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Understanding Startups Ecosystem in Kenya: Drivers, Challenges, and Opportunities

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Abstract Over the last 10 years, maturity of the business landscape has unlocked new opportunities in Africa, especially the entry of accelerators, incubators, and other start-up ecosystem players. These organizations are constantly adapting their models to respond to the ever-changing needs of the ventures they support. Therefore, there is need for existing literature to keep abreast with this vitality to strengthen the ecosystems in Kenya. The paper analyses the drivers, challenges and opportunities within the start-up ecosystem in Kenya. The paper is based on cross-sectional and longitudinal designs. Human-centred purposive and proportionate stratified random sampling techniques were used to select a sample of 74 respondents who filled an electronic survey; coupled with interview of 50 start-ups ecosystem players. Descriptive statistics and content analysis was used in data analysis. The study reveals that Kenya has made significant strides in the start-up scene, however, there is a heavy concentration of activity in Nairobi the capital city, leading to disparity within the country. Opportunities for collaboration are bypassed in favour of duplication of programs and consequently funds that should ultimately support entrepreneurs are spread thin. a number of challenges bedevilled start-ups, access to financing and risk capital, lack of sector coordination, weak start-up culture, me too businesses, insufficient policies and guidelines on incubation and commercialization, and lack of a robust monitoring, evaluation and learning system. The study recommends that the national government should provide matching funds for venture capital, standardization and decentralization of innovation and incubation centres countrywide, central database for start-ups and sensitization and awareness-building programs on intellectual property rights among start-ups.

Keywords: *start-up, challenges, ecosystem, incubation, accelerators, tech-hubs, Kenya*

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1. Introduction

The composition and maturity level of start-up ecosystems are essential components of the success rate for entrepreneurs and new enterprises [1]. A good understanding of the state of the start-up ecosystem, especially its strengths and weaknesses, enables specifically-targeted policies, enhances investment decisions, and improves the impact of development cooperation [1]. Kenya has positioned herself at the heart of Africa's start-up ecosystem, ranked 2nd in Africa and among the top 100 emerging ecosystems in the world [2,3]. Mombasa also made it to the list for the first time as Kenya's second city [4]. The transformation has been gaining ground since Kenya began developing the Silicon Savannah in 2007 [5]. Moreover, there are almost 150+ ecosystem-building organisations in Kenya, including 50+ tech hubs, and new investors and corporates are flocking to Nairobi, looking to seize a piece of the pie of the fast-growing pool of tech talents in the country [5]. Kenya's entrepreneurial support community has had notable success in hosting events that foster innovation, such as Nairobi Innovation Week, Nairobi Tech Week, and Sankalp, among others. Between 2015 and 2020, for example, investments in the country increased to KSh26 billion from KSh20.8 billion ($191.4 million), representing 27.3% of the continent's $701 million total investment [6]. This was the largest funding ever achieved by a single country where 59 Kenyan start-ups received funding as compared to 18 in 2015 [7]. The year 2021 has been a phenomenal year for African start-ups, with $1.3billion raised by African start-ups and Kenyan start-ups having raised $156 million - 12% of total African funding - for 56 start-ups, making. Kenya maintains its top three spot in the continent behind South Africa and

Nigeria [8]. Kenya enjoy more ease of doing business and thus is ranked 61st globally [10]. The Kenyan start-up ecosystem, however, has become disjointed with a lot of replication across the board [9]. Public and private sector actors are quick to set up new hubs and programs without taking full advantage of already existing infrastructure and resources. Opportunities for collaboration are bypassed in favour of duplication of programs and consequently funds that should ultimately support entrepreneurs are spread thin. There is a heavy concentration of activity in Nairobi, leading to disparity within the country. Women and the disabled also have a low representation amongst start-ups and the eco-system generally [9].

2. Entrepreneurship Ecosystem and Economic Growth

For a long time, there has been a major debate in economic growth literature on how and to what extent entrepreneurship affects economic growth [11]. However, despite the lack of full consensus on the positive effects of entrepreneurship on economic growth, more favourable literature has been advanced by various scholars [12]. The correlation between entrepreneurship and economic growth depends on the type of context and entrepreneurship [11]. Hence entrepreneurship is most productive when there are ambitious and growth-oriented types of entrepreneurship and in contexts with inclusive and growth-enhancing institutions while Economic growth is less productive in self-employed, necessity-based entrepreneurship [12].

Organization for Economic Co-operation and Development (OCD) asserts that it is unnecessary for governments to "pick winners" unless there is an identified market failure in an industry [13]. This ignites the debate whether the government picking winners and hosting entrepreneurship centres leads to innovations or derails its progress. It is evident that entrepreneurial ecosystems offer a protective environment for start-ups to get operational, build their business ecosystem, and increase their survival rate [14]. Entrepreneurial ecosystem approach offers distinctive perspectives on the clustering of economic activity, in particular, the explicit focus of entrepreneurial activity and especially on high-growth firms [15]. Secondly, the conditions required to generate and support ambitious entrepreneurship in the local and regional environments. The key to success is the interactions between framework conditions and local and regional geographical environments. These perspectives provide a much more facilitative approach to assist in any entrepreneurial ecosystem [16]. Therefore, there is need for existing literature to keep abreast with this vitality to strengthen programming and the ecosystems in Kenya.

