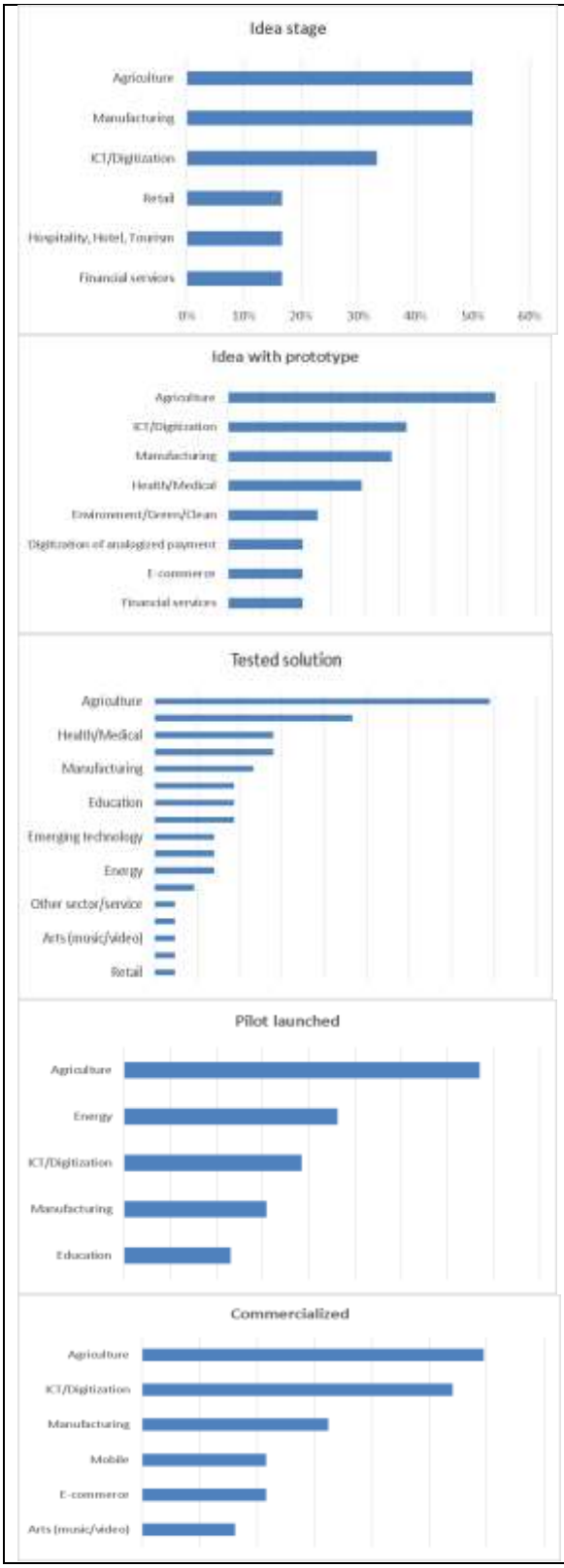
In this section, the mapping of the sampled startups based on their growth stages and based on their fund need stages. These mapping bases can also be used to see which startups in each growth stages are operating in a specific industry/sector or their innovation offerings to a specific sector or multiple sectors. Further, as same question was presented to the ESBs, the growth stage categorization bases are used to classify the type of startups or clients that the ESBs are admitting and/or providing support services.

Mapping of the startups based on their growth stages: The three highest identified growth stages of the SUs or projects are found at idea with prototype, tested solution and already launched/commercialized with 28.6%, 25.6% and 24.4%, respectively. About 17% of the SUs identified themselves as hey already launched their piloted products/services. Only 6 or 3.6% of the respondents were SUs with ideas only.

		Company location (city)			
		A.A		Other cities	
		F	%	F	%
Stage of the startup project/firm	Idea	1	3.1%	5	3.7%
	Idea with prototype	10	31.3%	38	28.1%
	Tested solution	2	6.3%	41	30.4%
	Pilot launched	8	25.0%	21	15.6%
	Launched/commercialized	11	34.4%	30	22.2%
Total (1 missing response)		32	100.10%	135	100.00%

Mapping of the startups based on their growth stages and further between startups of A.A and startups of the other cities reveals as the largest proportion of the startups have already launched or commercialized their products/services (34%), while the largest proportion of startups from the other regions have tested their products for solutions (30%). The disparity on the stages of the startups in the other growth stages/levels also indicates, as more support is needed to those startups operating in the regions.

