

# ENHANCING THE ENTREPRENEURSHIP FRAMEWORK IN SOUTH AFRICA

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## ABSTRACT

*Entrepreneurship sets the pace for economic development by creating employment, spurring innovation, creating effective means of resource utilisation and improving the socio-economic wellbeing of the citizenry. This paper establishes the need for policy reform in the area of entrepreneurship by proposing the adoption of a national technology-based entrepreneurship policy in South Africa. The central research question to be answered is what elements within the national entrepreneurship framework of South Africa need to be improved to develop a robust ecosystem of innovative, high-growth start-ups and entrepreneurship. The results of this paper should assist South African regulators in spurring employment, economic growth and innovation. A survey of university academics, innovative entrepreneurs and members of anchor institutions found that the most significant barriers to technology or digital entrepreneurship in South Africa are: i) unfocused national entrepreneurship strategy; ii) suboptimal regulatory environment to facilitate innovation; iii) lack of networking and global connectivity; iv) lack of support for entrepreneurs; v) lack of access to adequate financing. The findings suggest the need for policy reform in the area of entrepreneurship, directed at facilitating high-growth, technology-based entrepreneurship aimed at promoting innovation and creating jobs.*

**Keywords:** Entrepreneurship, Innovation, Technology, South Africa, Policy framework.

## INTRODUCTION

South Africa is described by the World Bank as a dual economy with one of the highest inequality rates in the world (World Bank, 2019). Youth unemployment stands at an all-time high of 55.2%, among university graduates; the unemployment rate is 31.0% (Stats SA, 2019). According to the General Entrepreneurship Monitor (2017) business ownership, rates are as low as 2.5% with high levels of poverty and inequality predominantly evident amongst previously disadvantaged Black South Africans (Heerington, Kew & Mwanga, 2017). Policy transformation in the area of entrepreneurship to address growing youth unemployment has been a key discussion at the International Labour Organisations (ILO), Global Youth Employment Forum and the World Economic Forum (WEF) summit on Africa.

South Africa hosts over two million small businesses (SEDA, 2018). However, the majority of these entrepreneurs participate in the informal sector as necessity entrepreneurs who are predominantly motivated by unemployment and the inequality that plagues many in South Africa (SEDA, 2018). Few of these small businesses translate into sustainable jobs with only 15% of South African small businesses growing into successful companies (Allen Grey Orbis Foundation, 2019). Within the larger landscape of entrepreneurship, South Africa has a young and thriving tech start-up scene bustling with innovative and ambitious entrepreneurs (PWC, 2015). According to studies conducted by Venture Capital for Africa (2018), 68% of South African technology start-ups are creating jobs with an average of 5.8 full-time equivalents (FTE)

per venture. This paper contends that economic growth through the promotion of technology centred, high-growth entrepreneurship can serve as one of the solutions to South Africa's economic and social problems (Allen Grey Orbis Foundation, 2019).

This paper advances the perspective that there is a need to establish a policy reform agenda involving the implementation of a focused entrepreneurship policy targeted explicitly at high-growth, technology-based entrepreneurship aimed at promoting innovation and creating jobs. The focus of such a policy framework should be promoting technology-based start-ups, encouraging more significant innovation and building a sound regulatory infrastructure for small, smart businesses as a solution to low-growth and high unemployment (Allen Grey Orbis Foundation, 2019). This paper attempts to enhance the entrepreneurship policy in South Africa through a combination of doctrinal and empirical research. The analysis conducted is based on recommendations by the United Nations Conference on Trade and Development (UNCTAD, 2012), Organisation for Economic Co-operation and Development (OECD, 2013), as well as international best practice as reflected by the entrepreneurship policies adopted in Tunisia and the Netherlands.

The empirical aspect of this paper takes the form of an online survey. The paper surveys twenty key players in the South African entrepreneurial ecosystem, including innovative entrepreneurs, academics, members of intermediary organisations (co-working spaces, accelerators and start-up advisors) as well as anchor institutions (legal, financial and research). The objective of the survey is to identify the factors affecting the growth of the technology-based entrepreneurial ecosystem in South Africa and the opportunities available for policy-related improvement. The survey further aims to determine the usefulness and significance of new legislative or policy measures specifically focused on supporting innovative tech entrepreneurs. The survey further acts as a tool to support the policy proposals recommended in this paper. The survey questions are designed based on existing research on technology-based entrepreneurial ecosystems.

