Incubating Graduate Entrepreneurs in Kenya: Nested Case Studies of Kenyatta University Chandaria Business Innovation Incubation Centre

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Abstract

High unemployment rate in Kenya has contributed to policy focus on entrepreneurship. In response, universities have incorporated entrepreneurship in their curricula albeit, to a lesser extent, through incubation of social entrepreneurs. The objective of this study was to demonstrate how social entrepreneurship skills are nurtured through incubation centers. A nested case study research approach was used to select relevant social entrepreneurship projects incubated at Kenyatta University's Chandaria Business Innovation Incubation Centre (KUCBIIC). The study involved literature review and in-depth interviews with KUCBIIC staff, entrepreneurs, staff and clients of selected incubation projects. Findings indicated that the incubation hub has enabled development of ideas into unique products which not only contribute towards employment but also provide solutions to various societal challenges.

***Keywords*:** entrepreneurship education, incubation, innovation

Introduction

Universities play an invaluable role in the creation of knowledge, passing it on to the next generations and utilizing it for the betterment of society as a whole. They take a leading role in any country's economic development efforts and it is no surprise therefore, when universities pay attention to areas of knowledge that would address countries' pressing matters. One of the notable concerns especially in Africa today is the issue of graduates' unemployment that is weighing heavily on the continent's ability to create, and make use of her wealth. Entrepreneurship education has inevitably been fronted as one of the keys to unlock Africa's potential. The idea behind this thinking is that graduates with entrepreneurial and especially the social entrepreneurial skills would have a higher chance of creating work and livelihoods for themselves,

and their communities. These entrepreneurs would make money from the entrepreneurial ventures, and still solve social problems.

Globally, a number of institutions are now targeting to nurture social entrepreneurship by setting up dedicated incubation centers. These are establishments that nurture new or emerging firms until the market assimilation period is attained (Vardhan & Mahato, 2022). They offer infrastructure and business support services with the primary aim of accelerating the firm's learning process (Bruneel et al. 2012). According to the American National Business Incubation Association, business incubation centres primarily seek to accelerate the development of startups by availing targeted resources (Al Dajani et al., 2014).

Incubation centres are praised for their ability to create employment and generate wealth thereby reducing poverty levels (Aldrich & Zimmer, 2011). Ombagi (2010) further acknowledges that business incubations create a platform for entrepreneurs to access business information, knowledge, networks, and finances for startups. These centres are avenues through which ideas are nurtured into viable business through expert mentoring and seed funding. They build the capacity of entrepreneurs to develop and employ innovative approaches in solving societal problems (Hmayed, et al. 2015).

Africa needs these incubation centres more than any other continent if the high levels of unemployment in the continent are anything to go by. But most of these centres are based out of the continent and only a few are to be found in Sub-Saharan Africa. World development indicators, for instance show that, today, the unemployment rate for the continent is around 8.0 per cent corresponding to a total unemployment of 38.1 million. In addition, a paper published in 2016 by the African Development Bank on "job for youth" shows that while 10 to 12 million graduates enter the workforce each year, only 3.1 million jobs are created, leaving vast numbers of graduates unemployed (African Development Bank, 2018).

Besides, the continent also faces the problem of underemployment and working poverty according to the International Labour Organization (ILO) (2016). Whereas ILO, in its World Employment and Social Outlook (2016) reveals that the graduates unemployment rate in Sub-Saharan Africa slowed down in a trajectory which began in 2012, reaching 10.9 per cent in 2016, and 10.8 in 2017, underemployment among youth in the region was highest globally with 64.4 million (about 70 per cent) of working youth living in extreme or moderate poverty (less than $3.10 per day) in 2016. This number has been increasing steadily by as much as 80 per cent for the past 25 years.

The fact that youth labour force participation rate is the highest in Sub-Saharan Africa at 54.2 per cent, even though a little comforting greatly obscures the diverse realities experienced in different countries. The unemployment outlook for graduates in major countries of the region remains quite mixed whereby in South Africa, more than half of all active graduates remained unemployed in 2016, representing the highest graduates' unemployment rate in the region. The World Bank places the unemployment rate in South Africa now as higher than at the end of apartheid, with approximately 50 per cent of the 15–24 age group out of work (World Bank, 2015). This is double the national rate of unemployment. Unemployment among Kenyan youth is currently estimated at 7.27 per cent up from 6.65 in 1999 (Plecher, 2020).