Categorization of sectors of innovative products/services based on growth stage: The graphs and the corresponding tables below illustrate categorization of sectors of innovative products/services based on growth stage of the startup project/firm.



Categorization of sectors of innovative products/services based on growth stage		Responses N	%	% of Cases
Idea	Manufacturing	3	27.3%	50.0%
	Agriculture	3	27.3%	50.0%
	ICT/Digitization	2	18.2%	33.3%
	Financial services	1	9.1%	16.7%
	Hospitality, Hotel, Tourism	1	9.1%	16.7%
	Retail	1	9.1%	16.7%
Total		11	100.0%	183.3%
Idea with prototype	Agriculture	18	19.1%	39.1%
	ICT/Digitization	12	12.8%	26.1%
	Manufacturing	11	11.7%	23.9%
	Health/Medical	9	9.6%	19.6%
	Environment/Green/Clean	6	6.4%	13.0%
	Financial services	5	5.3%	10.9%
	E-commerce	5	5.3%	10.9%
	Digitization of analogized payment	5	5.3%	10.9%
Total		94	100.0%	204.3%
Tested solution	Agriculture	17	23.6%	39.5%
	ICT/Digitization	10	13.9%	23.3%
	Construction	6	8.3%	14.0%
	Health/Medical	6	8.3%	14.0%
	Manufacturing	5	6.9%	11.6%
	E-commerce	4	5.6%	9.3%
	Education	4	5.6%	9.3%
	Environment/Green/Clean	4	5.6%	9.3%
Total		72	100.0%	167.4%
Pilot launched	Agriculture	10	22.2%	38.5%
	Energy	6	13.3%	23.1%
	ICT/Digitization	5	11.1%	19.2%
	Manufacturing	4	8.9%	15.4%
	Education	3	6.7%	11.5%
Total		45	100.0%	173.1%
Already launched/ commercialized	Agriculture	11	15.3%	29.7%
	ICT/Digitization	10	13.9%	27.0%
	Manufacturing	6	8.3%	16.2%
	E-commerce	4	5.6%	10.8%
	Mobile	4	5.6%	10.8%
Total		72	100.0%	194.6%

a. Dichotomy group tabulated at value 1.

% of females in the Co.

		F	%	Valid %	Cum. %
Valid	0%	69	41.1	41.1	41.1
	1%-25%	31	18.5	18.5	59.5
	26%-49%	26	15.5	15.5	75.0
	50%	26	15.5	15.5	90.5
	51%-75%	6	3.6	3.6	94.0
	76%-99%	2	1.2	1.2	95.2
	100%	8	4.8	4.8	100.0
	Total	168	100.0	100.0	

Most innovations made by SU found at the idea stage and are found respectively in agriculture, manufacturing, ICT/digitization, and retail sectors. Most innovations with ideas with prototypes are found respectively in Agriculture, ICT/Digitization, Manufacturing, Health/Medical, Environment/Green/Cleantech, Financial services, E-commerce and Digitization of analogized payment. These prototypes can be potential products/services which can be introduced in the market if the SU can get the right supports and financing. This finding will be elaborated in the qualitative findings. Similarly, innovations in Agriculture, ICT/Digitization, Construction, Health/Medical, Manufacturing, E-commerce, Education and Environment/Green/Clean are already tested solution as mentioned by the SUs.