## **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

### **Technology-Based Entrepreneurship**

Technology-based entrepreneurship is the utilisation of developments in science, computing, information and communication technologies (ICTs) or engineering to bring new products or services to market, or to deliver existing products and services in new innovative ways (Brem & Giones, 2017). Technology entrepreneurship in the fourth industrial revolution takes on a diversity of forms and occurs in a variety of industries (Kordel, 2018). This ranges from the traditional science-based technology entrepreneurship coming from University-based intellectual property to the new and rapidly evolving Internet-based technology start-ups, in the form of social media platforms such as Snapchat or service delivery platforms such as Uber (Kordel, 2018; Brem & Giones, 2017).

The value-creating feature of these technological developments are found in new product activity systems, distribution channels, consumer segments or intellectual properties (Ferreira et al, 2016; Galindo & Mendez, 2014). These tech-firms tend to generate substantial market disruption and display characteristics of high growth (Morris, 2011), having above-average impact on job creation, wealth creation and the development of entrepreneurial role models (Galindo & Mendez, 2014). Globally these entrepreneurs are pushing the frontiers of business, industry and innovation utilizing disruptive technologies such as artificial intelligence (AI),

blockchain and the Internet of Things (IoT) (Ferreira et al, 2016). Technology-based entrepreneurship has proven to influence economic growth and improvements in social welfare in various developing countries (Beckman et al., 2012). The Indonesian start-up, GOJEK provides a key example of this.

Established in 2010 as a digital motorcycle ride-hailing phone service, GOJEK has since evolved to provide an on-demand transport and lifestyle services (Go-Jek, 2019). GOJEK now operates in over fifty cities across Southeast Asia equipped with a social mission to improve the welfare and livelihoods of workers in various informal sectors (Go-Jek, 2019). Researchers Walandouw, Primaldh, Wisana & Nugrouho at The University of Indonesia (2018) conducted a study accessing four GOJEK services. The study surveyed about 3,886 Go-Ride drivers-partners, 1,010 Go-Car driver-partners, 1,000 Go-Food merchants, and 836 Go-Life talents (Walandouw et al., 2018). The findings estimate that GOJEK contributed more than \$3 Billion in added value to the Indonesian economy in 2018 (Walandouw et al., 2018). The average income of GOJEK workers was higher than the average minimum wage for similar sector workers in nine Indonesian cities. The study further indicated that GOJEK increased female participation in the Indonesian economy, with 70% of Go-Life partners (Go-Massage and Go-Clean services) being women (Walandouw et al., 2018). The study concluded that GOJEK has had a substantial impact on Indonesia both economically and socially.

In the South African context, technology-based innovative start-ups have experienced a healthy inflow of investment and growth. The most significant developments occurred in the past five years in the two major economic hubs of Johannesburg and Cape Town (VC4A, 2018). The growth of the ecosystem has largely been driven by strong efforts in the private sector to organise through associations, such as Silicon Cape (established in 2009), investments from corporate South Africa in accelerators, incubators and innovation programs. In 2018, a total of 107 technology-based deals were completed in South Africa. \$250 Million in equity funding was raised over 37 deals (Ventureburn, 2018). Six start-ups raised as many rounds equal to or higher than \$5 million, with Fintech companies YOCO and Jumo accounting for the bulk of the funds raised (Partech, 2018). Driven by financial inclusion, Fintech is the biggest sector in South Africa. Other dominant sectors include B2B & Tech Adoption, Insurtech, EdTech and Software as a Service (Partech, 2018).

Technology-based entrepreneurship is having a significantly positive effect on South Africa, both economically and socially. The South African start-up GetSmarter demonstrates that in the fourth industrial revolution a globally relevant, high-growth business can be built in South Africa. GetSmarter is an EdTech business that deliver short-term online certification courses to distance-learning students in partnership with top tier universities (Getsmarter, 2018). The company was established in 2008 and funded through angel investment. In 2017, it was acquired by 2U, an American EdTech giant for \$103 million (VC4A, 2018). GetSmarter now offers courses to over 70,000 customers in over 140 countries. Over 500 jobs were initially created, this grew to over 1,000 jobs in Cape Town within two years (VC4A, 2018). Another example of a start-up bringing about positive social and economic impact is Cape Town based, SweepSouth. SweepSouth is a digital on-demand application cleaning service that matches domestic workers with home and office cleaning opportunities (SweepSouth, 2018). Domestic workers constitute a significant proportion of the informal workforce in South Africa, earning very low wages and having little protection (VC4A, 2018). SweepSouth has successfully created an environment to address these social issues by paying domestic workers significantly more per hour and providing benefits, training opportunities and formal protection under the Labour Relations Act