Start-ups are young, small, and innovative companies capable of rapid growth [17], this observation is consistent with [18] assertion that Startups are businesses that want to disrupt industries and change the world—and do it all at scale. Hence age, size, and innovation are key characteristics of entrepreneurial ventures. Thus the older start-ups are more advanced in their development cycle, young firms are characterized by limited relational capacity [19] and the size of the start-up comes as a corollary to the age question [20].

For any entrepreneurial ecosystem to thrive, proximity between companies and institutions is expected to foster knowledge and innovation transfer between ecosystem stakeholders [19,21]. The type of interactions between actors and geographical proximity facilitates innovation within entrepreneurial ecosystems [22]. Proximate relationships are more preferred by entrepreneurial firms over distant ones [23]. The generalizability and validity of such assertion form the basis of the analysis of the Kenyan start-up ecosystem since the capacity to provide network access for entrepreneurial firms depends on the effectiveness of entrepreneurial ecosystems.

Across the African continent, the tech hubs and co-working spaces cropping up have consistently made headlines in their effort to bring tech business to the grassroots. This has accelerated many new ideas which have provided new firm formation and a rich source of employment. However, they also demonstrated varying degrees of success and a high failure rate [24].

Micro, Small, and Medium-Enterprises (MSMEs) in Kenya are estimated to be over 7.4 million MSMEs contributing about 30% to the national value-added and employ more than 15 million people [25]. The challenge to sustainability is mainly a mismatch between innovation practitioners' goals and the business plans they structure to achieve those goals [24]. In this regard, there is a lack of clarity on most start-ups that operate on more open-ended ecosystem booster models whether they aim to rely on funding from external grants or make money from their investments [24].

3. Methodology

This study is based on a mix of designs, cross-sectional, longitudinal and human-centred [26]. In the cross-sectional design, a survey of accelerators and incubators was carried out. In the longitudinal design, time-series data on start-up-specific metrics over a period of 10 years was collected. This allows the understanding of what had happened in Kenya's start-up ecosystem since the establishment of pioneer incubators and accelerators in 2010. Additionally, this provided an opportunity to understand the growth of the start-up ecosystem, the investments that have been undertaken, and the successes and failures of the various cohorts of start-ups in incubators and accelerators including their progression pathways. Human-centred design research via in-depth behavioural interviews with individual entrepreneurs was also used to better understand their experiences and attitudes concerning drivers, challenges, opportunities, and financing of their businesses.

The study targeted registered start-ups in Kenya across the 47 counties, hence purposive and proportionate stratified random sampling were used to select the institutions and the start-up owners who participated in the study. Purposive sampling was used to select the key informants at both the County and National level. The use of purposive sampling was appropriate for the study as it enabled realization of 50 participants from the start ups ecosystem players that had characteristics of focus for the analyst and as such enabled an in-depth inquiry for a deeper understanding of the start-up landscape in Kenya.

On the other hand proportionate stratified random sampling was adopted in the selection of respondents who filled an online electronic questionnaire, hence a sample of 74 respondents filled the electronic survey.

Pre-testing of survey tool was conducted in Kiambu County to validate and establish the soundness of the instruments. Kiambu County was chosen because of its proximity to Nairobi city besides having a duality of urban and rural characteristics. Data obtained from the pilot tests was analysed to determine the consistency and effectiveness of the tools in collecting the required information. Amendments were made to the tool to address any issues identified during the piloting phase before the actual roll-out of the tools. After the piloting, the team met with various bodies, focus groups, and stakeholders to identify interviewees and discuss the goals and objectives of the research. Identified respondents upon the completion of protocols signed consent forms committing to participate and support the research team both at the Ministry and at the counties understudy. The research adopted both qualitative and quantitative approaches. The quantitative approach entailed collecting numerical data on metrics of start-ups while the qualitative approach was used to collect non-numerical data on start-ups. Quantitative data was analysed through descriptive statistics to measure the impact of the Kenyan start-up ecosystem on the development of the Kenyan economy and SDGs. Qualitative data was analyzed by grouping themes together to build a rich understanding of regulatory policies governing the start-ups in Kenya.

4. Findings

Results from the survey reveal that start-ups are financed through equity, grants, and loans or a mix of the three (Figure 1).

The majority of the men lead start-ups were financed through equity and a mix of equity, loans and grants. The least popular method of financing for men led start-ups was grants. On the other hand, women-led start-ups were financed mainly from loans and grants, and very few of them were from a mix of the three. However, no women-led start-up was reported to be financed through equity, implying that interventions are required to increase this category of financing to women-led start-ups. On the amount of financing by gender, men- led start-ups reported the highest amount of financing (Figure 2). Men-led start-ups received KShs. 4.794 billion against KShs. 58.12 million by women-let start-ups.

