Journal of Agricultural Science; Vol. 16, No. 8; 2024
ISSN 1916-9752 E-ISSN 1916-9760
Published by Canadian Center of Science and Education

What Are University Incubated Agribusinesses: A Sustainability Description of University Incubated Agribusinesses in Kenya

Racheal G. Nakiganda[1], Dickson Okello[1], Hillary K. Bett[1] & Patience M. Mshega[1]

[1] Department of Agricultural Economics and Agribusiness Management, Egerton University, Kenya

Correspondence: Racheal G. Nakiganda, Department of Agricultural Economics and Agribusiness Management, Egerton University, Kenya. Tel: 256-764-164-747. E-mail: rachealgladysn@gmail.com

Received: April 4, 2024 Accepted: May 27, 2024 Online Published: July 15, 2024

doi:10.5539/jas.v16n9p59 URL: https://doi.org/10.5539/jas.v16n9p59

Abstract

Universities are promoting entrepreneurship incubation as a means of instilling an entrepreneurial mindset and creation of business ventures among university students. This is necessitated by the bulging youth unemployment among university graduates in the world and most sub-Saharan African countries. This initiative aims at creating graduates who are job creators and not job seekers. Despite these efforts, youth unemployment rates continue to rise among most graduates. Moreover, most university-incubated youth-led businesses have a high failure rate with a majority of them not seeing a second birthday. To address this issue, the study sought to examine the nature of incubated agribusinesses and their sustainability performance in seven selected universities in Kenya. A multistage sampling procedure technique along with Cochran's (1963) formula for determining populations that are large and unknown were used to select 272 respondents whose businesses were incubated at their universities. Using an index and descriptive statistics, University Incubated agribusinesses in Kenya on average exist for only one year and five months. Results also revealed that the university-incubated agribusinesses under study were 68.2% sustainable indicating a fair performance. They revealed a higher performance in social sustainability (72.8% of its dimensional scores) as compared to economic and environmental sustainability (65.2% and 70% respectively of their dimensional scores). To ensure the long-term success of university-incubated youth agribusinesses, the study recommends that university business incubators should assess the expectations of their participants before they enroll them. The study also suggests that universities should create standardized policies, and procedures governing all stages of incubation. Moreover, youths with university-incubated agribusinesses need to intensify their economic, social, and environmental practices and strategies to ensure the holistic sustainability of their agribusinesses.

Keywords: incubated businesses, sustainability performance, agribusinesses, entrepreneurship

1. Introduction

The unemployment rate among young people in Kenya keeps on increasing. For example; in the first quarter of 2021 it increased compared to the previous quarter of 2020 (World Bank, 2021). In the age group between 20 and 24 years and above, the rate stood at 16.3 percent. This was an increase from 15 percent in Q4 2020, while in the age group between 15 to 19 years, the unemployment level grew to nearly 7 percent after reaching the lowest level of 2.8 percent in Q4 2020 (Karmer, 2022). This makes youth unemployment one of the major challenges in Kenya, a country where agribusinesses are a significant livelihood to many (World Bank, 2021). According to Farah and Ali (2018), among the many causes of unemployment is the failure to align the education curricula with skill demand by the labour market as well as the youth bulge. Consequentially, the government and non-governmental organizations are trying to mitigate this problem through different interventions. One of the interventions is incubating youths through entrepreneurship skills development and the provision of start-up capital (Ferreiro et al., 2018). Business incubation provides the support and resources necessary to help new ventures succeed in their growth and maturity stages. Incubation centers create an environment where entrepreneurs receive intensive, personalized attention from management consultants, business executives, and other experts in their fields of interest (Mason & Brown, 2014). Since universities play a crucial role in youth skill development, some of the incubation centers are located in universities.

The importance of the university-sponsored business incubator stems from the potential of linking talent, technology, capital, and know-how to leverage entrepreneurial talent, accelerating the development of new

technology-based firms, and speeding up the commercialization of technology (Aebischer, 2015; Hassan, 2020). The goal is to produce entrepreneurial graduates with the potential of creating more job opportunities. Despite these efforts, youth unemployment rates continue to increase, as most incubated and supported youth-led businesses fail to sustain themselves (Donkor, 2021; International Labour Office, 2012; Mwobobia, 2012). By studying the nature of incubated agribusinesses and their sustainability performance in the selected universities, this article suggests ways of sustaining incubated youth agribusinesses to maximize their benefits.

Literature defines incubated agribusinesses as small and medium-sized start-up enterprises/businesses in the agriculture value chain (Ferreiro et al., 2018; Hassan, 2020). These incubated businesses are sponsored by public entities, nonprofit organizations, universities, and private corporations through their respective incubators (Valero et al., 2021). The incubators set selection processes to evaluate, recommend, and select businesses to be incubated (Ramkissoon-Babwah & McDavid, 2014). Every incubated business venture evolves through stages in the process: innovation or seed (conception of the idea for the business venture), start-up (establishment of the business entity, products and services), growth, and maturity (established place in the market and begins to expand the customer base), as well as decline and existence (Cooper & Dunkelberg, 1986; Danna & Porsche, 2008; Eliakis et al., 2020; Tam & Gray, 2016). However, there is no frame of reference for judging whether the incubated business is on or off track and no way to decide whether and to what degree it may need additional resources. With this, incubated agribusinesses continue to face different factors that may favour or hinder their success and sustainability as highlighted by Schwartz (2011).

Over time, research has identified several factors that influence the success of entrepreneurial ventures. Access to working capital, financing, and equity and debt capitalization has been considered most important to sustaining start-ups (Berger & Udell, 1998; Corredera et al., 2021; OECD, 2014). Other studies have pointed out the role of the region in enterprise success. If people work in regions of active entrepreneurship, they are more likely to become entrepreneurs because of the role models and sources of assistance surrounding them (Contín-Pilart & Larraza-Kintana, 2015; Rajchamaha & Prapojanasomboon, 2022; Roden & Stahle, 2017). In addition, community support plays an essential role in sustaining startup business development. This is because not many companies have graduated or left the incubators to leave the communities where they were incubated (Kee et al., 2019; Stumbitz et al., 2018). Because of this, incubated businesses through incubators gain communities' financial, moral, and public relations support.

Tagraf and Akin (2009), as well as Xie et al. (2021) also identify a significant correlation between business success and entrepreneurship characteristics, which include, among others, the need for achievement, innovativeness, proactive personality, generalized self-efficacy, stress tolerance, need for autonomy, locus of control, and risk-taking. With the help of these traits, an entrepreneur can focus their efforts on developing a radical idea that will lead to the founding of a business (da Silva et al., 2019). In addition, in its early stages, the success or failure of incubated and supported agribusinesses squarely depends on the sole ability of the owner(s) (Adisa et al., 2014; Mbogo, 2011; Nair & Blomquist, 2019). This is because incubated agribusinesses are small businesses characterized mostly by individual ownership and operation whereas sometimes, they are group-owned and operated businesses. The operations are micro within a small area with a low financed base, have fewer than 100 employees, and have relatively little impact on their industry (Muhindi & Ngaba, 2018; Yashino & Taghizadeh, 2016). With the question of defining the characteristics of university-incubated agribusiness and their sustainability performance, this study examined university-incubated agribusinesses in three sections that are; social economic, agribusiness characteristics, and business incubation characteristics. On the same note, agribusiness sustainability is described as the ability of an agribusiness to maintain its objectives while standing on its own, as well as posting a positive cash flow without compromising resources for future generations. This was examined as social, environmental, and economic sustainability. The rest of this article is organized as follows: 1.1 Theoretical Framework; 2. Methodology; 2.2 Analytical Framework; 3. Results and Discussions; 4. Conclusion; and 5. Recommendations.