The challenge clearly lies in harnessing the continent's demographic dividend. Africa is considered the world's youngest continent with its youth population expected to hit 321 million by year 2030, which will be an increase of about 42 per cent from 2015. And by 2050, this population would likely rise to over 830 million (United Nations, 2019). This reservoir of human capital could be a source of civil conflict and social tension if the continent fails to create adequate economic opportunities to help educated young people obtain a decent living (Baah-Boateng, 2016). Chiunta (2017) notes that in the absence of engagement in productive activities, the youth bulge can become a demographic bomb because a large mass of frustrated graduates is likely to become a potential source of political and social instability in addition to the predisposition of risky behaviour such as drug and substance abuse.

University education could play a role in harnessing Africa's demographic dividend through the training of relevant skills. Young people are a resource which if well prepared, could propel the Continent to sustainable development. Efforts to meet this need and expectation have seen universities change their approach to incorporating entrepreneurship courses, and business incubation services to prepare students for post-university life (Nyerere, 2018). The courses are aimed at preparing graduates to start own businesses that will generate income, create employment and impact communities through innovative problem-solving approaches. With this, the unemployed graduates would therefore become job creators themselves and not add to the already disturbing statistics of job seeking graduates.

A quick check through university programmes show a rising trend in incorporation of entrepreneurship courses and programmes in most of African universities. The same cannot however be said of university incubation centres. Incubation centres in Africa are only starting to emerge and are currently concentrated in only few countries such as Nigeria and South Africa. But this is likely to change

in the near future as a great potential now exists to enhance the incubation activities through policy pronouncements.

African institutions are all recognizing efforts to engage more graduates in productive livelihood endeavors in their policies at the continental, regional and national levels. For instance, *Agenda 2063 – The Africa we want* is the leading policy that supports these efforts on the continent. The agenda highlights the importance of harnessing Africa's demographic dividend through development of 'skills of the graduates in science, technology and innovation for global competitiveness' (African Union Commission, 2014). The African Union Commission recognizes that the content's youth is an Achilles' heel and advises governments 'to take comprehensive actions, including, expanding education and training, creating job opportunities, combating diseases, enhancing socially and environmentally responsible investment' (African Union Commission, 2014, p.. 70).

These efforts are already beginning to bear fruit as a number of institutions including Kenyatta University have set up incubation centres in Africa. This paper seeks to assess the contribution of university incubation centers to social entrepreneurship in Kenya by using a case of Kenyatta University Chandaria Business Incubation and Innovation Centre (CBIIC).

University Incubators in Africa

There is a growing recognition of the role of universities in the field of entrepreneurship. This is evidenced through entrepreneurial-driven curricula and establishment of business incubation centres. According to Vardhan and Muhato (2022) universities provide potent ground where knowledge generated from research can be capitalized and monetized by actuating the launch of firms which impact the economy at the micro and macro scale. In this regard, university business incubation programmes provide an avenue through which students are mentored and assisted to address their interest in establishing a business (Suroso et al., 2020). The objective of university incubation centres is to build the entrepreneurial capability of students using their learnt intellectual, technical and professional skills (Al Dajani et al., 2014; Bannett et al., 2016).

Incubators like the C4DLab at the University of Nairobi, the Bertha Centre at the University of Cape Town, and the iLabAfrica at Kenya's Strathmore University point to the focus being directed at entrepreneurship by a number of African universities. University incubators and initiatives can have enormous benefits for a startup. They offer opportunity to staff and students to nurture startups through exposure to facilities, mentorship and funding (Nyerere, 2018).

In Kenya, the University of Nairobi's incubator-cum-accelerator, the C4DLab has run a number of key initiatives and events among them the Internet of Things (IoT) which is a network of physical objects, devices, vehicles, buildings and other items that are embedded with electronics, software, sensors, and network connectivity to enable them collect and exchange data. The other Nairobi-based institution that is driving local innovation is the iLabAfrica Research center. ILabAfrica works with various partners, government and industry to nurture start-ups so as to contribute to national economic development.