(VC4A, 2018). Within one year of its launch in 2014, the start-up secured its seed round. In 2016, the company secured a new R10 million round from investors such as First Rand Group and Newtown partners (SweepSouth, 2018). This allowed them to create over 1,000 jobs and pay out over R20 million to workers in just one year (VC4A, 2018).

While a few tech-savvy youths have started making their mark on the digital economy, new policies are needed for small enterprise development to ensure a decline in youth unemployment (Brown & Mason, 2013). This requires a transition in policy focus from low-productivity self-employment to more productive innovative entrepreneurship.

## **RESEARCH METHOD**

### **Sample and Data Collection**

This paper surveyed twenty key players in the South African entrepreneurial ecosystem through an online questionnaire. Nine of the participants were academics; eight were South African technology-based entrepreneurs, while three were anchor institutions and organisations. All the participants were knowledgeable about the technology entrepreneurship ecosystem in South Africa. As such, they were able to provide valuable insight into the challenges facing innovative entrepreneurship, opportunities available for technology-based entrepreneurship in South Africa as well as areas where policies and legislative interventions would enhance improvement. The survey sought to ascertain the usefulness and significance of new legislation or innovative focused policies aimed at supporting high-growth technology centred entrepreneurship. To achieve these participants were first asked to identify the challenges facing innovative entrepreneurship in South Africa. Thereafter entrepreneurship policy recommendations directed at addressing the issues were proposed and participants were asked to rank the usefulness or otherwise of the recommendations.

### **Analyses**

The data collected from the survey were analysed using thematic analyses. Thematic analyses provides a systematic framework for coding data by identifying patterns across dataset to answer key research questions (Maguire & Delahunt, 2017). The thematic analyses focused on identifying themes that were implicit or explicit ideas within the data (Guest, MacQueen & Namey, 2011). The method allowed the study to step outside of the theoretical domain and into the practical arena.

### **Findings**

An evolution has occurred in the manner in which governments in advanced countries undertake entrepreneurship policies. Mason & Brown (2013) summarise this as a shift from traditional enterprise policies to growth-oriented enterprise policies. This shift involved the reclassification of entrepreneurship and a greater focus on support for growth-oriented and innovation producing entrepreneurship. The Entrepreneurship Policy Framework and Implementation Guidance, created by the UNCTAD acts as a guiding international document for developing country policymakers in the design of entrepreneurship measures (UNCTAD, 2012). The UNCTAD identifies the following priority areas for policy focus: (1) formulating a national entrepreneurship strategy; (2) optimising the regulatory environment; (3) improving access to

finance and (4) promoting awareness and networking. Based on these priority areas and the findings of the survey, this paper makes recommendations for entrepreneurship policy transformation in South Africa, using case study examples from the Netherlands and Tunisia.

### **National Entrepreneurship Strategy**

Since the end of apartheid and the birth of democracy, the South African government has recognized the importance of fostering an enabling environment for small enterprises, especially for the previously disadvantaged Black majority. Government Policy on the development of Small Micro and Medium-sized Enterprises (SMME) was initially documented in the 1995 National White Paper on SMME development. This paved the way for the launch of a variety of new support measures and initiatives for small business in the economy. The most recent and key policy document is The Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprise (2007), an action plan which focuses on increasing financial and non-financial support, creating a demand for the products and services provided by the SMMEs and reducing regulatory constraints. The current entrepreneurship policies and strategies can largely be described as E-extension and New Firm Creation Policies. These policies are criticised by scholars as scattergun approaches which focus on increasing the number of business start-ups (Shane, 2009). Academics have described this approach as ‘bad public policy’ on account of the limited growth, short survival rates and high failure rates (Marsh, 2019; Nightingale & Coad, 2014; Shane, 2009; Lundstrom & Stevenson, 2005).