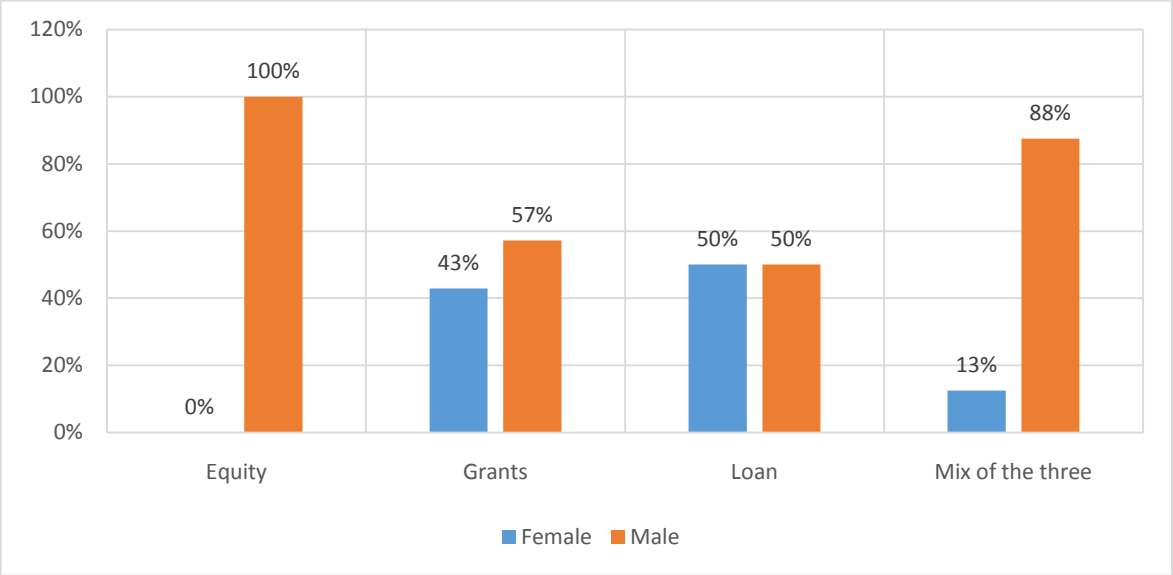

Figure 1. Financing for Start-ups (Source: Survey Data, 2022)

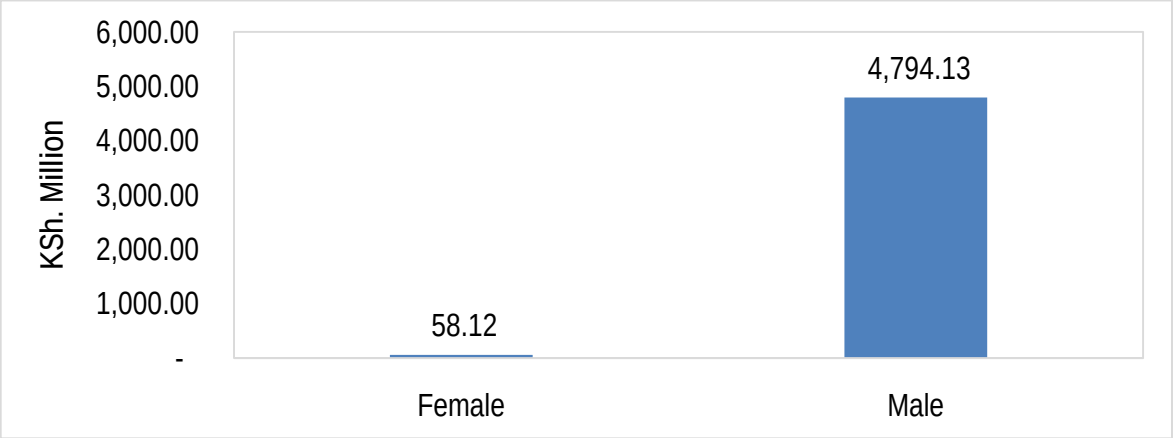

Figure 2. Amount of start-up financing by Gender in Kenya (Source: Survey Data, 2022)

Women-led start-ups reported significantly low amounts of funding compared to their men-led counterparts. However, there is a sharp contrast in terms of difficulty in securing investments (Figure 3). More men-led start-ups reported that they did not know the process of securing investments and that it was difficult to secure financing compared to women-led.

As for the location of the start-ups, majority of both men and women led were located in Nairobi (Figure 4). From Figure 4 it should be noted that Busia County reported more women-led start-ups than men, whereas in Machakos there was parity.

On the education levels of the start-up founders, majority of them had a bachelor's degree, were men dominated the category with 24 to 7 for women (Figure 5). More women start-up founders had a bachelor's degree, followed by a diploma and then masters. As for men founders, the majority had bachelor's degrees, followed by Masters and then Secondary education (O- levels).

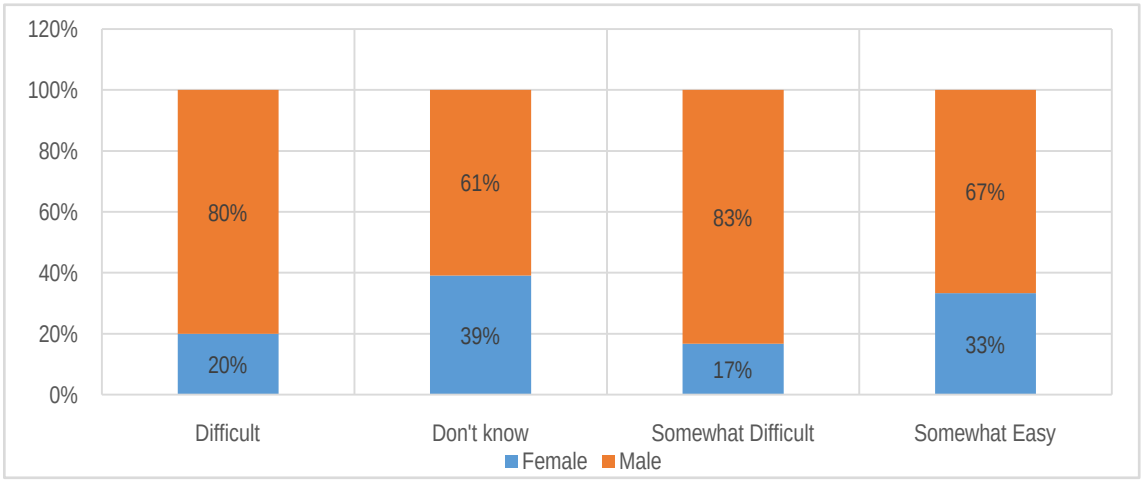

Figure 3. Perception of the process of securing financing by start-ups in Kenya (Source: Survey Data, 2022)