1.1 Theoretical Framework

The study relied on the concept of Corporate Sustainability, which was proposed by Chang et al. (2017). This theory encompasses adopting business strategies and activities that meet the needs of the enterprise and its stakeholders while also protecting, sustaining, and improving the human and natural resources that will be required in the future. To operationalize this concept, the study employed the Triple Bottom Line (TBL) approach, which was developed by Elkington (1997). This approach suggests that an organization can facilitate its movement toward sustainable development by integrating TBL management, which includes three dimensions social, environmental, and economic/financial. The study aimed to ensure the overall sustainability

of the incubated and supported agribusinesses, taking into account their effect on the green environment and society while ensuring their economic sustainability.

2. Methodology

The study was conducted in seven selected Kenyan universities with youth business incubators. There is no central organization or association for university-based business incubators in Kenya. Thus, a list of all public and chartered private universities as provided by the Commission for University Education was obtained and then checked for the major universities in Kenya. These were further verified as to whether or not the individual universities had an incubator that has existed for three years and above with youths venturing into agribusiness in place. According to web searches and confirmatory inquiries, the study purposively selected the seven universities, as indicated in Table 1. These universities consisted of both public and private chartered universities, even though private universities' strategic orientations are utterly different from those of public universities.

Using Cochran's (1963) formula for determining populations that are large and unknown to determine the sample size:

$$n = z^2 \frac{p(1 - p)}{e^2} \quad (1)$$

where, n is the sample size, z^2 is the Z-score of 95% from the table which is 1.96, e is the margin of error (confidence interval) of +/-5%, p is the estimated proportion of an attribute that is present in the population (standard deviation). According to Israel (1992), p = 0.2 is used in situations where a majority of the population may not have the attribute of interest. A smaller number of incubated businesses may last for more than three years when they are not sustainable and may exist by name or in debt but not as a business that can stand on its own (Wedig & Wiegratz, 2018). Thus, 272 respondents were determined for the study. The 272 respondents were distributed equally between the seven selected universities of Kenya, with a minimum of 39 respondents from each university. However, since the study considered only agribusinesses, some of the universities were not in a position to provide a complete number of 39 respondents (students incubated in agribusiness). Therefore, the study maximized universities with a more significant number of university-incubated agribusinesses.

Table 1. Distribution of respondents

S/n	Universities	Incubators	Number of respondents	Percentage
1	University of Nairobi	C4DLab	19	6.9
2	Kenyatta University	Business Incubation and Acceleration Centre	50	18.4
3	Jomo Kenyatta University	JKUAT industrial Park	40	14.7
4	Egerton University	CoELIB and AGLEAD	50	18.4
5	Strathmore University	iLabAfrica Centre	39	14.3
6	Moi University	PTRE Incubation Centre	40	14.7
7	Riara University	Accelerating Entrepreneurship Support in Universities in Kenya (AESU)	34	12.5
TOTAL			272	100

Note. The numbers sampled, as indicated above, were retained after data cleaning.

Source: Author's survey 2023.

2.1 Ethical Considerations

The investigation conducted was guided by moral principles and ethical considerations. To ensure that the study was conducted ethically, the Egerton University Institutional Scientific and Ethics Review Committee granted ethical clearance. Furthermore, the respective universities were contacted before reaching out to the students who went through their incubation programs. Before collecting data, the incubates were informed about the purpose of the study, and their consent was sought. The confidentiality of the information collected was highly prioritized and all data was handled with the utmost care and responsibility.

2.2 Analytical Framework

In this study, descriptive statistics were used to characterize the social-economic, business-related, and business incubation characteristics of university-incubated agribusinesses. The variables used were both continuous and categorical. The descriptive statistics employed in this analysis included mean, standard deviation, frequency

distribution, discrete frequency distribution, percentages, and cross-tabulations using custom tables. Additionally, inferential statistics, such as the t-test, were used to test the significance of the variables and provide deeper insights into the data. Overall, this approach provided an understanding of the agribusinesses under study and their key characteristics.

Furthermore, the sustainability index of university-incubated agribusinesses was calculated. The purpose of the sustainability index was to assess the economic, environmental, and social sustainability performance of these businesses and to formulate dimensional scores of economic, environmental, and social sustainability (Bhanot & Bapat, 2015; Singh et al., 2016; FAO, 2016). To compute the sustainability index, Likert scale statements were used as adopted by Nangobi et al. (2023). According to Bhanot and Bapat (2015), the sustainability index is calculated by adding up the scores of each dimension, which provides a measure of the overall competency of the business relative to its competitors. In this study, the sustainability index dimensions were measured on a scale of 100 percent (Rahman, 2011; Singh et al., 2016). Whereby, each dimension is weighted based on its importance (Nangobi et al., 2023; Rahman, 2011). The economic dimension took the highest weight score of 50% because it facilitates all the activities in the business and is thus the heart of any business. The social and environmental dimensions took equal weight scores of 25% because for any business to prosper, it must be accepted in society and by all stakeholders at the same time, for agribusinesses largely depend on agriculture and environmental performance.

To evaluate the economic sustainability of university-incubated agribusinesses, youths whose agribusinesses were incubated were assessed on strategies they apply to ensure the financial well-being of their agribusinesses. These included: having productivity improvements, having organic expansions, having paying customers for their products (market), proper management of business money and having working capital, being able to make profits, having access to finance and market information, making savings, paying local tax, and considering free yet effective marketing strategies.

To evaluate environmental sustainability, five aspects that depended on the strategies agribusinesses apply to ensure that they live in harmony with their environment and their understanding of the relationship between the environment and the agribusinesses were considered. These strategies included: identifying and understanding the interdependence between business activities and the environment, designing and implementing effective, sustainable production plans, using natural resources efficiently by employees, and proper waste management during business operations. Lastly, the social dimension was evaluated by assessing eight aspects of strategies startup businesses apply to ensure a positive relationship and well-being of the society in which they operate, employees, and other stakeholders. These included among others: building active relations and trust with stakeholders, resolving conflicts, and engaging the community in the social activities of the business.

The sub-scores for each dimension were thus computed based on the number of practices and strategies reported by the university-incubated agribusinesses. These sub-scores were then used to compute the sustainability index using Equation 2.

The sub-scores for each of the dimensions (sub_i) were computed as follows;

$$sub_i = \sum_{qi=1}^{n} \frac{s_a}{U_q} \quad (2)$$

where, qi are pratices and strategies asked under each given dimension, U_q is weight of the number of practices and strategies asked under each given dimension, s_a is number of practices and strategies reported in university incubated youths' agribusiness. These sub-scores were thus used to compute the sustainability index as follows;

$$UIASI = \sum_{i=1}^{3} U_i \cdot sub_i \quad (3)$$

where, UIASI = University Incubated Agribusiness Sustainability Index, Sub_i is Sub-scores of the three sustainability dimensions, i is sustainability dimensions (economic, social, and environmental) and, U is weights of the respective dimensions.

The calculated University Incubated Agribusiness Sustainability Index was then used to assess the performance of university-incubated youths' agribusiness through descriptive statistics, such as mean estimation, and upper and lower boundaries.

3. Results and Discussions

This section presents the categorical and quantitative characteristics of university-incubated agribusinesses as represented by 272 respondents from the seven major universities surveyed in Kenya. These characteristics are

presented in three sections: Socioeconomic, Agribusiness information, and Business incubation characteristics. Furthermore, the constructs in the respective sustainability dimensions including economic, environmental, and social sustainability are described. This aided in identifying the particular areas in the dimensions that may need improvement. Then, using the sustainability index, the study characterizes the sustainability performance.