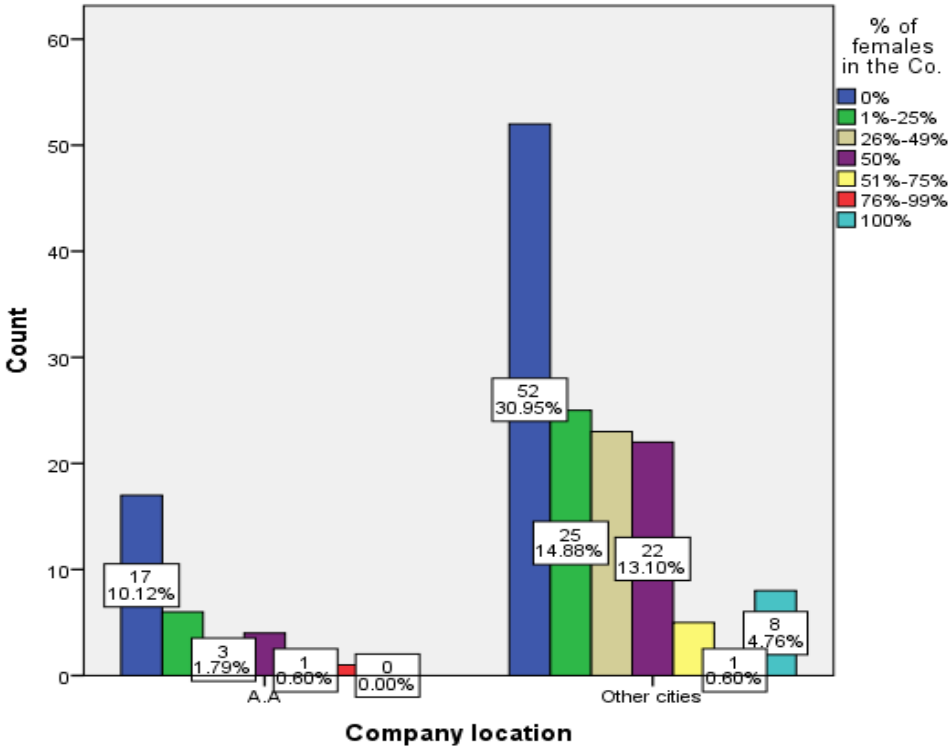
Most innovations, which were already piloted for commercialization, are found in the following five sectors: Agriculture, Energy, ICT/Digitization, Manufacturing and Education. The startups which already commercialized their innovations in the Agriculture, ICT/Digitization, Manufacturing, E-commerce and Mobile applications.

It is also good to see the sectors which have reached to selling their equity o local and foreign investors. Those SUs going out for 'IPO' in the unstructured financing market are operating in or have offerings for the following sectors/industries: Agriculture, Manufacturing, General services, E-commerce, Education, Hospitality, Hotel, Tourism, Energy, ICT/Digitization, Health/Medical and Mobile.

3.1.4 Based on sex of ownership

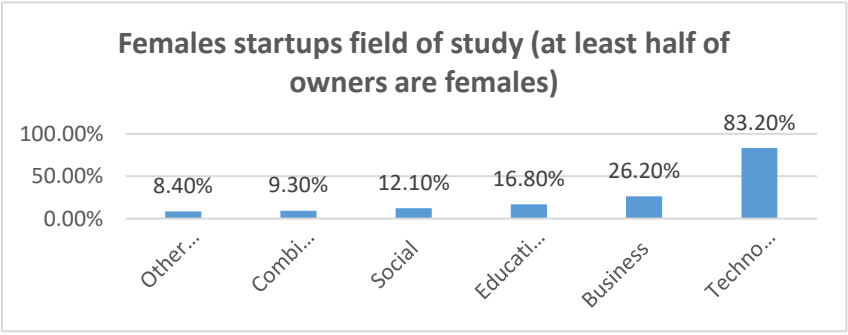
Proportion of women shareholders/owners in the business: For similar reason given for the project's objectives, attempt was also made to find women-owned startups exhaustively. Nevertheless, it was possible to find about 15% the startups that involved or formed by half female shareholders. The largest proportion (41%) of the startups were entirely owned by male shareholders. Only 5% of the startups were owned by females entirely.

Comparison of female owners' composition is also made between the SUs found in A.A and in the other cities. While 25% of the SUs from A.A had no women shareholders/partners, 75% of the SUs from the other cities had no women shareholders/partners. Nevertheless, those 8 entirely owned female SUs were from the other cities. The results indicate as much has to be made to attract and involve good number of potential female startups in the ES.



To make compared analysis between the responses of male vs women-owned startups/respondents, only cases/startups which are entirely owned by males and startups which are owned by at least 50% of females are selected. By doing this, it is possible to get 69 startups, which are entirely owned by men, and 42 startups which are owned by at least 50% of females. Thus, the analysis on this section also uses this data (i.e., case selection in SPSS for ≥ 50% female-owned startups=26; 51%-75% female owners=6; 76%-99% female owners=2; 100% female owners=8). It is important to remind the reader that the samples taken for this analysis are ICT-based female innovators.

Quite same result patters exit for the female owned startups as regards to their education background, which listed sequentially Technology, Business, Social, Education, Combination and Other Fields. Like their male counterparts, it is clear that the females in the technology innovation are influenced by their education preparedness. It can be inferred that female innovators' education background directly influences the creativity and innovation of female startups. This result further indicates the need to involve more girls in the science and technology education.