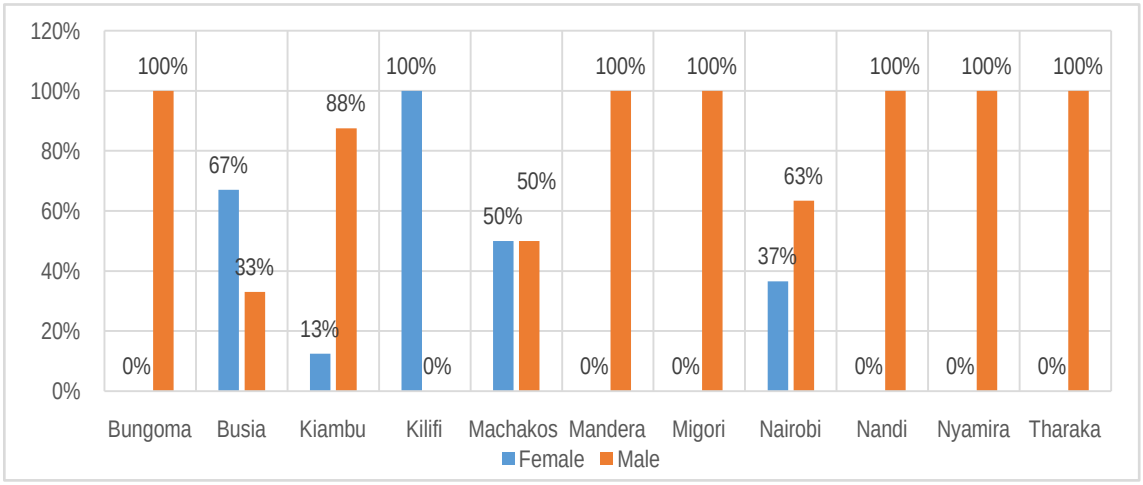

Figure 4. Location of start-ups in Kenya's counties (Source: Survey Data, 2022)

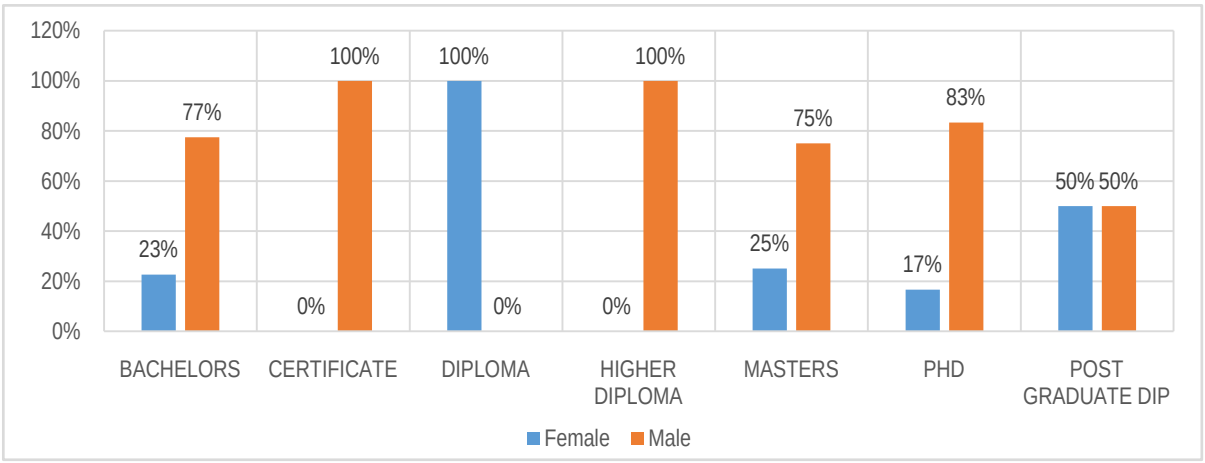

Figure 5. Education levels of start-up founders in Kenya (Source: Survey data, 2022)

More women start-up founders had a bachelor's degree, followed by a diploma and then masters. As for men founders, the majority had bachelor's degrees, followed by masters and then secondary education (O- levels).

Figure 6 presents the number of employees of surveyed start-ups by gender of the start-up lead. Sixty nine (69) per cent of male-led start-ups had between 2 and 10 employees, with only 31 per cent women-led start-ups employing this number. Strikingly, no women-led start-up employed more than 21 employees insinuating that they were smaller in size and constrained financial wise.