The LaunchLab at Stellenbosch University in South Africa on the other hand incubates a number of startups run by students and faculty members. Among its notable programmes are the Ideas Programme, and the Pitching Platform which allows 'aspiring and emerging entrepreneurs to pitch their innovative solutions and stand a chance to win seed-funding and LaunchLab incubation support (Stellenbosch University n.d). The university has strong links with industry and innovation companies that provide investment for some startups, an advantage that many universities in Africa lack. University of Cape Town's Bertha Center for Social Innovation and Entrepreneurship, like Stellenbosch University, enjoys financial support from government and partners allowing the on-campus incubator to host activities like the MTN Entrepreneurship Challenge, and also offer scholarships to prospective entrepreneurs and provide funding to select startups.

There are also cases where international university campuses in Africa are bringing in technology and experiences into the continent, in this case, the American University in Cairo (AUC) which, in 2013 launched the first university-based incubator in Egypt the AUC Venture Lab. The Lab enables startups to capitalize on the university's intellectual capital, facilities, research capacities, and networks to foster a thriving ecosystem of innovation, education and responsible business. The other is Massachusetts Institute of Technology (MIT)'s Global Entrepreneurship Bootcamp which is open to African startups, and has thus brought its activities to the African continent pitching tent in Egypt, Morocco, Tunisia through the MIT Enterprise Forum Arab Startup Competition, and South Africa under the Global Startups Labs programme.

Kenyatta University Chandaria Business Incubation and Innovation Centre (KUCBIIC)

KUCBIIC was launched in July 2013. It has graduated a number of incubates both students and non-students. KUCBIIC was established on the understanding that innovation is a key driver of long – term economic growth, the primary basis for competitiveness in world markets and part of the response to many societal challenges including graduates unemployment, which Kenya is

currently facing. It is the first of its kind to be developed in East Africa with the aim of providing effective nurture and management of innovations, and inculcate the principles of entrepreneurship in its trainees. The major push factor in establishing the centre is the recognition that Kenya, and indeed Africa's biggest strength is its manpower but which is not well taped. Education has not effectively tapped the young people's talents in solving societal problems.

KUCBIIC is named after its main sponsor, an entrepreneur himself, Dr Manu Chandaria, and was established to provide effective nurture and management of innovations, and inculcate the principles of entrepreneurship in its trainees. During its official opening, Dr Chandaria acknowledged that "Kenya's biggest strength is its manpower but unfortunately there are many graduates without anything to put their hands on to create business and wealth for themselves and the country." KUCBIIC is open to both Kenyatta University students who form seventy (70%) of the total recruitment, and the community through a competitive selection process. Innovations are incubated for six months to one year, after which the products are rolled out into the market.

The centre operates on a private-public partnership model to produce market-ready graduates who are job creators rather than job seekers thus making it a significant vehicle towards Kenya's socio-economic transformation through creation of employment and wealth. Key partners include: the Chandaria Foundation; Kenya's National Commission for Science, Technology and Innovation; Kenya Industrial Property Institute; Telkom-Orange; and the country's youth enterprise development fund which supports the incubates once their ideas have emerged from the incubation process. This partnership model aims to foster regular interaction between the students, a team of experts and mentors from Kenyatta University and leading industrialists in East Africa who are to chart out commercialization of the products. Products that have been successfully incubated include an Integrated Water Heating System, Spenk Industries Sanitizer, a Social Media Information Technology Application, and Sanaakisasa Designs Art Company dealing with hand drawings.

The major hypothesis for this case study is that social enterprise skills are important in not only enhancing employability and productivity of graduates, but also in uplifting socioeconomic development in an environmentally sustainable way. Social enterprises thus have a huge impact on triple outcomes of financial sustainability through access to employment, self-employment, and earnings, social well-being, and environmental sustainability. Furthermore, given the enormous progress made in offering entrepreneurship programmes at university level, imparting social entrepreneurship skills through deliberate incubations presents the most sustainable mechanism to improve social entrepreneurship in Kenya.