This paper proposes a growth-oriented national entrepreneurship strategy that is focused on the high potential technology-based entrepreneurs, with the largest economic potential (Brown & Mason, 2013). The Tunisia Start-Up Act (2018) serves as an example of international best practice in the formulation of a national entrepreneurship strategy. The objective of the Act is to set up an incentive framework for the creation and development of Start-ups based, on creativity, innovation and the use of new technologies and achieving a strong added value and competitiveness at the national and international levels (Tunisia Start-Up Act, 2018). The Act enables the government to grow the number of clusters and competency in the tech sub-sectors which show the most promise in Tunisia. The online survey conducted for this study indicated that 65% of survey participants believe that the development of a “Start-Up South Africa Act” would be extremely beneficial to South Africa both economically and socially. This policy or legislation should be developed using a ‘bottom-up’ method, whereby legislators collaborate closely with ecosystem players, members of the private sector and entrepreneurs (Brown & Mason, 2013). The legislation or policy should be growth-oriented focused on connecting components within ecosystems to enable the system to better function.

### **The Regulatory Environment**

An optimal regulatory environment requires that special attention be paid to entrepreneurs introducing new, disruptive technologies into the market, while also protecting other public policy concerns (Brown & Mason, 2013). Survey participants were asked to what extent they believed that laws in South Africa restricted innovation, specifically for entrepreneurs utilising new and disruptive technologies. The results showed that 58% of survey participants believed regulation to either be an extreme or serious impediment to innovation. 35% of participants believed this to be a serious impediment while 23% deemed it an extreme impediment.

As is the case in most African countries, South African regulators have recently begun to grapple with the idea of regulating in the face of disruptive technology. The Dutch Enterprise Policy is a key example of international best practice in the area of optimising the regulatory environment to allow for innovation (Ministry of Economic Affairs, 2011). The Dutch Enterprise policy adopts a 'Customized Approach' which is premised on facilitating innovation by reducing regulation and collaborating with innovative entrepreneurs (Ministry of Economic Affairs, 2011). The policy adopts a customized approach whereby regulatory authorities, licensing authorities, businesses, citizens and professionals collaborate to address burdens which inhibit innovation in Top Sectors. A key example of such collaboration can be found in the financial sector. The Netherlands Authority on Financial Markets and the Central Bank launched the innovation-hub to facilitate innovation in the financial sector. The hub provides a space for innovators and regulatory authorities to collaborate and communicate to facilitate reform (Ministry of Economic Affairs, 2018).

Similar to the Dutch approach, South African regulators should move beyond the expectation of finality and embrace contingency, flexibility and an openness to the new. As such, this paper recommends three key principles established by authors Vermeulen, Fenwick and Kaal. The authors favour data-driven regulatory intervention. Policymakers should rely on a variety of reliable data ranging from investment data to global databases to obtain signals about what, when and how to regulate in the face of growing innovation (Vermeulen et al., 2018). Regulating for innovation requires a shift from a rule-based to a principle-based adaptive regulatory approach which incorporates soft law instruments, such as best-practice guidance, industry self-regulation, third-party certification and accreditation (Eggers et al., 2018). These measures should be driven by collaboration between government, local and international ecosystem players (Vermeulen et al., 2018).

This paper further recommends the introduction of a regulatory sandbox. A regulatory sandbox acts as a 'safe space', governed by a set of predefined rules that allows innovators to test their products and business models in live environments without having to comply with legal requirements and procedures (Vermeulen et al., 2018). The paper suggests that the sandboxes should initially be cluster focused on the dominant sectors within the ecosystem and emerging technologies that require more governmental investigation. The introduction of a regulatory sandbox offers legislators the opportunity to engage with entrepreneurs and learn about disruptive technologies and ways in which to further facilitate innovation whilst protecting other public policy concerns (Vermeulen et al., 2018). This will further act as a solution to the issue of slow response to innovation, which has been evident in the case of Fin-Tech within financial sector regulators. In this way regulators will have a pre-established unit, overseeing disruptive technology and making timeous regulation recommendations based on reliable data derived from testing and experimentation within the sandbox. These recommendations were supported by a majority of survey participants. 45% of the participants believed that the adoption of such recommendations would be extremely beneficial to South African entrepreneurs.

## **Access to Finance**

The survey findings indicate that access to adequate finance is a major challenge facing entrepreneurs in South Africa, particularly among innovative entrepreneurs. The financing needs of entrepreneurs running innovative and/or high growth firms differ distinctly from the needs of general entrepreneurs (UNCTAD, 2012). This is because such investments involve considerable uncertainties, high risks, information asymmetries and intangible assets (UNCTAD, 2012).