3.1 Social-Economic Characteristics of Student Entrepreneurs

The study determined the socioeconomic characteristics of the incubates to better understand their demographics. According to the findings, university-incubated businesses are owned by both male and female incubates, with males making up the majority (59.1%). This suggests that male students are more inclined towards entrepreneurial activities and have a higher desire to create their businesses as compared to their female peers. These results are in line with previous research conducted by Shi and Wang (2021), which also indicates that male students are more actively involved in entrepreneurship. However, it is worth noting that the difference in participation rates between male and female students is relatively small (18.2%), which could be attributed to the current emphasis on gender equality across all sectors (Acosta et al., 2021; Giroud & Huaman, 2019). Overall, these statistics indicate that university incubation programs successfully encourage entrepreneurship with a mix of gender participation, as highlighted by Hassan (2020).

Furthermore, the study shows that a significant number of student entrepreneurs were single (72.1%), while the remaining (27.9%) were married. It is possible that the majority of students at universities are young and focused on their careers, which could explain why marriage is not a priority for many. However, the results from the cross-tabulation in Table 3 indicate that married individuals have a higher percentage of existing businesses than their single counterparts. In other words, married individuals tend to have more responsibilities, which may motivate them to invest more in businesses than single individuals (Kolvereid, 2018; Pfeffer & Ross, 1982).

Results presented in Table 2 highlight that student entrepreneurs pursuing higher degrees, such as undergraduate degrees and postgraduate degrees, have a significantly higher participation rate in incubation programs (51.0% and 19.2%) compared to those pursuing certificates and diplomas (16.3% and 13.5%). This could be attributed to the fact that universities in Kenya offer a wide range of degree and postgraduate programs, while certificates and diplomas are typically offered by TVETs (Technical and Vocational Education and Training) (Mohammad et al., 2021). Moreover, the study finds that diploma students have a larger percentage of pre-existing businesses (89.3%) than non-existent businesses (10.7%). Conversely, postgraduate students have the lowest percentage of pre-existing businesses (67.5%), with 32.5% having non-existing businesses, an area that could be further researched. These results are in line with Lackéus (2015), who suggests that education plays a crucial role in entrepreneurial engagement, with most respondents affirming the positive impact of education on their involvement in incubation as an entrepreneurial activity. Respondents agreed that their education helped them develop an entrepreneurial mindset, equipped them with skills for their agribusiness, and demonstrated the value of entrepreneurship in terms of starting a business.

Table 2. Social economic factors

Variable	Category	Frequency	Percentage (%)
Gender	Male	161	59.1
	Female	111	40.9
Marital status	Single	196	72.1
	married	76	27.9
Education level	Certificate	44	16.3
	Diploma	37	13.5
	Degree	139	51.0
	Postgraduate	52	19.2
Self-employed parents	Yes	154	56.7
	No	118	43.3
Business experience prior to incubation	Yes	136	50.0
	No	136	50.0

The data presented in Table 2 indicates that a significant proportion of the students who participated in the incubation program had parents or guardians who were self-employed. On the other hand, a small percentage of students had parents or guardians who were not involved in self-employment. Further analysis in Table 3 shows

that students with self-employed parents or guardians had more existing agribusinesses as compared to those without self-employed parents or guardians. This highlights the crucial role played by parents or guardians as a social network influencing entrepreneurship among university students. Results affirmed this finding with a majority of the respondents whose parents or guardians were self-employed acknowledging their parents' significant contribution to their entrepreneurial journey. The students reported that their parents encouraged them to start their businesses, provided them with business advice, and even gave them startup capital. Additionally, some respondents mentioned that they gained valuable experience by working with their parents or guardians. These findings are consistent with prior research by Ranwala (2016) that suggests that family background as a social network can play a vital role in promoting entrepreneurship.

Findings further reveal a significant disparity of 50 percent in the number of students who join incubation with prior business experience compared to those without any previous experience. The results in the custom Table 3 suggest that prior experience in business could potentially provide an added advantage to business existence and performance. The data indicates that the majority of students who had previous business experience before joining the incubation program had existing businesses in comparison to those who did not have any existing agribusinesses (76.0% *vs.* 24.0%). On the other hand, students without prior business experience had fewer operational agribusinesses than non-existing agribusinesses (74.0% *vs.* 26.0%). This shows a difference of only 2 percent. It is worth noting that having prior business experience equips individuals with the necessary knowledge and skills to manage and operate a business effectively. The study also highlights that business management is one of the primary reasons why many agribusinesses fail. Therefore, it is possible that students with prior experience had a higher success rate in their agribusinesses due to their understanding of business management principles.

Table 3. Characteristics of agribusinesses and status of business existence

Indicators Category		Whether the business is still in existence or not	
		Yes (%)	No (%)
Marital status	Single	70.8	29.2
	Married	74.0	26.0
Education level	Certificate	75.0	25.0
	Diploma	84.2	15.8
	Degree	73.2	26.8
	Postgraduate	58.1	41.9
Self-employed parents	Yes	75.8	24.2
	No	66.2	33.8
Business experience before incubation	Yes	73.1	26.9
	No	70.5	29.5
Business registered	Yes	76.4	23.6
	No	67.9	32.1
Number of partners	2-3	100.0	0.0
	4-5	67.7	32.3
	6-7	40.0	60.0
	8-9	33.3	66.7
	Above 10	0.0	0.0
Stage after incubation	Ideation	11.6	27.3
	Startup stage	33.9	36.4
	Growth and establishment	43.8	27.3
	Expansion	10.7	9.1
	maturity	0.0	0.0

Lastly, results revealed that individuals who participate in university incubation programs possess several entrepreneurial traits on average. These traits include being proactive, optimistic, innovative, and having an internal locus of control, which means they believe their success or failure in business is determined by their actions. Additionally, they exhibit self-efficacy, a high-risk-taking propensity, and decisional freedom, which means they can independently decide what, how, and when to venture into business. These traits have the potential to enhance entrepreneurship performance, as supported by various studies such as those conducted by

Crowley and Jordan (2017), Ncokazi and Mpiti (2023), and Yangailo and Qutieshat (2022). However, the results also revealed that most of these students tend to avoid competition, even though studies by Crowley and Jordan (2017) suggest that competition can lead to increased business-level innovation.

3.2 Agribusiness Characteristics

This section characterizes university-incubated agribusinesses in two ways; first, it describes the nature of the agribusinesses in terms of agribusiness existence and composition. Furthermore, the section examines entrepreneurial traits in terms of the personality of incubated students in universities and their perception of running their own businesses. This aided in giving an overall description of university incubation agribusiness in terms of business existence and the personality and perception of their owners. With this, a clear description of university-incubated agribusinesses was drawn.

Results presented in Table 4 show that the agribusinesses under study had an average operating period of one year and five months. Findings reveal that most of the respondents had businesses that were still active at the time of data collection, as opposed to those that had closed down (75% and 25%, respectively) (Table 5). The shortest duration of existence was two months, while the longest was four years. The findings also revealed that a significant number of agribusinesses that failed closed down within a year after incubation, with some shutting down even before a month had passed. The maximum time such businesses took to fail after incubation was three years. This reveals that the majority of these incubated agribusinesses do not get to see their second birthday and those that strive much to see it don't get to see their fifth birthday. These findings are in line with Jorgensen (2011), Kaiburi et al. (2012), and Mwobobia (2012), who contend that while the incubators seek to develop entrepreneurship by providing complementary services that support and promote the skills and expertise of the entrepreneur approximately half of all new entrants survive less than five years. It's important to note that these agribusinesses have provided employment opportunities, ranging from at least two employees to a maximum of eight people, excluding the business owner(s). This indicates that most of the businesses are micro businesses (Adisa et al., 2014; Mbogo, 2011; Nair & Blomquist, 2019).