Specific Objectives

The specific objective of this case study was to document and share experiences on how social entrepreneurship skills are nurtured through Kenyatta University CBIIC. The specific objectives of the study were to:

1. document experiences, lessons, and impact of Kenyatta University CBIIC on social entrepreneurship in Kenya.
2. disseminate lessons from the project to university leaders, policy makers and other stakeholders in order to stimulate interest and action in social enterprise skills, training and business incubation.

Methodology

The study adopted a case study research design which allows in-depth examination of a relatively small number of cases when an investigator wishes to understand the context and answer why decisions were taken, how they were implemented, and what resulted out of the process. The case studies were guided by the Realist Evaluation approach, which underlines the importance of context in determining programme outcomes not by asking 'what works?' but 'how or why does this work, for whom, in what circumstances?'. The main focus was documenting the experience and impact of specific social entrepreneurship skills nurtured at the Kenyatta

We reviewed general literature on social entrepreneurship skills development and incubation, including the literature that depicts how different universities nurture social entrepreneurship skills. The literature review enabled us to characterize the general state of knowledge on social entrepreneurship skills development in Africa, and draw lessons that Kenya can build on in its effort to nurture social entrepreneurship skills. Then, we did mapping of business ideas nurtured at Kenyatta University CBIIC that have social entrepreneurship components. This produced a compressive sampling frame from which we selected cases to study. We did this through review of key documents for the cases to extract key characteristics of social entrepreneurship such as objectives, design, nature of skills being nurtured, the extent of application of skills, communities engagement, and emerging outcomes. The documents were first sourced from websites of the case projects as well as through direct contacts with both the organizations and Kenyatta University CBIIC office. The checklist and narrative summary resulting from this exercise was used to both characterize the state of efforts to nurture and apply social entrepreneurship skills, and to select case study businesses.

Using the comprehensive list of cases that we mapped, we selected four nested case studies. The key project features that informed the selection included business objectives, design, extent of engagement with communities, and implementation stage. We also conducted a total of 14 semi-structured interviews with key skill development stakeholders at Kenyatta University CBIIC, case business incubation beneficiaries and their employees to understand their perspectives on the impact of the skills on society. Further information from key stakeholders was collected through interviews with products consumers. Finally, triangulated evidence from the multiple sources above in order to generate a concise report on the impact of social entrepreneurship skills incubation at Kenyatta University CBIIC. Thematic content analysis of the qualitative data was utilized to obtain the findings.

Findings and Discussion

Study findings presented in this report feature four case studies of social entrepreneurship incubates at the KUCBIIC. The start-up projects presented are Ecodudu, a start-up that uses insects to produce fertilizer and animal feeds; Africar Track, a car track innovation that uses Global Positioning System (GPS) to provide fleet management solutions; Cleanstar, a start-up involved in production of multipurpose soap for hard water use; and NotonLab, which developed a telephone application that helps identify genuine from counterfeit products. See Table 1 for the summary of the case studies.

Table 1: *Case Studies Summary*

Start-up /case study	Target Market
ECODUDU	Farmers who want affordable alternative products such as the dudu soil and dudu meal. The entrepreneur targets the fish, poultry and pig farmers who want the dudu meal for protein provision for their animals, as well as farmers growing crops and therefore in need of organic fertilizers.
Africar Track	Transport business owners and *matatu saccos* who form 70% of the customers, county governments, individual car owners, and banks who give loans using motor vehicles as collateral.

CleanStar	The target initial market is highly populated low income or slum estates of Nairobi, and the rural towns of Naivasha, Machakos and Tana River who are most affected.
NotonLab	Customers who are vulnerable to exploitation due to lack of information on products in the market, and product manufacturers who often suffer from unfair competition

ECODUDU Start-up

The Ecodudu enterprise was conceptualized by an incubate at KUCBIIC in 2016. The entrepreneur's short stint as an intern in an animal feeds manufacturing plant informed his choice to start the business. In his words, *'The choice of this business idea was conceptualized from my former job where I used to work as a sales representative in an animal feeds manufacturing plant.'* At this work station, the entrepreneur discovered a rising demand for animal proteins beyond supply. An idea was then born in him to try out insect protein as a cheaper alternative. He then embarked on trying out Black Soldier Fly (BSF), an idea which he first presented at the Africa Innovation Festival held at Morocco in 2017. The feedback during the innovation festival gave him confidence to start the process.