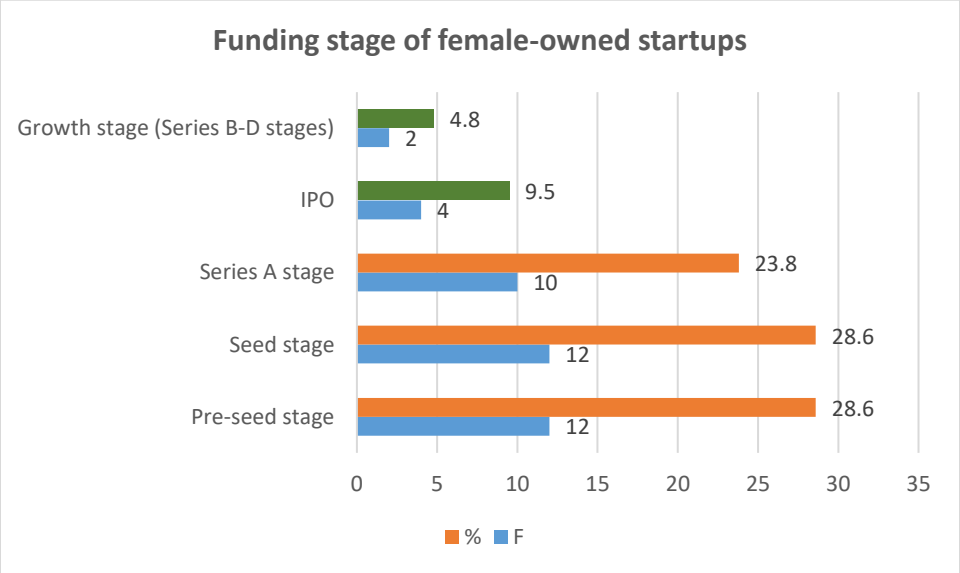


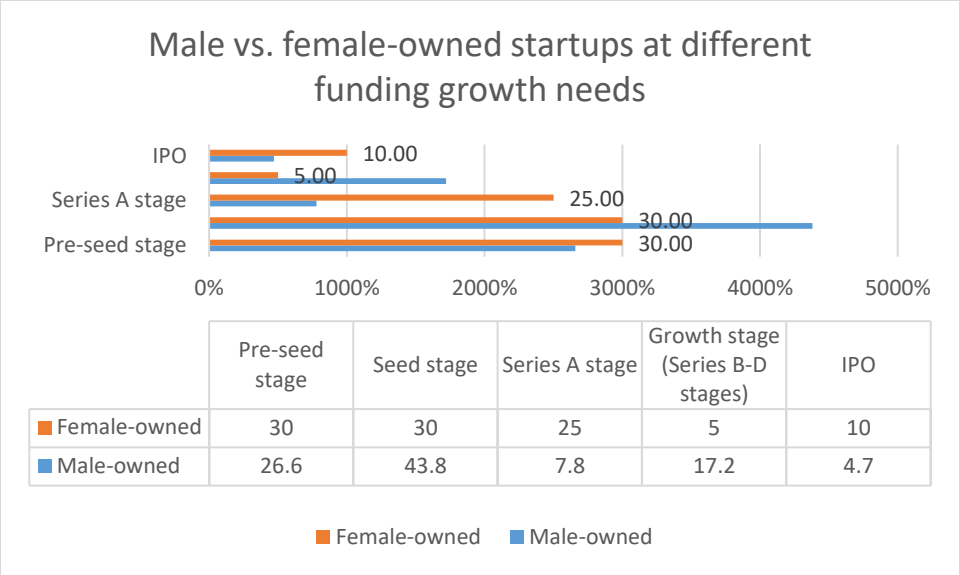
Gender-wise comparison of funding needs: In terms of the financing needs of the women owned startups, in total, 85% of them are found either at Pre-seed stage (30%), Seed stage (30%) or Series A stage (25%).

Startup lifecycle stage

% of females in the Co.			F	%	Valid %	Cum %
Male-owned	Valid	Seed stage	28	40.6	43.8	43.8
		Pre-seed stage	17	24.6	26.6	70.3
		Growth stage (Series B-D stages)	11	15.9	17.2	87.5
		Series A stage	5	7.2	7.8	95.3
		IPO	3	4.3	4.7	100.0
		Total	64	92.8	100.0	
	Missing	Not in any of the above	3	4.3		
		System	2	2.9		
		Total	5	7.2		
	Total		69	100.0		
Half or above female-owned	Valid	Pre-seed stage	12	28.6	30.0	30.0
		Seed stage	12	28.6	30.0	60.0
		Series A stage	10	23.8	25.0	85.0
		IPO	4	9.5	10.0	95.0
		Growth stage (Series B-D stages)	2	4.8	5.0	100.0
		Total	40	95.2	100.0	
	Missing	Not in any of the above	2	4.8		
	Total		42	100.0		

Comparing male-owned vs. female-owned startups, startups which are entirely owned by male are in a better growth stages than their female counterparts.