Investing in start-ups from their budding stage is more beneficial to the investor as it yields more profit and share stakes in the start-up unlike if invested late. If one invests early in a start-up, it not only confirms higher returns, but also ensures the investor makes decisions and advice in the start-up. Figure 7 reveals that there is parity between start-ups that received investments and those that did not. There are various ways in which start-ups receive funding. This includes self-financing (bootstrapping); finding an angel investor; crowdfunding; loans under Government schemes; loans from private and public sector banks, small business loans from NBFCs or MFIs and peer-to-peer lending among others.

Tech-enabled start-ups use existing technology to improve the efficiency or performance of a product in the market. Figure 8 reveals that 71 per cent of men- led start-ups are tech- enabled compared to 29 per cent women-led. However, 10 men-led start-ups and 4 women-led-start-ups reported that they were not tech enabled.

A start-up incubator is a collaborative program for start-up companies usually physically located in one central workspace designed to help start-ups in their infancy succeed by providing workspace, seed funding, mentoring and training. Joining an incubation programme helps start-ups by providing free or low-cost workspace, mentorship, expertise, access to investors, and sometimes capital in the form of loans. Benefits of start-up incubators include helping early-stage companies refine their ideas, create their business plans, and work on products to market fit, identify potential intellectual property issues, and network with other start-ups. Figure 9 reveals that majority of the surveyed start-ups did not go through an incubation programme. 75 percent of male and 74 of female led start-ups reported that they did not join an incubation programme reported that they did not know of their existence.

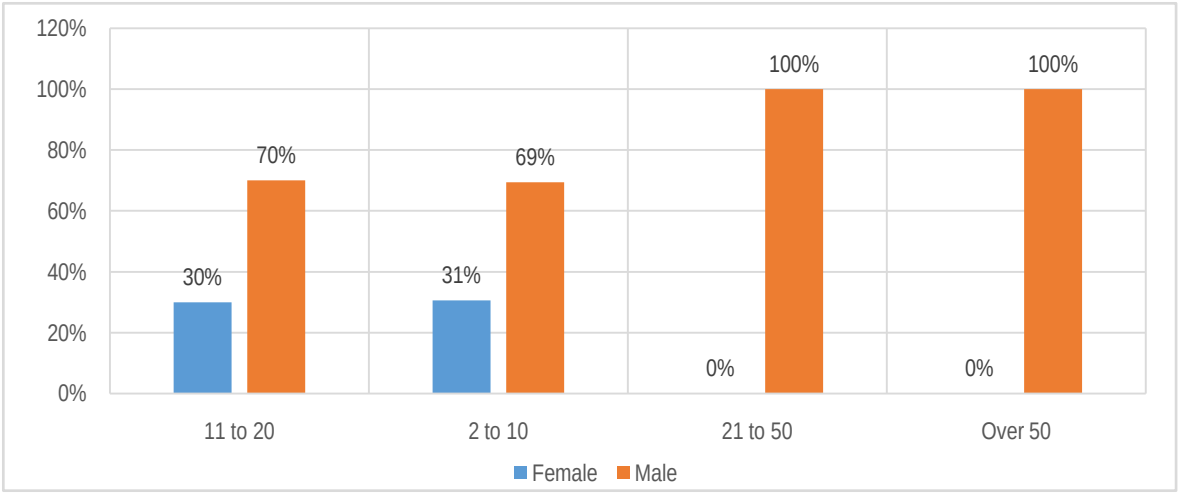

Figure 6. Number of employees by gender of start-up lead in Kenya (Source: Survey data, 2022)

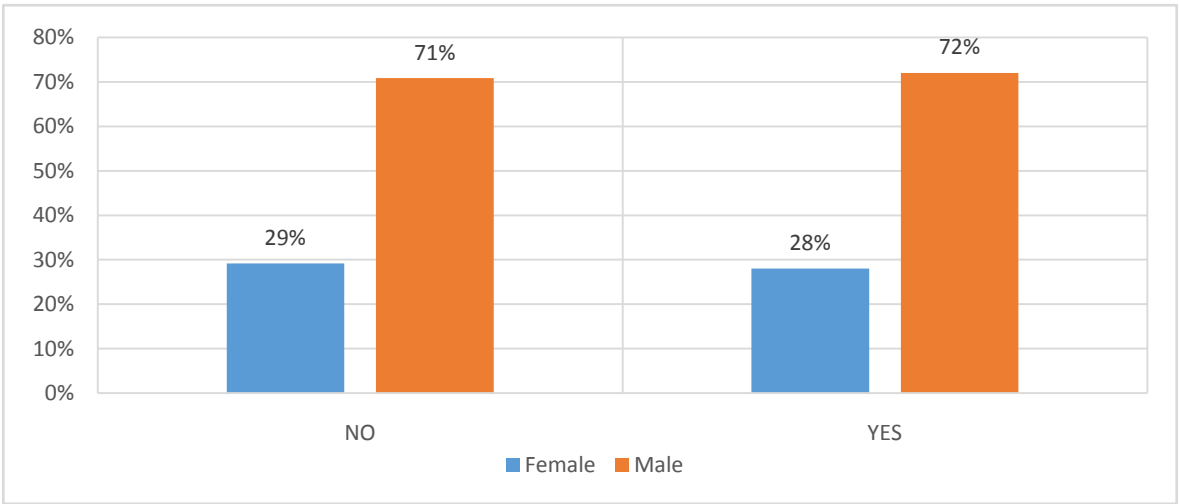

Figure 7. Whether start-ups received investments in Kenya (Source: Survey data, 2022)