Ecodudu utilizes the Black Soldier Fly (BSF) to manufacture organic fertilizers and animal feeds. The BSF feeds on food waste mainly collected from market centres and households. The excretion from the fly is then mixed with the same food wastes which is later dried to produce two types of products, namely *dudu meal* and *dudu soil*. The *dudu soil* is an organic fertilizer which has no harmful chemicals, and is of high nutritional value to the soil. What this technology does in essence is solve triple problems, that of waste management, production of organic fertilizer which is more friendly to the soil and agricultural products, as well as that of high cost of conventional fertilizers. One of the farmers who participated in the pilot phase praised the product's performance and accessibility saying *'I found the organic fertilizer good to the soil, and at the same time it is cheap compared to the traditional synthetic fertilizers we have been using.'* The Dudu meal on the other hand, has nutritional value of about 60% and is used as organic feed for poultry, fish and pigs.

Checking around, the entrepreneur realized that the idea could actually be nurtured at KUCBIIC. At that time, he was seeking technical, networking and financial support to be able to realize his dream. Upon enrollment, KUCBIIC provided him with office space and a platform to network with various government agencies. At the end of the incubation period KUBIIC

networking office linked the entrepreneur with the International Center of Insect Physiology and Ecology (ICIPE) which made the commercialization process easier. ICIPE also provided the entrepreneur with the first batch of BSF eggs to start off the project.

At the time of writing this case, the project was at the pilot stage and had reached several famers even though it had not been rolled out commercially. The response from farmers both those who had participated in the pilot and the rest of the community around them showed a ready demand with several farmers already making purchase inquiries.

Motivation behind the ECODUDU idea

According to the entrepreneur, the motivation to start the social enterprise stemmed from the need to *'give farmers an alternative product that is not exploitative in terms of cost and at the same time a product that is not harmful to their animals and to the soil.'* This was meant to solve farmers' and especially small scale famers' problems arising from cost of inputs, and lack of access to quality animal feeds.

Support for the ECODUDU business

Already, the Kenya Climate Innovation Center (KCIC) was working on plans to assist ECODUDU set up a production plant at Kenyatta University besides helping in certification of its products with relevant government bodies. At the time of writing this case, ICIPE was providing technical support including legislation on use of insect proteins as source of animal feeds. The entrepreneur was working with Kenyatta University and county governments to allow the company collect waste foods once he commences large scale production.

Challenges facing ECODUDU

The entrepreneur cited challenges related to access to funding. He noted that banks were not willing to finance new untested ideas yet the cost associated with starting a new business is quite high. The entrepreneur also expressed frustration with rigid bureaucratic procedures in various government agencies. Other challenges cited included partnering with county governments for provision of waste foods, the teething problems of starting a unique business idea and monitoring the BSF lifecycle.

Overall, this his is a product that received a lot of interest and demand from potential customers even before it was fully commercialized. The product provides an alternative to high-cost fertilizers and animal feeds especially to the small scale farmers who do not have resources at their disposal. The fertilizer or

dudu soil is organic and therefore environmentally friendly while the the *dudu meal* has high protein content necessary for poultry and fish. Additionally, the production of these two products helps clean up the environment of solid waste. There is evidence that waste foods are a major problem in developing countries like Kenya. These countries do not have proper waste disposal infrastructure and thus the waste constitute serious health hazards (NEMA, 20214). In Kenya the responsibility to manage waste lies within the county governments and the *ecodudu* entrepreneur was already looking for ways of partnering with the government on waste collection as raw material for the business.

There is also the thorny issue of graduates unemployment in Kenya which the firm would address. Already the enterprise had created some employment opportunities at both the production and distribution stages. Unemployment in Kenya stands at approximately17 percent and enterprises like *ecodudu* step in to fill the gap while addressing societal concerns like waste management and access to affordable farm inputs.