Table 4. Information on agribusiness existence

Items	N	Mean	Std. Deviation	Minimum	Maximum
Duration of business existence	272	1.424	0.913	0.167	4.000
Number of employees	272	1.550	1.699	0.000	8.000
Period of business closed	68	1.061	0.559	.0830	3.000
Duration of incubation	272	4.199	4.644	0.230	24.000

Based on the findings presented in Table 5, it can be observed that the ownership status of agribusinesses incubated by universities are predominantly sole proprietorships, accounting for 72.6%. Partnerships and corporations make up 25.5% and 1.9%, respectively. This trend may be attributed to the fact that most students are more likely to join these incubation programs as individuals instead of groups or partners. Among the sole proprietorships, it was observed that the majority of them were owned by male entrepreneurs. This could be because males have a stronger desire to own businesses as compared to their female counterparts, which is also noted in a study conducted by Shi and Wang (2021) that suggests that male students are more involved in entrepreneurial activities compared to their female counterparts. The study also revealed that partnerships usually involved a range of 2 to 8 partners, with a range of 4 to 5 partners being the most common type of partnership, accounting for 66.7% of the total. Furthermore, mixed-gender partnerships were found to be the majority, accounting for 81.8%, while single-gender partnerships were less common, with only 9.1% male and 3.6% female. This indicates the active participation of both male and female students in incubation programs, which is consistent with the results of Tiren's (2020) research, which also found active participation of both genders in incubation programs.

The study further found that 41.0% of the agribusinesses had already started before joining the incubation program. Meanwhile, 35.9% started during incubation, and 23.1% started after their incubation. This suggests that most students who join the incubation programs want to improve their businesses and have high expectations from these programs. It remains to be seen whether these students achieve their expectations from the incubation programs. On the other hand, for some, incubation programs act as a kick-start for their businesses.

Results in Table 5 reveal that a significant number of agribusiness understudy face various challenges, with business management being one of the most prominent. Among the aspects of business management mentioned included; loss of customers, consistent losses without profits, difficulties in managing cash flow, and sticking to a business plan, with many struggling even after completing the program. This indicates that most students with incubated businesses lack knowledge about managing the daily activities and operations of their businesses, including finance, operations, marketing, and human resources. These findings are consistent with the research conducted by Tiren (2020), which identified business management as a significant challenge facing incubated businesses in Nairobi. Furthermore, findings revealed that respondents whose agribusinesses were not in existence attributed the closure of their businesses to issues such as difficulty in loan repayment, business management challenges, lack of funds to run business operations, and acquiring a white-collar job. Some students also felt that they did not receive enough consultation time during the incubation, while a few believed they did not learn much from the incubation process. Notably, most of these challenges align with those identified by Tiren (2020) in her study on incubated businesses in Nairobi.

Table 5. Agribusiness characteristics

Variable	Category	Frequency	Percentage (%)
Business Existence	Yes	204	75.0
	No	68	25.0
Business registration	Registered	110	40.4
	Not registered	162	59.6
Business ownership	Sole proprietorship	198	72.6
	Partnership	69	25.5
	Corporation	5	1.9
	Cooperative	00	00.0
Sex of Sole proprietorships	Males	115	57.8
	Females	83	42.2
Number of partners	2-3	3	3.7
	4-5	49	66.7
	6-7	15	20.4
	8-9	4	5.6
	10 and above	3	3.7
Sex composition of a group	Females	4	5.5
	Males	9	12.7
	Both male and female	61	81.8
Time of starting business	Started during incubation	73	35.9
	Existed before incubation	84	41.0
	Started after incubation	47	23.1
Reason for closing business	Had no money to run a business	21	31.0
	Lost customers	4	5.2
	Making losses, no profit	16	24.1
	Had management challenges	27	39.7

Source: Author's survey 2023.

3.2.1 The Personality of Incubated Students in Universities and Their Perception of Running Their Own Businesses

The findings further shed light on the optimistic outlook of university students towards entrepreneurship, despite the inherent risks involved. According to Liñán et al. (2011), such positive attitudes can significantly boost entrepreneurial intentions. The findings also indicate that a vast majority of the students possess a certain level of risk tolerance when it comes to starting their own business. This suggests that most of the students seeking incubation have a clear understanding that running their own business comes with risks and are willing to take these risks. Moreover, the majority of respondents view failure as an opportunity to learn and start afresh, and they believe that managing a business is not overly hindered by administrative procedures. These results demonstrate a favorable perception of starting and managing a business among university students, as emphasized by Liñán et al. (2011).

Furthermore, the majority of respondents in the study exhibited a positive perception towards access to financial support and operating a business for a long time. They disagreed with the notion that it is difficult to manage one's own business for a long time due to a lack of financial support. This suggests that most students do not perceive access to finances as a barrier to running their own business. Moreover, the study found that most students had a positive perception of access to information as they did not agree that it is difficult to obtain sufficient information on how to manage their business efficiently. Overall, the study indicates that youth who seek university incubation have a positive perception towards running their own business. However, some respondents exhibited a negative perception towards running their businesses, indicating that some individuals run their businesses in fear of failure and with a try-and-error mentality.

3.3 Business Incubation Characteristics

This section describes the incubation stages and processes through which university-incubated agribusiness go through. It further explores reasons why university students choose to participate in university incubation programs. This provides an overview of the incubation process with an understanding of the services provided to university-incubated agribusinesses.

3.3.1 The Incubation Process

As per the results in Fig. 1 and as described by Eliakis et al. (2020), and Tam and Gray (2016), the majority of young entrepreneurs tend to join university incubation programs during the ideation and startup stages. The entrepreneurs progress through various stages, although some don't show any progress in their business stages, either before or after joining the program. This indicates that there might be times when the incubation process doesn't create an impact, which could be due to the services being provided by the incubation program to the participants being irrelevant or they do not meet the needs of the participants. However, results further reveal that the majority of the respondents reported an increase in their business performance after going through the pre-incubation and incubation phases, while only a few reported to have gone through the post-incubation and acceleration stages.

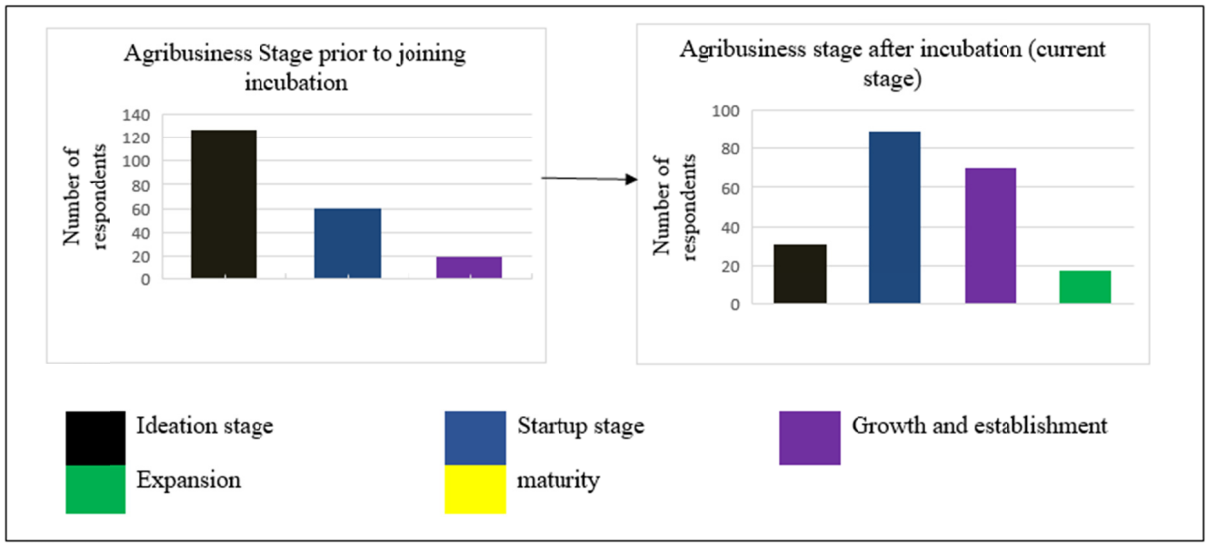

Figure 1. Stage of business before and after incubation

The survey also revealed that most of the respondents joined the incubation program to develop their agribusinesses (40.7%). Others joined to obtain financial support, make business connections, acquire a workplace, or change the type of business. These findings are consistent with those of Lose et al. (2017) in their study as reasons why youths participate in business incubation programs. Most students join university incubation programs through various means such as applications, obligations, invitations by friends, or recommendations. However, it is important to mention that these incubation programs are not open to everyone at the universities but only to those who are able to access application calls or are able to seek out these incubation programs and also meet the criteria of selection to a given call. Despite this, the results in Table 6