	Pre-seed stage	Seed stage	Series A stage	Growth stage (Series B-D stages)	IPO
Female-owned	30	30	25	5	10
Male-owned	26.6	43.8	7.8	17.2	4.7

Men- vs. female-owned sectors of engagement: The table below shows the multiple response case selections for sectors of innovations for only male-owned startups and for startups in which at least half of the owners are female. The men-owned startups are largely engaged in ICT/Digitization (25%), Agriculture (24%), Manufacturing (16%), E-commerce (11%), Energy and Health/Medical (equally 9.5%), Construction and Education (equally 8%). Sectors of the startups in which at least half of them are female owners, are engaged in Agriculture (50.0%), ICT/Digitization (22.5%), Health/Medical (20%), Manufacturing (15%) and Education (12%). These results indicate that, proportionally, females are more engaged in agriculture-focused innovaions than males. Besides, sex-based comparisons reveal that females are engaged in education and health/medical sectors than their male counterparts.

Sectors for only male-owned startups	Responses		% of Cases	Sectors for at least half of them female-owned startups	Responses		% of Cases
	N	%			N	%	
ICT/Digitization	16	14.8%	25.4%	Agriculture	20	26.0%	50.0%
Agriculture	15	13.9%	23.8%	ICT/Digitization	9	11.7%	22.5%
Manufacturing	10	9.3%	15.9%	Health/Medical	8	10.4%	20.0%
E-commerce	7	6.5%	11.1%	Manufacturing	6	7.8%	15.0%
Energy	6	5.6%	9.5%	Education	5	6.5%	12.5%
Health/Medical	6	5.6%	9.5%	General services	4	5.2%	10.0%
Construction	5	4.6%	7.9%	E-commerce	4	5.2%	10.0%
Education	5	4.6%	7.9%	Environment/Green/Clean	4	5.2%	10.0%
Delivery/Logistics	4	3.7%	6.3%	Construction	2	2.6%	5.0%
Emerging technology	4	3.7%	6.3%	Hospitality, Hotel, Tourism	2	2.6%	5.0%
Other sector/service	4	3.7%	6.3%	Energy	2	2.6%	5.0%
Financial services	3	2.8%	4.8%	Mining	2	2.6%	5.0%
Mobile	3	2.8%	4.8%	Delivery/Logistics	2	2.6%	5.0%
Arts (music/video)	3	2.8%	4.8%	Mobile	2	2.6%	5.0%
Hospitality, Hotel, Tourism	2	1.9%	3.2%	Financial services	1	1.3%	2.5%
Media	2	1.9%	3.2%	Retail	1	1.3%	2.5%
Environment/Green/Clean	2	1.9%	3.2%	Social service	1	1.3%	2.5%
Communication	2	1.9%	3.2%	Digitization of analogized payment	1	1.3%	2.5%
Promotion/event organizing	2	1.9%	3.2%	Emerging technology	1	1.3%	2.5%
Digitization of analogized payment	2	1.9%	3.2%				
General services	1	.9%	1.6%				
Textile/garment	1	.9%	1.6%				
Legal services	1	.9%	1.6%				

Social service	1	.9%	1.6%				
Data storage systems	1	.9%	1.6%				
Total	108	100.0%	171.4%	Total	77	100.0 %	192.5%