Africar Track Innovation

Africar Track Innovation is an innovation that uses Global Positioning System (GPS) to provide fleet management mobile application and web-based solutions that are easy to monitor. It provides fleet operators with real time information regarding vehicle location, fuel usage, speed and mileage, and other insights on workforce. This helps investors or product users to reduce operating costs thereby increasing revenue and contributing to vehicular emission reduction from unnecessary trips. In its three years of commercial operation, the innovation has attracted a range of users who find it convenient in monitoring their vehicles without having to be physically resent. Majority of users are *Matatu saccos* (70%), county governments, and individual car owners. Other category of customers is those who require security features for vehicles like banks when providing car loans.

The car tracking system has a digital alarm with a carjacking help button that discretely notifies the owner and friends of the vehicle owner when the car is jacked. Other system components include a switch off button, a fuel consumption calculator, a driver interference notification system, a highly sensitive microphone which enables users or tracking company to monitor the situation of the driver or actions of carjackers and thieves. Benefits of the product include real-time spatial, traffic and speed monitoring; remote notification system preventing interference by drivers or those accessing the vehicle without owner's permission; enumeration of trips per day; keeping record of vehicle maintenance and service plan;and elimination of dangerous

driving behaviour. The tracker technology installed is independent and does not interfere with the mechanical and electrical configuration of the motor vehicles.

Motivation behind the Africar Track innovation

This innovation is motivated by the need to offer security solutions in public transport and thereby generating income. The public transport sector in Kenya, popularly referred to as '*matatu* industry' has been accused of indiscipline and recklessness. Over 12,000 accidents are reported each year majority of which are blamed for careless driving, lack of adherence to road safety regulations including speed limits (National Transport Services Authority, 2016). This gives vehicle owners more control of the use of their vehicles so as to improve security and safety on the roads thus enhancing efficiency and effectiveness in public transport, a system mostly relied on by people of low socio-economic status. In addition, the innovation creates employment for the graduates.

Support for the Africar Track innovation

The Traffic Act in Kenya provides road speed limits for different jurisdictions whereas the commercial vehicle operation regulation 2017 requires the owner of the vehicle to ensure that their vehicle is secure and safely operated to qualify for use as a commercial passenger vehicle. Insurance companies provide policies that encourage possession of a secure and safe car for comparatively cheaper premiums. These policies support the business by providing enforceable clauses that create market for the car track gadget. The car truck provides solutions that meet the needs of investors whose potential business is transportation of passengers and offering any other commercial services. The innovation compels *matatu* drivers who are mostly hired, to adhere to road safety guidelines.

Challenges facing Africar Track Innovation

At the time of this case study, demand for the product services was overwhelming and the company was yet to stabilise its operations. The company was relatively new with about 3 years of operation at the time. Customers raised a concern about frequent down times which forced them to sometimes camp at the company offices seeking services. Other challenges cited include slow internet speed, delays in servicing and supplying the product, and limited awareness and capacity to utilize the product features optimally. For instance, most vehicle owners mainly used the system for security purposes only and failed to leverage on other opportunities offered by the product like millage counts and data logs due to lack of capacity to access such functionalities.

Africar tracking system serves an important niche in the transportation industry, that of streamlining the public transport majorly which caters mostly for the

poor. The ability to track a vehicle in real time has enabled vehicle owners to monitor their vehicles and enhance transparency in the public transport better known as the *Matatu* industry. For instance, through monitoring the speed and location of the vehicle, the owner is able to obtain information on the driver's compliance with stipulated speed regulations. The monitoring of speed is also useful in reduction of speed-related accidents since the drivers are aware that they are under surveillance. Public transport system in Kenya is considered one of the most chaotic, undisciplined sectors that expose users to dangers of accidents and insecurity (Nyachieo, 2018). With the introduction of the technology, the entrepreneurs are confident that, they contributed towards reduction of motor vehicle accidents since its rollout in 2016. The entrepreneurs have in addition created employment to graduates who are engaged in monitoring, technical servicing and office management of the car tracking system.