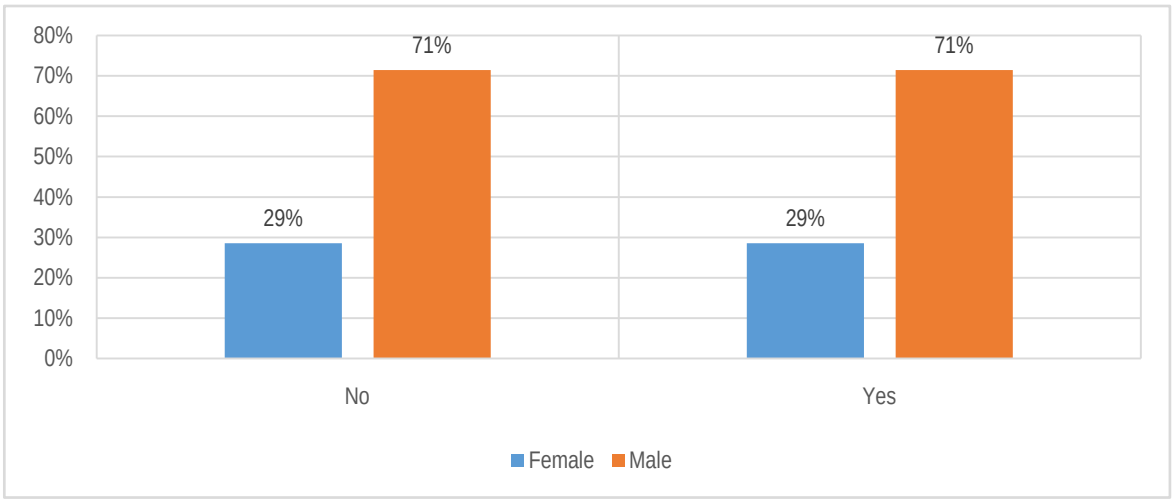

Figure 8. Whether the start-up is tech-enabled in Kenya (Source: Survey data, 2022)

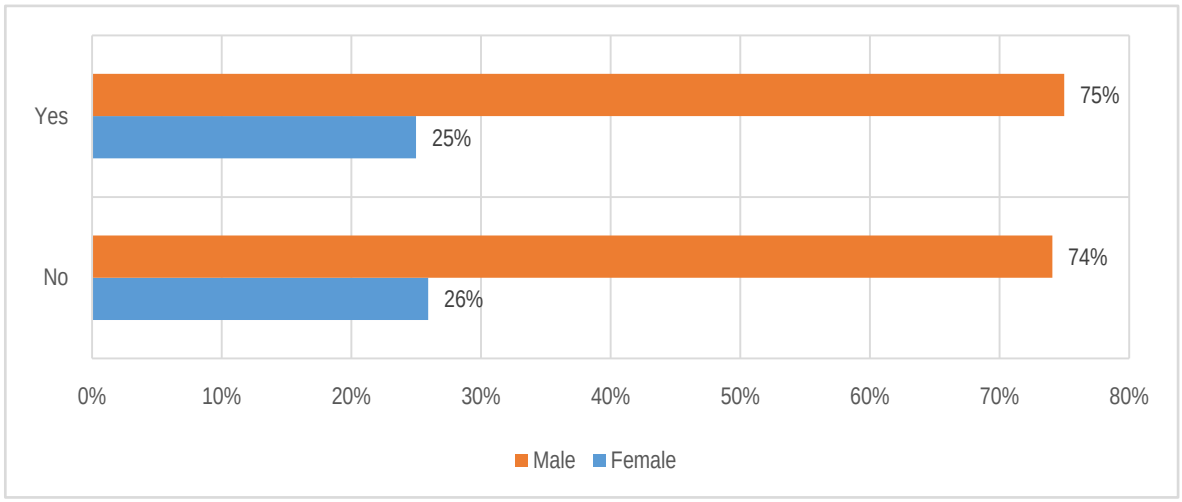

Figure 9. Start-ups that have gone through incubation programme in Kenya (Source: Survey data, 2022)