reveal that the majority of the respondents were not affected by the requirements of their respective university incubators. Most of them stated that the requirements prepared them for a serious entrepreneurial journey ahead (59.9%), and others mentioned that they did not have any requirements but still joined the incubation program. This highlights the importance of having requirements before entrance, as it not only helps to select appropriate candidates for the incubation process but also gives participants a valuable perception of taking it seriously. It is also worth noting that university incubators have a certain level of leniency when it comes to entrance into their incubation programs.

Table 6. Characteristics of agribusiness incubation

Variable	Category	Frequency	Percentage (%)
Reason for joining the incubation program	Get financial support	95	28.2
	Acquire place of work	4	1.1
	Develop own business	137	40.7
	Make business connections	86	25.6
	Change the type of business	15	4.4
Process of joining incubation	Application	153	56.3
	School requirement	29	10.6
	Invitation from a friend	81	29.8
	Recommended	9	3.4
The business stage prior to incubation	Ideation stage	166	61.1
	Startup stage	80	29.3
	Growth and establishment	26	9.6
	Expansion	0	0.0
	Maturity	0	0.0
Stages of incubation went through	Pre-incubation	175	64.4
	Incubation	73	26.9
	Post-incubation	13	4.8
	Acceleration	11	3.8
Business stage after incubation	Ideation stage	40	14.9
	Startup stage	116	42.8
	Growth and establishment	92	33.7
	Expansion	24	8.7
	Maturity	0	0.0
Requirements for joining incubation	Being in a group	93	28.6
	Requirement as individual	106	32.4
	Student requirement as graduate	36	11.1
	Being a continuing student	91	27.9
Requirement effect on joining	Yes	105	38.5
	No	167	61.5
Effects of requirement on joining	Requirements were too many wanted to quit	14	6.6
	Too easy join felt easy to join	27	13.2
	Didn't have any of the requirements but I joined	42	20.3
	Prepared for a serious journey	123	59.9

According to research conducted by Ahmed et al. (2020), university students who participated in incubation programs received a range of valuable services from their respective incubators. Among the services provided, skills development and training were the most common, with 68.3% of respondents citing this as the primary service they received. In contrast, financial and production support was less common, with 25.4% and 6.2% of respondents receiving these services, respectively. When it comes to financial support, the majority of respondents indicated that they received soft loans, while others received grants or were connected to financial services. Some were even assisted in saving up for capital. For those who received production support, the most common services were being connected to the market or provided with working space. Others received assistance with intellectual property or machinery. Additionally, the table also indicates that the majority of respondents who received support from incubators cited skills development and training as their primary service.

Specifically, 37% received training in business ideation and starting up a business, 23.2% in financial management, 17.8% in marketing, 15.4% in leadership, and 6.5% in proposal writing and grant-winning. However, the least common service provided was production support, which may explain why many incubated students indicated business management as a challenge. These findings suggest that there may be a need for more production support among students who are incubated in universities. Moreover, it highlights an area for further research to investigate why incubators may focus more on training in business ideation and starting up a business rather than providing all aspects of incubation to their trainees.

Furthermore, findings reveal that a significant number of university-incubated youths had a negative response towards the facilities they used during their incubation period. This suggests that these facilities were either not helpful or were inefficient, as reported by the respondents. Additionally, most respondents had unfavorable feedback about the mode of training used and the exhibition participation during incubation. However, they had a positive response towards the topics of training studied, indicating that the training was efficient and helpful. Interestingly, despite the positive revelations stated in a research study by Ahmed et al. (2020) regarding mentorship training and legal services, most respondents did not use these services.

This reveals a need for improvement in these specified areas by the various university incubators. The findings presented in Table 7 provide insights into the reasons why university students participate in incubation programs and the benefits they receive from such programs. A cross-tabulation reveals that the majority of respondents reported acquiring valuable skills in resource management, networking, and funding, as well as having access to working space and enjoying the overall process. However, it is worth noting that a significant number of participants did not achieve their initial objectives for taking part in the incubation program, as indicated in Table 7 presented in a matrix form. This suggests a potential lack of alignment between the expectations of the incubators and the incubates.

Table 7. Reason for joining incubation and gains received

Items			Actual gains from incubation (%)					
			Getting working space	Getting funding	Business development	Resource management	Getting business connections	Had Fun
Reason for joining an incubation program	to get financial support	% within reason for joining	16.9	14.0	27.0	20.8	15.7	5.6
	to acquire a place of work	% within reason for joining	26.8	17.1	22.0	19.5	12.2	2.4
	To develop my own business	% within reason for joining	11.9	12.6	28.7	21.8	18.8	6.1
	to make business connections	% within reason for joining	12.8	9.6	26.2	23.5	18.7	9.1
	to change the type of business	% within reason for joining	15.6	12.5	21.9	21.9	15.5	12.5
Total		% of Total	14.4	12.4	26.9	21.9	17.5	6.9

3.4 Description of the Constructs in the Respective Sustainability Dimensions

3.4.1 Economic Sustainability

According to the findings, the average mean score of the constructs that constitute economic sustainability was 3.265, indicating that these agribusinesses are performing well in this dimension. Using this average mean to make decisions, the study further examined individual items to evaluate their performance, revealing that most agribusiness owners are transparent in their financial dealings, maintain proper records, and have savings set aside for their businesses. They are also making profits while taking advantage of market opportunities and using efficient marketing strategies to sell their products. The study also found increased productivity, as evidenced by more products being produced, which is a positive indication of the economic strategies adopted to sustain these agribusinesses. However, the study identified some areas where these agribusinesses need improvement.

Most of them lacked the working capital to run their businesses daily, did not use modern technology to maximize their production, and did not have organic expansion in terms of increasing employees or acquiring new equipment. They also did not consider using used equipment to minimize expenses. Additionally, many agribusiness owners revealed that they do not pay local taxes for their businesses, despite the Kenya Revenue Authority indicating a minimal 1% tax rate of gross turnover. This could be due to the lack of financial literacy programs for SMEs in Kenya, which is crucial in bringing about growth (Lusimbo, 2016; Solomon, 2021). Overall, the study highlights the economic strengths and weaknesses of university-incubated agribusinesses and suggests areas where improvement is necessary to ensure their long-term sustainability and success.

3.4.2 Environmental Sustainability

Based on the findings, the average mean of the environmental sustainability constructs used to evaluate each particular item is 3.496. This suggests that most individuals with university-incubated agribusinesses possess a good understanding of how their businesses are dependent on the environment. They claim to use natural resources efficiently, manage waste properly, and can adapt to climate change in their agribusinesses. However, it is important to note that these agribusinesses are startups and may have minimal environmental impact. As a result, their owners might not be fully aware of their impact on the environment, which means that they may not put in much effort to ensure their environmental sustainability. Therefore, it is crucial to educate such startups on their environmental impact and ways to mitigate it (Huang et al., 2020). Moreover, there is still room for improvement in terms of sustainable production plans. Many of these agribusinesses do not currently have a plan that balances their environmental impact with their operations. Therefore, it is recommended that these startups should develop sustainable production plans to ensure their operations are environmentally sustainable.