CleanStar Company

CleanStar Company, launched in 2016, produces a multi-purpose soap that can withstand hard water. The idea was conceived byan undergraduate student of Psychology at the time. The student came up with the idea when he visited a relative in Naivasha, a town 90 kilometers from Nairobi City. Naivasha town, like many parts of Kenya suffers from limited access to clean water. Residents in the town are therefore forced to supplement their water supply with borehole water which is hard water. The entrepreneur experienced the problem using ordinary soap with the hard water in Naivasha. It is this experience that led him to start the process of developing a detergent that would solve the problem. He signed up for training at KUCBIIC that gave him the confidence to develop a prototype for his business. One year later in 2016 he registered a company and set up a production unit in Nairobi. CleanStar Company started supplying the 'hard water soap' (CleanStar Soap) in the highly populated low-income estates of Nairobi. The market has since expanded to the rural towns of Naivasha, Machakos and Tana River. But recognizing that the challenge of access to clean soft water affects many parts of the country, the company has recently entered into a partnership with a large-scale manufacturing company so as to increase its production capacity and lower its operating costs with the aim of reaching all affected populations.

In his words, the entrepreneur stated that '*taking a bath and doing laundry while in Naivasha was very problematic and I wondered how people were living with the problem.*' The benefit of making money and creating employment only followed as he was set to solve the problem of cleaning and doing laundry using ordinary soap with hard water.

Support for the CleanStar business

Municipal water scarcity and intermittence in rural and urban areas has led to reliance on hard borehole water. The water resource management strategy 2016 seeks to promote groundwater sources to augment the municipal supply which will necessitate the development of products that complement this water source. The CleanStar soap, as a hard water friendly detergent, therefore fits in the Kenya government strategy to increase the use of groundwater.

Challenges facing the business

Initially, the main challenge was marketing his product and getting customers, This problem was quickly resolved when the customers learnt about its benefits particularly its suitability with hard water. Most of them learnt about the benefits through word of mouth from those who had used the soap.

By and large, CleanStarsoap is helping address one of the biggest challenges facing many populations in Kenya who have no access to clean or soft water. The product benefits the community in several ways ranging from cost effectiveness, ability to clean within a short time, and to serve more than one purpose effectively (dish wash, laundry and bathing). One of the users explained the difficulty they were experiencing before the introduction of CleanStar soap. She said that Cleanstar came in as a 'savior' as it is suitable for use with hard water, is multipurpose, and also most affordable compared to other brands in the market. The user who is based in Naivasha town pointed out that *'it had always been difficult to use other brands of soap but CleanStar has made cleaning easier for us. It is cheaper compared to other major brands in the market…what is more, it does not damage my skin*!'.

Moreover, the company is creating jobs both at the production and distribution stages. One of the distributors described the soap as '*a fast moving product which has increased my business sales because of its immense benefits particularly its suitability for use with hard water.'*

NotonLab Innovation

Noton is a start-up that developed a mobile application called *Tambua* through nurture at KUCBIIC. The start-up brings together two young entrepreneurs both with different education backgrounds. One is trained in forensic science while the other one is a lawyer by profession. The two were close friends and had initially applied to KUCBIIC with the intention to nurture an innovation, an anti-choking technology to save babies from choke related deaths. It was while at Chandaria that they changed their pursuit from developing an anti-choking technology to developing the *Tambua App. Tambua* is a Swahili word

for 'identify'. With a telling slogan *Don't just buy, get real!* The application works by identifying genuine from counterfeit products through a simple QR scan of a product. Once installed in a mobile phone, one can scan and identify the genuine products in the shelves provided they are in NotonLab database.

Motivation behind the NotonLab innovation

The motivation behind this is a case where one of the entrepreneurs' relative was exposed to counterfeit drugs that almost cost her life. A check back with the doctors when her condition worsened revealed that the prescription drugs she was taking were not genuine. Knowing that what they encountered may be a problem affecting many in the population especially the poor, the entrepreneurs embarked on developing a technology that would be used to identify genuine products from counterfeits, and one that could be easily accessible by many. This is the experience that led the entrepreneurs to developing the *Tambua App.* As at the time of this study, the application has been in the market for about two years.

The entrepreneurs revealed that money was not their most important consideration in developing the technology. They were happy with the results so far, being able to offer a solution to the problem of counterfeit drugs even though they were yet to break even. At the time of writing this case, the *Tambua App* had received a nod from Kenya Pharmacy and Poisons Board to put all drugs in Kenya on the platform. This is considered a big breakthrough in the commercialization of the product given that the Board is responsible for regulation of distribution and use of pharmaceuticals in the country. The mission of the Board is 'to ensure the availability of pharmaceutical services in Kenya which satisfy the needs of all for the prevention, diagnosis and treatment of diseases using safe, efficacious, high quality and cost-effective pharmaceutical products. Big pharmaceutical companies in Kenya like Cosmos had already registered their drugs on the platform and more were expected to come on board.