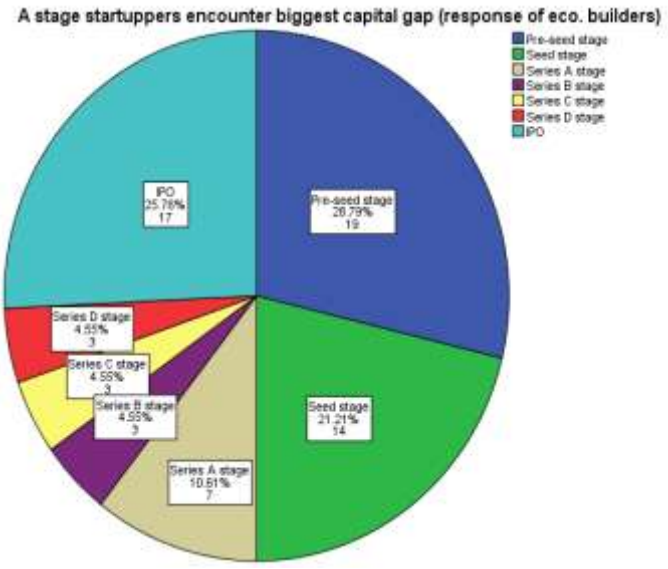
Surprisingly, comparison of the proportion of male-owned SUs with female-owned SUs, the largest number from the female owned SUs are engaged in agriculture than the male-owned SUs who are engaged in the sector. The proportion of sectors reveal as sector proportion made by sex shows as more proportion of women-owned SUs found in the agriculture sector than the those men-owned SUs engaged in this sector. Results are implying that there are high chances to bring women startups on board to the customarily said 'male-dominated' sectors with reasonable support.

3.2 Finance, financing and Funding ES

Availability of financiers: Startups in general have few options to get their start-ups funded. Diversifying the sources of financing allows startups to improve their business and diversify potential risks as well as improve the chances of getting the required amount of fund to meet their specific financial needs. Generally, startups may use various financing alternatives such as bank loan, loan from micro finances, angel investors, grants, etc. but all these are inadequate since they cannot provide/grant the required/requested funds to the startups and are not equally available to all startups found at all cities and if available, the financing (mainly loan) products are limited to use because they have few and traditional loan products which are presented with different requirements (such as collateral) and bound by rigid financing regulations. Some startups claim that they use their own income to fund their operation and also they insist that raising a fund to start and running a business is a challenging issue for them.

In the present ES, it is difficult to get equity financing. Specialized investors are rare, and banks are not geared towards the needs of start-ups. There is a limited investment to capitalize on potential projects.

Support institutions (incubators, accelerators, co-working and maker space providers, fund catalysts, networking service providers) were presented to reflect from their observation/communication of their tenants/clients the stage at which most startups were encountering sever capital shortage.



As can be referred from the pie-chart still most of the admitted startups had encountered capital gaps in two funding need stages, which were Pre-seed stage when they were trying to get funding for their innovative business idea (29%) and while they were desiring to mature their business by selling to the general public (though there is no a capital market that can rate business to go out for initial public offering).

These results indicate the need to find ways and solve the challenges of early stage financing. If the government is serious in building the startup ES of the nation, the first strategic intervention will be availing finance to the startups and solving the barriers that hamper investment in startups by both financial institutions and investors (local and foreign).

Financing female startups

While access to finance is challenging for all type of startups, most of the discussants point to that the problem is far more acute for female entrepreneurs. Banks, already hesitant about lending to startups, are even more hesitant to lend to female-owned enterprises. Credit officers often have an unseemly and biased anticipation that women will have a divided level of commitment to the venture.

Idea financing by DBE: Understanding the limitations of the present loan products to the startups, DBE, in consultation with MInT has introduced a new non-collateral loan with an innovative option of equity financing recently so that startuppers with innovative and commercializable products/services/process methods can get finance for their ideas—idea financing!

Government ES components

		F	%	Valid %	Cum %
Valid	Low	90	53.6	58.4	58.4
	Medium	49	29.2	31.8	90.3
	High	15	8.9	9.7	100.0
	Total	154	91.7	100.0	
Missing	Do not know	10	6.0		
	System	4	2.4		
	Total	14	8.3		
Total		168	100.0		

3.3 Government ES (support, policy & legal infrastructure)

Overall rating on the support provided by the government (including legal and policy incentives) was rated as low by 54% of the respondents. Analysis of variance or mean response comparison also reveals, as there is insignificant difference ($p>0.5$) among the responses of startups found at different stages.

Ecosystem support services or supporting institutions

		F	%	Valid %	Cum. %
Valid	Low	94	56.0	60.6	60.6
	Medium	46	27.4	29.7	90.3
	High	15	8.9	9.7	100.0
	Total	155	92.3	100.0	
Missing	Do not know	9	5.4		
	System	4	2.4		
	Total	13	7.7		
Total		168	100.0		

3.4 Support institutions/ecosystem builders

Ecosystem builders pointed out various challenges of the ES and the critical ones are: shortage of fund, grant, facilities and equipment to give appropriate service for startups; problems of working space and land to give incubation and accelerator service; promoting, marketing startups' services; collaboration problems among the major actors of the ES; lack of supporting capacity building service; lack of technical personnel to mentor and follow-up the incubators as well as the low number of the female participation in incubation and acceleration centers.