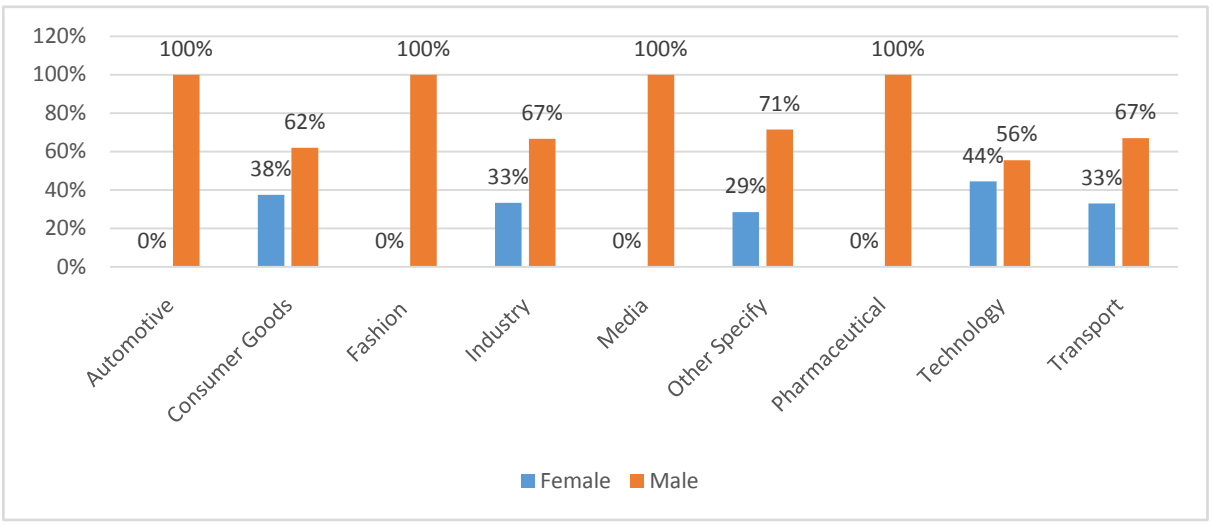

Figure 10. Start-ups by sectors in Kenya (Source: Survey data, 2022)

4.1. Impact of Kenyan Start-up Ecosystem on the Economy

Start-ups may be small companies, but they can play a significant role in economic growth. Start-ups are the centres of innovation. They create jobs which means more employment, and more employment means an improved economy. Start-ups have a direct impact on the towns and cities where they make their homes. Figure 10 shows that there are more start-ups in the other category that was specified mostly as agriculture. The other popular categories include technology and consumer goods. The least popular sector is the pharmaceutical. All the sectors are dominated by men-led start-ups.

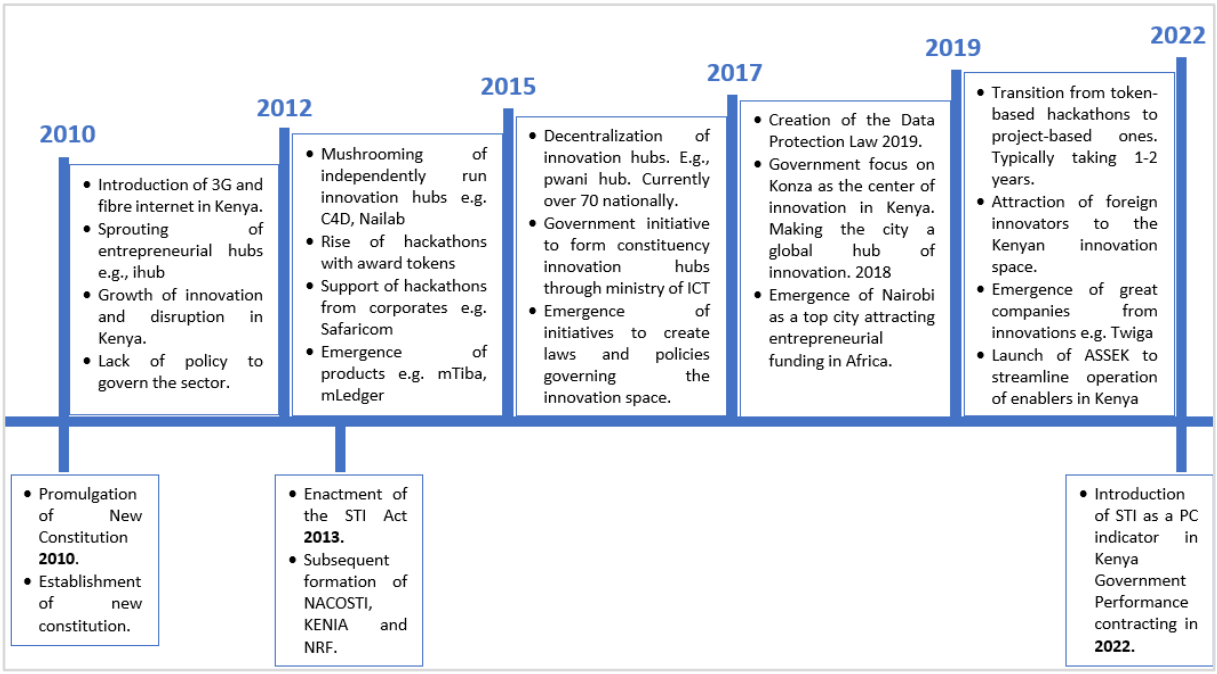

Figure 11. Trend analysis of ecosystem journey in Kenya (Source: Survey data, 2022)

4.2. Trends in the Kenyan Start-up Ecosystem

Figure 11 shows the trend of the start-ups journey since year 2010 in Kenya. Kenya introduced 3G and fibre internet, which sprout off entrepreneurial hubs that were mainly concentrated in Nairobi, the capital city of Kenya. However, with increase in number of players the start-ups players have since moved from purely in Nairobi to others counties like Machakos, Mombasa, Taita- Taveta, Kisumu, Nyeri, Kiambu among others. This has led to government interest in start-up landscape moving away from purely donor dominated to seeing more government increased initiatives.

In terms of financing the landscape, there has been an increase in funding. Moreover, some of the early start-up 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 start-up ecosystem like seeing a move from mainly foreign companies to local entrepreneurs raising financing e.g. cellulant, market force, and pezesha among others. This has led to more growth of angel investors such as Vban and Naiban. In addition, there is also a shift in start-up to incorporating informal sector e.g. Twiga that included small holder farmers in their value chain, Wasoko integrated small retailers into big corporate supply chains, Market force has integrated with informal sector, and Sendy integrated the motorbikes taxis (boda boda). Further, the changes in the start-ups ecosystem have affected positively Kenya's development challenges for example Mkopa providing clean energy, Branch and other fintechs- on payments and lending leading to financial inclusion, Koko networks – energy among others.