Support for NotonLab business

Kenya, like other developing countries, actively fights counterfeiting of products. There are thus a number of policies and regulations that prohibit counterfeiting of all products including that of pharmaceuticals. The policies are guided by the Anti-Counterfeit Act no. 13 of 2008 which defines counterfeiting in relation to medicine as 'the deliberate and fraudulent mislabeling of medicine with respect to identity or source, whether or not such products have correct ingredients, wrong ingredients, have sufficient active ingredients or have fake packaging' (Republic of Kenya, 2008). The NotoLab start-up therefore fits in the Kenyan government priorities to provide quality services.

Challenges of NotonLab business

The major challenge the entrepreneurs encounter is convincing the consumers to use their product to identify genuine from non-genuine products. The challenge is compounded by the bureaucracies with product manufacturers in approving listing of their products in the *Tambua* platform. The entrepreneurs' entry point through the Pharmacies and Poisons Board would however ease the challenge and secure a buy in from the stakeholders.

Understandably, counterfeit goods and services are on the increase in the market and more especially in the developing world. Counterfeit goods and services hurt the consumers, the genuine brands and, consequently, national economies. They especially hurt the poor and those in remote areas who have less access to both resources, and information. NotonLab was conceived to address this problem by developing an authenticity verification technique. The company leverages on use of mobile technologies to help consumers access quality and genuine products and services through an application known as *Tambua*. The entrepreneurs recognize that the poor in society are usually at a receiving end when it comes to accessing quality goods and services and thus developed an application that would empower them. The fact that many in the population, regardless of their location have mobile phones, the entrepreneurs chose to have this service accessible through the mobile phones so as to reach a wider population. Importantly also, the user of the application would not be charged for installation and use. The costs would be borne by manufacturing companies who register their products on the platform. The entrepreneurs were motivated by the need to make a positive contribution to society and were proud to have established the *App* even though they were not yet making money from it.

Conclusion

Conventional entrepreneurship training in universities in Kenya does not effectively build the capacity of students to translate societal challenges into business ideas as incubation centres do. Incubators provide room to nurture what others would consider 'wild ideas' into commercial businesses. KUCBIIC is one such center that provides a space within which entrepreneurial capacity can be enhanced. The incubation center provides an environment where feasible ideas are nurtured into commercial products. Apart from the business training, the mentorship programme in the center shapes one's entrepreneurial values and attitudes. One of the entrepreneurs who went through KUCBIIC notes that *'if it was not for the mentorship at KUCBIIC, I would be looking for employment myself. But I now learnt the value of creating impact in my society even as I pursue economic gains.'* Through the KUCBIIC, the entrepreneurs established other linkages which have propelled them to higher scales in the business arena.

Some of the most notable are: YALE and Washington Mandela which have offered extensive business training and international exposure to many of the incubates at KUCBIIC. The incubates expressed satisfaction with the level of financial and networking support offered as observed by one entrepreneur '*the resources at Chandaria Incubation Center are more than enough, just using the name KUCBIIC, you are able to get a lot of networks.'* Most importantly, the incubates felt ready to take their ideas to commercial production.

The innovations that have been nurtured at KUCBIIC cut across multiple themes from agriculture, health, energy, business, environment and infrastructure and services such as water and sanitation. At the time of admission into the Incubation Centre, social entrepreneurship is not one of the criteria but it turns out that many of the innovations including the ones we selected for this study are motivated by societal needs and thus end up fitting within the category of social entrepreneurship. These start-ups are helping provide solutions to societal problems ranging from exploitation and indiscipline in public transport, dangers posed by exposure to counterfeit products and medicines, to lack of access to safe and quality fertilizers and animal feeds. These case studies demonstrate the commitment of entrepreneurs to not only get financial rewards, but also help solve societal problems including graduates unemployment and environmental degradation.

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