As a weighted summary factor for the 10 support institution issues/variables, respondents were also asked to provide their opinion on the effects of selected factors on the ES and on their services. Overall rating on the availability of support institutions/ESBs was rated as low by 61% of the respondents, medium by 30% of the respondents. Only 10% of replied as 'high'.

3.5 Markets and marketing (scale up & expansion)

Markets and promotion issues: Lack of access to market and the challenge of creating awareness among the users or customers about the product and service offered by startups are the real challenges which are being observed in the ES. Those startups, who participated in the study, mentioned that they struggle to establish an effective distribution network at early stage of their business. Moreover, promoting their innovative product or service and finding a right supplier during an early-stage of the startups are the other major marketing related challenges mentioned by the participants of the study.

Public procurement: According to almost all respondents, the public procurement practice is one of the challenges in providing priorities to material suppliers for startups when they develop their prototypes in incubation and acceleration centers. The respondents further suggested that the government should take into account pressing issues of startups in the existing procurement regulation to ease the process of procuring materials for startups and let them use the materials to advance their business ideas. They also suggested that there is a call for an urgent government support to startups in various areas such as market linkage and also provision of fund for commercialization and marketing.

Networking issues: Almost all startups, who participated in the study, stated that they are not working with different institutions which have the capacity of promoting and creating a market linkage for the startups, but they have some relationships with higher education institutions which provide support services. Moreover, the startups have a problem of promoting and commercializing their product or services to target customers.

3.6 Digital and other infrastructure ES

Incubation and technological centers like the national science museum, ICT parks, innovation centers now working to nurture startuppers. In addition, the emergence of digital financing and payment is a good start to finance various startups, but in the context of Ethiopia, this scheme requires a legal framework and proper implementation.

With access to the Internet, small businesses can now compete with big brands via social media engagement, clever online marketing, and efficiently delivered advertising. Even in markets where there is a mismatch between available capital and the startup community, an entrepreneur can raise money by crowdsourcing from the public. Rather than leasing an expensive office, a startup can find a home in a local co-working space and often outsource functions. Digital practices such as Digital/national ID, digital payment, digital financing, e-trade, one-stop service facilitating ease of doing business to the startups.

3.7 Human Capital and Capacity Building

In a growing economy such as Ethiopia's, there is a need for advanced STEMpower. However, there are challenges that hamper its proper application and utilization.

- Current STEMpower is rooted largely in Western history and culture with a pedagogical focus on achieving transformative impacts through creativity, innovation and problem solving, which does not fit with the Ethiopian pedagogical focus on rote memorization and recall goal.
- There is a mismatch between what is needed and what is taking place in terms of STEMpower, as a consequence of an emphasis on content transmission in the training of teachers at the expense of the pedagogic training in the skills required to teach science and mathematics.

- There is weak overall organization to ensure that STEMpower is seen by students as natural, relevant, fun to learn and attractive. STEMpower is dominated by explanatory and prescriptive pedagogy focused on transformative rules and formulas, undermining innovation and creativity.
- Large class sizes, unequipped laboratories and poorly written manuals and guidelines that do not support innovation and creativity.
- There is a budget shortage for purchasing experimental resources, funding fieldtrips, etc.
- There is an absence of extracurricular activities such as zoos, science centres, museums and children's centres, which would allow students to put puzzles together, listen to lectures, play games, watch videos, etc.
- There is a lack of research-based STEMpower learning opportunities.

Competent human capital and a special attention given to building the capacity of startups play a great role in startup ES development. The findings of the study reveal that many of startups have educational qualifications which vary between TVET certificate/diploma to third degree. As the study findings indicate, many of startups in different regional cities require capacity building trainings as they have a serious gap in soft skill and other areas. It is observed that trainings are required in some areas such as pitching their innovative idea, preparing feasibility study and business plan as well as creating market linkage, etc

3.8 Social-Cultural Ecosystem

The challenges of startup ES are also related to the cultural and societal issues. According to some startups, at the beginning, many of startups are not recognized and appreciated by community at large as the society and close relatives do not patiently wait for the benefit of startup business which can be achieved in the long run. Startups are appreciated by the society once their project ideas start to give monetary benefits. Some members of the community do have the wrong impression of startups' unique ability as the society believe that youths tend to always engage in common businesses only. This predisposition may emerge because of the fact that young innovators do not want to face off real challenges and introduce something unique for the society.