Despite the notable growth of the start-up ecosystem in Kenya in the last ten years this has not happened without challenges. Challenges experienced by start-ups include low participation of women and girls, inadequate capacity e.g. for manufacturing and prototyping, inadequate access to risk capital, weak start-up culture, me-too businesses, lack of human resources with adequate skills and experiences, lack of robust monitoring, evaluation and learning system, lack of proper information on where to get support for start-ups among, bureaucracy in government agencies, election cycles which distort start-up activities, lack of commitment and patience from MSMEs, lack of consistency of standardization of products, unfair competition, high taxation, inadequate policies ensuring and supporting start-ups growth.

4.2.1. Policy Changes

One characteristic of start-ups in Kenya is that all start-ups are MSMEs, but not all MSMEs are start-ups. MSME's policy development has been an integral part of the policy process in Kenya since independence. With the dynamic nature of the business environment and changing global, regional, and local development priorities; MSME policies have been evolving over the years to adapt to the prevailing conditions. The policies date back to 1965 when Sessional Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya was developed to provide a policy framework that would enable local Africans to acquire the skills necessary to own and manage enterprises. Overall, the objective of this policy was to enable more Africans to own businesses in order to reverse the adverse economic and social disenfranchisement caused by colonial rule. With all its good intentions, it did not fully achieve its objectives, which then led to the development of Sessional Paper N0. 1 of 1986 on Economic Management for Renewed Growth. Under this sessional paper, the priority areas of focus were still skills development, access to finance, extension services for agriculture, incentives for investment in machinery as well as innovation and technology [27]. Sessional Paper No. 2 of 1992 on Small Enterprises and Jua-kali Development in Kenya followed intending to have one comprehensive policy framework that covered all aspects of supporting MSMEs as core agents in economic growth and development.

In 2005 Sessional Paper No. 2 of 2005 on Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction was developed to build on the Sessional Paper No. 2 of 1992 to enforce the implementation of the interventions proposed in the earlier paper. Among the key priority areas that this policy focused on were linkages of MSMEs with large corporates, access to finance, development, acquisition, and transfer of technology by the small enterprises, and enhanced access to larger markets by small businesses including through special reservations in public procurement as well as provision of institutional support [28].

Following the enactment of the MSE Act of 2012, other policies have been developed that have direct reference to the MSME sector in the country; or enhance the implementation of the 2005 sessional paper provisions [29]. These policies include: The National Trade Policy 2019, Kenya Investment Policy 2019, Kenya Youth Development Policy 2019, the Digital Economy Blueprint 2019, and Cooperative Development Policy 2019 to ensure that MSMEs that are aggregated through the cooperatives access financing and the technical support they need to scale. Sessional Paper No. 5 of 2020 on Kenya Micro and Small Enterprises Policy for Promoting Micro and Small Enterprises (MSEs) for Wealth and Employment Creation also came up targeting the MSME sector with the ultimate goal of creating a conducive and enabling environment for small business enterprises to grow, create decent jobs and increase their contribution to the overall social-economic development of the country [29,30].

5. Conclusion

This paper has analysed the trends and dynamics of start-ups in Kenya over the last 10 years and concludes that Kenya has made significant strides in the start-up scene that has let to interest by foreign start-ups support players such as venture capitalists, seed funders, and start-up financiers. However, not all businesses have real potential to scale neither are they tech-based. Given that most start-ups ecosystem players and support services such as incubators and shared working spaces are located in major urban areas, which implies that the ecosystem is not evenly spread in Kenya and thus there is still greater potential for start-ups. The government's attempts to address start-up ecosystem challenges so far have not addressed key issues around start-ups. Challenges experienced by start-ups that are attributed to the ecosystem include access to financing inadequate risk capital, gender disparity, lack of coordination, weak start-up culture, me too businesses, inadequate skills labour, lack of a robust monitoring and learning system, weak start-up culture, me too businesses, and insufficient policies and guidelines on incubation and commercialization

6. Policy Implications

The national government should provide matching funds (risk capital) to contributions by foundations, philanthropists, and companies as a way of minimizing risk capital associated with start-ups during their early phases. Institutionalization of national innovations week to provide start-ups with a national platform to pitch once a year and in so doing will attract local and or international investors with a private-government nexus is imperative. There is need for standardization and decentralization of innovation and incubation centres to be easily accessible countrywide that are well equipped and meet minimum standards, with both the private and public sectors executing synchronized innovation programs to eliminate duplication of funding and technical support and maximizing on both funding and technical assistance. A central database for start-ups should be built to facilitate monitoring and evaluation reporting, as well as the progress of the innovation ecosystem activities. Engendering a focus on youth and women entrepreneurship, exploring the opportunities and maximizing the youth potential. There is a need for long-term sensitization and awareness-building programs on intellectual property rights among start-ups, with specific desired outputs and outcomes. Such programs should put the industry at the forefront to realize Vision 2030's goal of becoming a knowledge economy by 2030, a defined pathway focusing on start-ups arising from research institutions and innovation hubs is required.

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Competing Interests

The authors of this manuscript declare that they have no competing interests and the funding organization did not have any no role in the study methodology and publication of the findings.

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