Furthermore, entrepreneurs in this field have to engage in considerable efforts to raise capital through various rounds of external funding ranging from seed-funding to funding focused on scaling the company. Governments have a significant role to play in facilitating access to finance by introducing policies aimed at improving access to relevant financial services as well as promoting funding for innovation (Brown & Mason, 2013).

The Dutch government seems to have acknowledged that entrepreneurs require different kinds of funding at various stages of the start-up process. As such the government implemented a variety of measures to facilitate access to capital from the idea stage of the start-up process to the stage of scale-up and internationalization. The SEED Capital scheme is a regulation which improves the risk-efficiency ratio for investors and increases the financing possibilities for tech and innovative entrepreneurs. The Scheme operates as closed-end investment funds whereby investors that invest in risky businesses with techno start-ups and/or creative start-ups can qualify for the scheme. An upper limit of the loan equals the amount of private investment, up to a maximum of € 6 million. Facility for Growth is an additional measure implemented by the Ministry of Economic Affairs. This initiative helps entrepreneurs to attract venture capital funding by extending guarantees to cover bad loans from banks and on shares from venture capital companies. The investor receives a 50% guarantee on the venture capital that they offer an entrepreneur. In the case of loss, the government covers 50% of that loss. This reduces the risk for the financier considerably and increases risk capital for entrepreneurs. Furthermore, the Dutch government has implemented the Innovation Credit whereby the Ministry for Economic Affairs finances the development of new products, processes or services that have a strong case. The credit is risk-bearing and only needs to be paid back if the development is a success. This way the government fills a gap in the capital market during the phase in which entrepreneurs are developing their ideas and engaging in research, but are not yet turning a profit (Ministry of Economic Affairs, 2018).

In the South African context, when asked how they raised or intend to raise capital, majority of the survey participants who are entrepreneurs indicated that they are either self-funded or obtained financial assistance from friends and family. Results from the survey showed that only 20% of surveyed entrepreneurs received government funding, while 13% obtained debt financing, for example a bank loan. Despite the efforts that the South African government has put towards increasing venture capital (VC) investment, only 6% of entrepreneurs surveyed had been able to access funding in this way. New alternative modes of funding such as peer-to-peer lending platforms and crowdfunding platforms seem to be largely unutilised by the participating entrepreneurs, however, the survey indicates that funding in this way could be a viable option for some entrepreneurs if policy changes were made.

The survey findings are consistent with previous studies conducted by PricewaterhouseCoopers (2015) on South Africa's emerging companies and entrepreneurial landscape. The survey interviewed 734 participants from emerging companies, which had some form of technological enablement. The study indicated that only 19% of participants had ever applied for funding from government agencies (PWC, 2015). Few innovative entrepreneurs attempted to obtain government funding partly due to the fragmentation between government departments and the burdensome prerequisites attached to government funding (ExpertHub, 2019). Furthermore, entrepreneurs were deterred by the lack of competency and transparency that are prevalent in government funding organisations (VC4A, 2018). Some entrepreneurs indicated the high possibility of corruption in government organisations as a serious factor preventing them from seeking government funding (VC4A, 2018). Innovative entrepreneurs

indicated that the primary government funding institution, SEFA fails to meet the needs of innovative entrepreneurs especially at the idea, conceptualization, proof-of-concept, research and development stages of the start-up process (PWC, 2015). Instead of spending more public funds on large government funding programmes, this paper recommends the introduction of government match funding programs. The match funding is to be conducted in collaboration with the private sector to decrease investment risk and increase efficiency when allocating funds (VC4A, 2018).

A key focus for the South African government has been addressing the funding gap by increasing risk finance. The government has taken strides to address issues of seed and equity funding. In its strategy document, the Department of Small Business Development (2017) proposed the creation of risk-sharing agreements between government and investors who enter into high-risk ventures. The department further pledges to explore the role of venture capital. These efforts have accumulated in the implementation of several initiatives (Ventureburn, 2019). First was the 2014 amendment to Section 12J of the Income Tax Act NO 58 of 1962. Section 12J was introduced in July 2009 to provide individuals, companies and trusts with a tax incentive to invest in venture capital companies who in turn fund start-ups (Income Tax Act, 1962). Section 12J was not widely utilized by investors until 2014 when amendments made full tax deduction permanent if the investor holds the shares issued by the venture capital companies for at least five years (Ventureburn, 2019). A further step was taken by the government in March 2019, when it announced the 1.4 billion Rand SA-SME fund. The fund is a public-private collaboration which invests in three venture capital companies with an established history of investing in innovation, technology-enabled start-ups (Sasme, 2019).