3.4.3 Social Sustainability

According to the findings, it can be inferred that university-incubated agribusiness owners have fostered positive relationships with their stakeholders and gained their trust. The average mean used to evaluate each particular item is 3.642. This suggests that most individuals with university-incubated agribusinesses show no discrimination among their employees and other stakeholders who are directly influenced by their agribusinesses. They establish democratic rules, when necessary, among their employees whereby the majority agreed that democratic leadership and management enforce compliance with internal rules and among business partners. They also follow social norms in their communities, indicating that their agribusinesses are well-accepted. However, the study revealed a low level of shared vision with their stakeholders, suggesting that the majority of these individuals have business visions limited only to the owners and less information for other stakeholders who may be interested in their businesses. This could be because most of these agribusinesses are startups that depend on their owners to survive with no or a minimum number of employees (Adisa et al., 2014; Mbogo, 2011; Nair & Blomquist, 2019). Therefore, not many stakeholders are involved in such businesses. Additionally, the study found that the majority of these individuals do not engage in community activities as businesses, while their employees are not from the respective communities where their agribusinesses are located. This may be because most business startups depend on family members, and therefore, employing workers from the business locality may seem expensive. Moreover, others depend on the owners for every operation. Lastly, they revealed a low capability of resolving internal conflicts within their agribusiness. Overall, these findings suggest there is still room for improvement in terms of shared vision, community engagement, and conflict resolution.

3.4.4 Sustainability Performance

The sustainability performance of university-incubated youths' agribusiness in terms of their economic, environmental, and social sustainability, as per the index description, is shown in Table 8.

Table 8. Sustainability performance of university-incubated businesses

Variable	Dimension weights (%)	Mean	Dimension performance (%)	Std. Deviation	Minimum	Maximum
Economic Dimension scores	50	0.326	66	0.059	0.100	0.443
Environmental Dimension scores	25	0.175	68	0.034	0.050	0.250
Social Dimension scores	25	0.182	72	0.034	0.050	0.250
Sustainability Index of Youth's University incubated businesses.	100	0.682	68	0.111	0.200	0.922

Based on the results in Table 8, the agribusinesses under study have an average sustainability score of 68.2%. The social dimension of these agribusinesses performed with an average of 72.8% in comparison to its dimensional weight of 25%. This implies that students who participate in university incubation programs for their agribusinesses strive to create an inclusive environment for all employees and stakeholders. They also follow democratic rules when managing their employees and respect the social norms within which their agribusinesses operate. However, there are still areas for improvement in the social dimension which are discussed previously. Furthermore, the environmental dimension of these agribusinesses followed with an average score of 70% in comparison to its dimensional weight of 25%. This dimension focuses on comprehending the interdependence between business activities and the environment, implementing sustainable production plans, managing waste and natural resources responsibly, and adapting to climate change. Lastly, the

economic dimension followed with an average performance of 65.2% out of 50% of its dimensional weight. This dimension includes productivity improvements, organic expansions, maintaining business records, making savings, paying local taxes, and considering marketing strategies. Results revealed that some constructs of this dimension have fair performance while others need improvement. The sustainability performance of university-incubated agribusinesses is depicted in Figure 2 below.

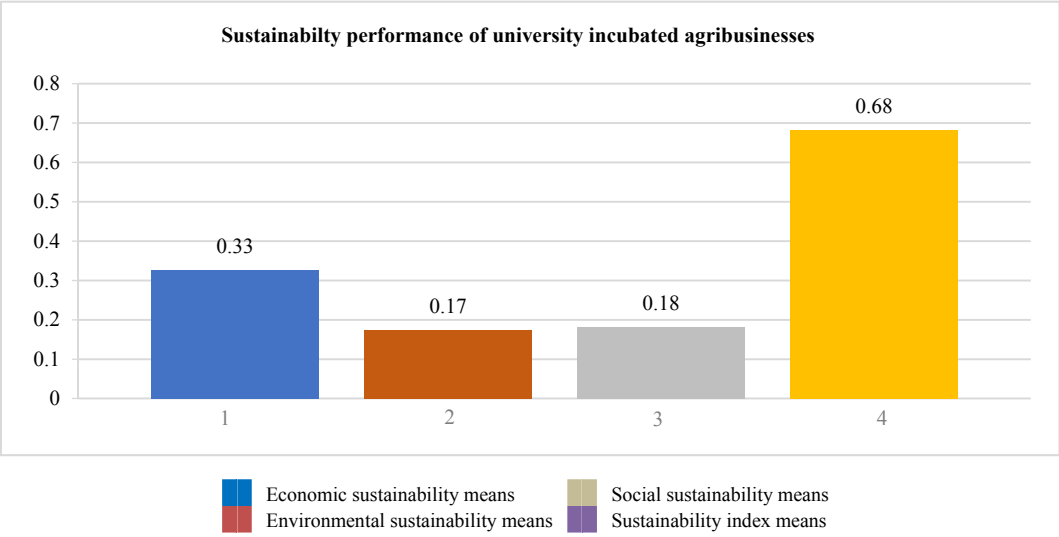

Figure 2. Sustainability Performance

Source: Author's survey 2023.

4. Conclusion

This study indented to define the characteristics of university-incubated agribusiness and their sustainability performance. Results from descriptive statistics revealed that the majority of these businesses exist for one year and five months and on average fail within one year after incubation. Business management is one of the major reasons for the failure of these businesses. The majority of these agribusinesses are sole proprietorships with most of them being incubated for four months while others for a very short period of even one week. These university incubated agribusinesses are owned by male students where a significant proportion of these students had parents or guardians who were self-employed. These student entrepreneurs possess several entrepreneurial traits on average such as being proactive, optimistic, innovative, and having an internal locus of control, meaning that they believe their success or failure in business is determined by their actions. In addition, majority of these student entrepreneurs had already started their agribusinesses before joining the incubation programs, suggesting that most of these students join the incubation programs to improve their businesses and have high expectations from these programs however, the results further suggest a potential lack of alignment between the expectations of the incubators and the incubates.

Furthermore, results of the sustainability index developed using TBL approach described, revealed that university-incubated agribusinesses have a sustainability performance of 68% in general, with a higher performance in social sustainability as compared to economic and environmental sustainability. However, every dimension revealed areas of weakness in its respective dimensional strategies. Thus, a lot of effort is needed to acquire a holistic sustainability performance of university-incubated agribusinesses in all three aspects of sustainability dimensions.

5. Recommendations

(i) Standardizing the stages and time of business incubation as well as assessing the expectations of student entrepreneurs. University business incubators should create standardized policies and bodies governing all university periods and stages of incubation which students interested in business incubation have to take and go through at their respective universities. This will minimize the identified challenge of having not enough time for consultations during the incubation and being incubated for a very short period. In addition, university incubators

should consider assessing the expectations of their participants before they enroll them for the two parties (student and incubator program) to have the same vision for starting the incubation program.

(ii) On the same note university business incubators should incorporate business management modules in their modules of training. This will aid in minimizing the effect of business management challenges on the agribusinesses, a major challenge identified in the study and the common reason why many universities incubated agribusinesses close. In addition, university incubators should consider services such as mentorship, legal services, exhibitions, and business management modules in their modules of training given to the participants of university incubation programs as the study identified that the majority of respondents never actually receive such services.