The culture of a society is one of the determinant factors for the growth of startups. Even though the society in general appreciates innovative products and services offered by startups, buying and using local innovative products is still at infant stage according to the startups of different regional cities. Lack of awareness among the society and potential customers about the benefits of products and services mainly offered by ICT-based startups is one of the critical challenges being encountered by startups.

Many of women startups and other participants revealed that there is little attention given to women-startups and women owned business, despite some improvements are being observed. The support of innovation ES is weak and these respondents proposed that if the government and other stakeholders work together, it is possible to nurture hundreds of talented young women and other startuppers who can bring a radical impact in the country's startup ES. In addition, the respondents stated that, women by their very nature have burden, but they are creative and effective in doing their jobs.

There are barriers or challenges which hinder the possibilities of exploring opportunities that create conducive business environment for women startuppers. In addition, many of the respondents stated that the support of innovation ES is weak and also these respondents proposed that if the government and other stakeholders work together, it is possible to nurture hundreds of talented young women and young startuppers who can bring a radical impact in the country's startup ES. According to the Ethiopia development bank- Harar branch manager, the bank is now working on new policies and working procedures which give special attention for women enterprises to support them with minimum equity contributions. For instance, the bank requests other borrowers or customers to deposit at least 20% of the

loan in order to get a loan from the bank, but for female associations or female owned enterprises, this minimum deposit decreases to 15%.

4. Conclusions and Interventions

The discussions on the status of the startup ecosystem in Ethiopia covers various issues for each ecosystem component as well as explain the relationships among the different ecosystem components and the ecosystem actors such as startups, fund providers, ecosystem builders, human capital, government support institutions, etc. The diagnosis shall also illustrate the interdependence among the various actors which contribute for the creation and building of an effective ecosystem.

4.1 Key Findings with policy Implications

The main challenges of the ES mentioned by the respondents include lack of proper regulations, lack of right or skilled manpower (missing the required number of staff with required expertise, experience and skills), venture capital shortage, weak industry linkage, knowledge gaps, lack of creative environment, abandoning startups at seed stages, lack of strong linkage with market, limited coaching service, lack of working space, lack of networking and getting better service providers, lack of sustainable government support and collaboration, lack of materials, market linkage problems, lack of relevant policies supporting startups which operate in different parts of the country. There are also difficulties in public procurement practices in providing priorities to material suppliers for startups and also there is a call from the study participants for a consideration of the existing procurement law to facilitate the procurement of materials and support startups.

Different actors in the ES have responsibilities to discharge in order to overcome the aforementioned challenges as well as different interventions are required to support startups. Creating an all-inclusive system that can bring all relevant actors together may require many resources and the efforts of all. If all stakeholder share their excellences with others, presumably the desired synergy will be established and the startup ES will improve. It is also advisable for MInT and other key actors to create a mechanism to regulate, coordinate, implement their activities appropriately and reduce duplication of efforts.

There is uneven distribution of startups in the sampled 13 cities. Startup density is higher in the capital, which is followed by Bahir Dar, Hawassa and Jimma, in ranking order. Many of the startups operate in Addis Ababa. This concentration is due to the fact that startups which are thriving to realize their business idea usually move to the capital city for different reasons, such as larger customer base, target markets, availability of better financing and growth option, digital facilities, better networking with local and foreign partners and even to get better support services. This calls for appropriate intervention to bridge the unbalanced startup growth across the country.

Availability of finance is important for the success of ecosystems – especially seed and startup investors and business angels who provide financial resources as well as mentoring and advice (’smart financing’) for new startups (Mekong Business Initiative, 2021). Despite the increasing variety and amount of growth capital, unmet demand remains, and many startups face barriers to capital access. The GoE should strive to provide environments in which all entrepreneurs can have equal access to capital. In addition, it seems that the government has not given due concern about the startups and the venture capital industry. Thus, making policy improvements that can attract foreign players to have an active role in the ES. This can be achieved by lifting the existing policy restrictions that limit the participation of foreign actors, specifically VCs. Furthermore, increasing the presence of incubators, accelerators, angel groups, VCs and crowdfunding participants could develop the ecosystem. Therefore, it is important to understand and improve the conditions under which each of these programs can provide the most effective learning opportunities and support system.

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