Despite the South African governments' efforts to close the funding gap, several academics have been critical of the over-emphasis on risk capital. Harrison and Mason (1996) argue that this approach is ineffective because only a small minority of firms utilize this form of finance. This argument is consistent with studies conducted by VentureBurn South Africa (2019) and PriceWaterHouseCooper (2015), which held that only 3% of South African start-ups attract VC funding. This was further confirmed by the survey conducted in this paper whereby only 6% of participating entrepreneurs had been able to access VC funding.

Brown & Mason (2013) argue that encouraging angel investment is arguably a more effective approach. An angel investor is a wealthy private individual who provides capital for a business start-up, in exchange for a convertible debt or equity (Harrison & Mason, 1996). The authors argue that angel investors provide seed and start-up capital. Furthermore, the hands-on nature means that angel investors typically invest in local start-ups (Brown & Mason, 2013). The authors encourage governments to underwrite the operational costs and partner with business angel networks who connect investors and entrepreneurs. In line with this argument, this paper proposes that the South African government invest more resources towards underwriting the operational costs and partnering with business angels such as Jozi Angels who connect angel investors with innovative entrepreneurs (VC4A, 2018). South Africa is home to some of the wealthiest individuals on the African continent. By participating in such networks and by providing incentives, the pool of angel investors in South Africa can be significantly strengthened (Ventureburn, 2019).

An over-emphasis on risk capital is ineffective because only a small minority of firms utilize this form of finance. It is therefore important for governments to initiate policy focusing on alternative means of financing such as peer-to-peer lending platforms and crowdfunding (PWC, 2015). However, in the South African context, a regulatory vacuum is present in these

areas creating a lack of certainty amongst investors and entrepreneurs. Under current legislation, equity crowdfunding platforms will be deemed as an “offer of securities to be issued to any section of the public” in terms of section 95 of the South African Companies Act NO 71 of 2008. This means that unless the offering of securities falls within one of the exclusions listed in section 96 of the Act (such as offers to persons whose ordinary business is to deal in securities), the start-ups utilising the platform will be required to be registered as a public company (Itzikowitz & Meiring, 2019). Therefore, the platform will be regulated by all the disclosure, financial reporting, auditing and general governance requirements regulating public companies in terms of the Act and other financial legislation (Itzikowitz & Meiring, 2019). Furthermore, there is an obligation on the entity controlling the platform to repay or register as an exchange under the Financial Markets Act (2012). In addition, crowdfunding platform may fall foul of the Banks Act (1990) where the funding is by way of debt. Cross-border equity crowdfunding activity will also need to comply with South African exchange control regulations, which may add another hurdle to those aiming to streamline the funding process (Itzikowitz, 2019).

These legal hurdles and uncertainties need to be address in order to open up new streams for access to funding. Based on the survey, most ecosystem players agree with this initiative with 100% of participants indicating that this would be extremely beneficial/seriously beneficial to South African start-ups.

### **Facilitating Networking and Global Connectivity**

Local connectedness through strong business support networks can be valuable for entrepreneurs in diffusing information about business and export opportunities as well as programmes and initiatives (Global Start-Up Ecosystem, 2019). Business support networks can be established through mentorship connections, business-to-business linkages as well as business and educational connections. Governments take on the role of facilitator, striving to provide relational forms of support to entrepreneurs. Relational forms of support include network building, developing connections between entrepreneurial actors, institutional alignment of priorities and fostering peer-based interactions (Brown & Mason, 2019).

Results from the online survey indicated that local connectedness is lacking in the South African ecosystem. 56% of survey participants indicated that the lack of a support system is an extreme impediment to the success of entrepreneurs. Participants indicated that new entrepreneurs are unable to connect and network with seasoned successful entrepreneurs, as such there is a lack of exchange with regards to ideas, skills and resources. There is a need to develop a national network and pool of experienced mentors, coaches and advisors to support entrepreneurs.

To further improve the local connectivity, this paper recommends government intervention through the introduction of a government designed portal in the form of an Online Hub. The Hub should act as a one-stop online platform to provide ecosystem players with a means to connect, access to information and mentorship opportunities. The hub should further provide for government-initiated programs. For example, the hub should facilitate long-term skills acquisition programs where seasoned business professionals are offered incentives in exchange for supporting entrepreneurs. 50% of the participants in the survey agreed that this would be an extremely beneficial action for South African entrepreneurs.

Local connectedness goes together with global connectedness (Global Start-Up Ecosystem, 2019). Globally connected entrepreneurs can tap into a worldwide circulation of ideas, knowledge, talent and capital. Through global networks, start-ups can access global

customers at early stages and develop globally leading products and business models (Brown & Mason, 2019). The survey indicated that this key factor is lacking in the South African landscape. Results from the online survey indicated only 6% of participants indicated that South African entrepreneurs are globally connected. The majority of survey participants ranked the South African ecosystem as only moderately or slightly connected with other regional and international ecosystems.

The paper recommends the development of a global mind-set among ecosystem players and policy makers. The first step towards global connectedness involves the adoption of a pan-African approach. This requires the government to take on the role of facilitators by fostering greater collaboration with other thriving African entrepreneurship ecosystems. The Indo-Dutch #StartUpLink partnership between the Netherlands and Indian government serves as an example of facilitating global connectivity (Ministry of Economic Affairs, 2011). Indo-Dutch Start-up Link is a one stop online platform to enable investors, incubators and aspiring entrepreneurs from India and the Netherlands to connect with one another. The platform facilitates knowledge exchange, and assists entrepreneurs through their lifecycle with specific focus on funding, market expansion, feasibility testing, business structuring advisory, enhancement of marketing skills, and technology commercialization.

### Tabulation of Findings and Proposed Policy Recommendations

Finding and policies (Tables 1 & 2).

	Extreme (%)	Serious (%)	Moderate (%)	Slight (%)
To what extent is the regulatory environment an impediment to innovation?	23	35	24	18
To what extent is a lack of local connectedness and support an impediment?	56	25	13	6
To what extent is the South African entrepreneurship ecosystem globally connected?	6	6	50	38

	Extremely beneficial (%)	Seriously beneficial (%)	Moderately beneficial (%)	Slightly beneficial (%)
To what extent would the introduction of a Start-Up Act be beneficial to technology-based entrepreneurs in South Africa?	65	35	0	0

To what extent would the introduction of a regulatory sandbox be beneficial to technology-based entrepreneurs in South Africa.	45	50	5	0
To what extent would the regulation, support and promotion of new modes of financing such as equity crowdfunding, angel funding and peer-to-peer lending be beneficial to technology-based entrepreneurs in South Africa?	50	50	0	0

## CONCLUSION AND DISCUSSION

South Africa needs to promote entrepreneurs that are motivated to grow and prosper within the South African environment and through engagement with the global digital economy. This paper provides a reform agenda which involves the implementation of a focused entrepreneurship strategy, explicitly directed at technology-based entrepreneurship aimed at promoting innovation and creating jobs. Based on the literature and reports investigated in the paper, coupled with the findings of the survey some policy recommendations were made. These recommendations include the revision of the national entrepreneurship strategy and further optimisation of the regulatory environment through the introduction of an online platform to facilitate the incorporation and registration of innovative start-ups. Furthermore, the paper advocates for more effective measures to regulate innovation. These measures include the utilisation of data to inform regulatory decisions, a principle-based approach and the incorporation of cluster specific minimum regulatory sandboxes. To decrease the existing funding gaps. The paper recommends strengthening angel funding networks, government and private sector collaborations through match funding programs as well as the promotion of alternative modes of funding. In order to improve local connectivity, the study recommends the adoption of a government designed portal in the form of an Online Hub. The Hub aims to bring together all the players within the ecosystem. The paper further advocates for a pan-African approach towards international connectivity. This study adopted a limited sample size consisting of twenty survey participant, as such the findings cannot be generalised and are subject to limitations. Furthermore the history, context and economic circumstances in South Africa causes the findings of the paper to be unique. Further research areas require conducting a survey with an increased data size to optimise the reliability of the findings. Given the context of racial segregation through the apartheid system in South Africa further research would require specific examination of the technology-based entrepreneurship ecosystem in relation to Black South Africans and previously disadvantaged communities. This paper proposes further re-evaluation and expansion of the entrepreneurship framework in South Africa.

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