(iii) Building incubation structures that incorporate the TBL framework; the framework considers and gives an overall outlook on all the factors of sustainability. The performance of the economic sustainability dimension and practices that can encourage social and environmental sustainability of university-incubated agribusinesses should be given close attention by the university business incubators. Likewise, youths with university-incubated agribusinesses should intensify their economic, social, and environmental practices and strategies as well as improve their personality to ensure the holistic sustainability of their agribusinesses. Equal attention should be given to all factors.

References

Abisuga-Oyekunle, O. A., Patra, S. K., & Muchie, M. (2020). SMEs in sustainable development: Their role in poverty reduction and employment generation in sub-Saharan Africa. *African Journal of Science, Technology, Innovation and Development, 12*(4), 405-419. https://doi.org/10.1080/20421338.2019.1656428

Acosta, M., van Wessel, M., van Bommel, S., & Feindt, P. H. (2021). Examining the promise of 'the local' for improving gender equality in agriculture and climate change adaptation. *Third World Quarterly, 42*(6), 1135-1156. https://doi.org/10.1080/01436597.2021.1882845

Adisa, T. A., Abdulraheem, I., & Mordi, C. (2014). The Characteristics and Challenges of Small Businesses in Africa: An Exploratory Study of Nigerian Small Business Owners. *Petroleum-Gas University of Ploiesti Bulletin, Technical Series, 66*(4). Retrieved from http://upg-bulletin-se.ro/old_site/archive/2014-4/1.Disa_Abdulraheem_Mordi.pdf

Ahmed, N., Li, C., Qalati, S. A., Khan, A., & Siddiqui, F. (2020). Role of business incubators as a service provider in entrepreneurship development. *Journal of Entrepreneurship & Organization Management, 9*(1), 1-7. Retrieved from https://www.researchgate.net/profile/Dr-Naveed-Joo/publication

Alvarez, S. A., & Busenitz, L. W. (2001). The entrepreneurship of resource-based theory. *Journal of Management, 27*(6), 755-775. https://doi.org/10.1007/978-3-540-48543-8_10

Berger, A. N., & Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance, 22*(6-8), 613-673. https://doi.org/10.1016/S0378-4266(98)00038-7

Bhanot, D., & Bapat, V. (2015). Sustainability index of microfinance institutions (MFIs) and contributory factors. *International Journal of Social Economics, 42*(4), 387-403. https://doi.org/10.1108/IJSE-01-2014-001

Blair, E. S., & Marcum, T. M. (2015). Heed our advice: Exploring how professionals guide small business owners in start-up entity choice. *Journal of Small Business Management, 53*(1), 249-265. https://doi.org/10.1111/jsbm.12073

Bolland, E. J., & Lopes, C. J. (2018). *Decision-making and business performance*. Edward Elgar Publishing. https://doi.org/10.4337/9781786430168 .00004

Cardella, G. M., Hernández-Sánchez, B. R., & Sanchez Garcia, J. C. (2020). Entrepreneurship and family role: a systematic review of a growing research. *Frontiers in Psychology, 10*, 2939. https://doi.org/10.3389/fpsyg.2019.02939

Cochran, W. G. (1963). *Sampling Techniques* (2nd ed.). New York: John Wiley and Sons, Inc. Retrieved from https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1837525

Contín-Pilart, I., & Larraza-Kintana, M. (2015). Do entrepreneurial role models influence the nascent entrepreneurial activity of immigrants? *Journal of Small Business Management, 53*(4), 1146-1163. https://doi.org/10.1111/jsbm.12153

Cooper, A. C., & Dunkelberg, W. C. (1986). Entrepreneurship and paths to business ownership. *Strategic Management Journal, 7*(1), 53-68. https://doi.org/10.1002/smj.4250070106

Corredera-Catalán, F., di Pietro, F., & Trujillo-Ponce, A. (2021). Post-COVID-19 SME financing constraints and the credit guarantee scheme solution in Spain. *Journal of Banking Regulation, 22*(3), 250-260. https://doi.org/10.1057/s41261-021-001

Crowley, F., & Jordan, D. (2017). Does more competition increase business-level innovation? Evidence from domestically focused firms in emerging economies. *Economics of Innovation and New Technology, 26*(5), 477-488. https://doi.org/10.1080/10438599.2016.1233627

da Silva Marinho, E., Minello, I. F., & Bürger, R. E. (2019). Incubation Process and Entrepreneurial Characteristics: An Interactive Perspective. International *Journal of Business Management & Economic Research, 10*(2), 1574-1586. Retrieved from http://www.ijbmer.com/docs/volumes/vol10issue2/ijbmer2019100202.pdf

Danna, D., & Porsche, D. (2008). Stages of business start-up. *The Journal for Nurse Practitioners, 4*(6), 422-423 https://doi.org/10.1016/j.nurpra.2008.05.001

Donkor, A. (2021). Africa's youth unemployment crisis is a global problem. *Foreign Policy*. Retrieved from https://foreignpolicy.com/2021/10/19/africa-youth-unemployment-crisis-global-problem/?tpcc=recirc_latest062921

Eliakis, S., Kotsopoulos, D., Karagiannaki, A., & Pramatari, K. (2020). Survival and growth in innovative technology entrepreneurship: A mixed-methods investigation. *Administrative Sciences, 10*(3), 39. https://doi.org/10.3390/admsci10030039

FAO. (2016). A scheme and training manual on good agricultural practices (gap) for fruits and vegetables. *Training Manual* (Vol 2). Bangkok: Food and Agriculture Organisation (FAO).

Giroud, A., & Huaman, J. S. (2019). Investment in agriculture and gender equality in developing countries. *Transnational Corporations, 26*(3), 89-113. https://doi.org/10.18356/e7a807e6-en

Hallo, L., Nguyen, T., Gorod, A., & Tran, P. (2020). Effectiveness of leadership decision-making in complex systems. *Systems, 8*(1), 5. https://doi.org/10.3390/systems8010005

Hassan, N. A. (2020). University business incubators as a tool for accelerating entrepreneurship: A theoretical perspective. *Review of Economics and Political Science, 8*(1), 1-17. https://doi.org/10.1108/REPS-10-2019-0142

Holt, M. M., & Scariano, S. M. (2009). Mean, median, and mode from a decision perspective. *Journal of Statistics Education, 17*(3). https://doi.org/10.1080/10691898.2009.11889533

Huang, S. Z., Chau, K. Y., Chien, F., & Shen, H. (2020). The impact of startups' dual learning on their green innovation capability: The effects of business executives' environmental awareness and environmental regulations. *Sustainability, 12*(16), 6526. https://doi.org/10.3390/su12166526

International Labour Office. (2012). *Global employment trends 2012*. International Labour Office. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---africa/documents/publication/wcms_184325.pdf

Jiatong, W., Murad, M., Bajun, F., Tufail, M. S., Mirza, F., & Rafiq, M. (2021). Impact of entrepreneurial education, mindset, and creativity on entrepreneurial intention: The mediating role of entrepreneurial self-efficacy. *Frontiers in Psychology, 12*, 724440. https://doi.org/10.3389/fpsyg.2021.724440

Kee, D. M. H., Yusoff, Y. M., & Khin, S. (2019). The role of support on start-up success: A PLS-SEM approach. *Asian Academy of Management Journal, 24*, 43-59. https://doi.org/10.21315/aamj2019.24.s1.4

Kolvereid, L. (2018). Entrepreneurship among parents. *Journal of Innovation and Entrepreneurship, 7*(1), 1-14. https://doi.org/10.1186/s13731-018-0089-0

Lackéus, M. (2015). Entrepreneurship in education: What, why, when, how. *Background paper*. Retrieved from https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf

Liñán, F., Santos, F. J., & Fernández, J. (2011). The influence of perceptions on potential entrepreneurs. *International Entrepreneurship and Management Journal, 7*, 373-390. https://doi.org/10.1007/s11365-011-0199-7

Lose, T., Maziriri, E. T., Choto, P., & Welcome Madinga, N. (2017). Navigating the reasons behind joining a business Incubation program: Empirical evidence from entrepreneurs in South Africa. *Acta Universitatis*

Danubius. Œconomica, *13*(4). Retrieved from https://journals.univ-danubius.ro/index.php/oeconomica/article/download/3936/4149

Lusimbo, E. N. (2016). *Relationship between financial literacy and the growth of micro and small enterprises in Kenya: A case of Kakamega Central sub-county* (Doctoral dissertation, JKUAT). Retrieved from http://hdl.handle.net/123456789/2236

Madhani, P. M. (2010). The resource-based view (RBV): issues and perspectives. *PACE, A Journal of Research of Prestige Institute of Management, 1*(1), 43-55. Retrieved from https://ssrn.com/abstract=1579837

Mbogo, M. (2011). Influence of Managerial Accounting Skills on SMEs on the Success and Growth of Small and Medium Enterprises in Kenya. *Journal of Language, Technology & Entrepreneurship in Africa, 3*(1), 109-132. https://doi.org/10.4314/jolte.v3i1.66602

Mohammad Shafi, M., Neyestani, M. R., Jafari, S. E. M., & Taghvaei, V. (2021). The Quality Improvement Indicators of the Curriculum at the Technical and Vocational Higher Education. *International Journal of Instruction, 14*(1), 65-84. https://doi.org/10.29333/iji.2021.1415a

Mohammed, H. A., & Adamu, I. A. (2021). Perceived Challenges of Start-Up of Small and Medium Scale Enterprises Among Business Education Graduates in Federal Colleges of Education in North-East, Nigeria. *Kashere Journal of Education, 2*(2), 143-151. https://doi.org/10.4314/kje.v2i2.18

Molina, J. A. (2020). Family and entrepreneurship: New empirical and theoretical results. *Journal of Family and Economic Issues, 41*(1), 1-3. https://doi.org/10.1007/s10834-020-09667-y

Mühlböck, M., Warmuth, J. R., Holienka, M., & Kittel, B. (2018). Desperate entrepreneurs: No opportunities, no skills. *International Entrepreneurship and Management Journal, 14*(4), 975-997. https://doi.org/10.1007/s11365-017-0472-5

Mwobobia, F. M. (2012). The challenges facing small-scale women entrepreneurs: A case of Kenya. *International Journal of Business Administration, 3*(2), 112. https://doi.org/10.5430/ijba.v3n2p112

Nangobi, R., Mshenga, P., & Mugonola, B. (2023). Sustainability of Farmer Organizations in Uganda: The Role of Organizational and Institutional Factors. *Available at SSRN 4312656*. https://doi.org/10.2139/ssrn.4312656

Ncokazi, A., & Mpiti, P. T. (2023). Critical Evaluation of the Relationship between the Need for Achievement and Entrepreneurship Performance: Risk-Taking Propensity, Entrepreneurial Independence and Motivation. *Motivation and Success*. IntechOpen. https://doi.org/10.5772/intechopen.105620

OECD/European Commission. (2014). *Policy Brief on Access to Business Start-up Finance for Inclusive Entrepreneurship: Entrepreneurial Activities in Europe*. Luxembourg: Publications Office of the European Union. Retrieved from https://www.oecd.org/cfe/leed/Finacing%20inclusive%20entrepreneurship%20policy%20brief%20EN.pdf

Pfeffer, J., & Ross, J. (1982). The effects of marriage and a working wife on occupational and wage attainment. *Administrative Science Quarterly*, 66-80. https://doi.org/10.2307/2392546

Rahman, S. (2011). Sustainability of dairy-based self-help groups (SHGs) in Assam: An exploratory study in Kamrup district (Doctoral dissertation, NDRI, Karnal).

Rajchamaha, K., & Prapojanasomboon, J. (2022). Influence of role models on the entrepreneurial skills of science and technology undergraduates. *Education+ Training, 64*(7), 981-995. https://doi.org/10.1108/ET-04-2021-0151

Ramkissoon-Babwah, N., & McDavid, J. (2014). Selecting the right clients for a business incubator lessons learned from the national integrated business incubator system (IBIS) program in Trinidad and Tobago. *Journal of Small Business and Entrepreneurship Development, 2*(3), 13-26. https://doi.org/10.15640/jsbed.v2n3-4a2

Ranwala, R. S. (2016). Family background, entrepreneurship specific education and entrepreneurial knowledge in venture creation: The moderation effect of gender. *Entrepreneurship and Innovation Management Journal, 4*(4), 172-186. Retrieved from https://www.ijsrp.org/research-paper-0916/ijsrp-p5769.pdf

Rödén, M., & Ståhle, H. (2017). *The Motives for Entrepreneurship in Developing Countries; the Case of Nairobi* (Master's thesis, KTH Royal Institute of Technology School of Industrial Engineering and Management, Kenya). Retrieved from http://www.diva-portal.org/smash/get/diva2:1116072/FULLTEXT01.pdf

Shi, B., & Wang, T. (2021). Analysis of entrepreneurial motivation on entrepreneurial psychology in the context of transition economy. *Frontiers in Psychology, 12*, 1-11. https://doi.org/10.3389/fpsyg.2021.680296

Singh, P. K., Sankhala, G., Singh, A., & Prased, K. (2016). Sustainability of Gangatiri cattle rearing. *Indian Journal of Animal Sciences, 86*(8), 936-939. https://doi.org/10.56093/ijans.v86i8.60830

Solomon, F. (2021). *Calculating the Minimum Tax for Your Business in Kenya*. MMS Advocates. Retrieved from https://mmsadvocates.co.ke/calculating-the-minimum-tax-for-your-business-in-kenya

Strandh, M. (2000). Different exit routes from unemployment and their impact on mental well-being: The role of the economic situation and the predictability of the life course. *Work, Employment and Society, 14*(3), 459-479. https://doi.org/10.1177/09500170022118527

Stumbitz, B., Vickers, I., Lyon, F., Butler, J., Gregory, D., & Mansfield, C. (2018). *The role of community businesses in providing health and wellbeing services: Challenges, opportunities and support needs* (pp. 2-47). Retrieved from https://www.researchgate.net/publication/329217680

Tagraf, H., & Akin, E. (2009). Relations between the characteristics of entrepreneurship and the business owner: An analysis of SMEs in Konya. *Serbian Journal of Management, 4*(2), 239-257.

Tam, S., & Gray, D. E. (2016). What can we learn from the organizational life cycle theory? A conceptualization for the practice of workplace learning. *Journal of Management Research, 8*(2), 18-29. https://doi.org/10.5296/jmr.v8i2.9093

Tiren, D. (2020). *Assessing the efficacy of business incubation in Nairobi County, Kenya: An incubatee's perspective* (Doctoral dissertation, Strathmore University, Kenya). Retrieved from http://hdl.handle.net/11071/10253

Valero, J. N., Saitgalina, M., & Black, R. A. (2021). Understanding the Nature of Non-Profit Incubators with Other Sector Incubators in the Founding of Social Change Organisations by Social Entrepreneurs. *Journal of Social Entrepreneurship*, 1-20. https://doi.org/10.1080/19420676.2021.1977975

Van der Zwan, P., Thurik, R., Verheul, I., & Hessels, J. (2016). Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs. *Eurasian Business Review, 6*, 273-295. https://doi.org/10.1007/s40821-016-0065-1

Wachira, K. (2017). *The Role of University-based Business Incubators Strategy on Enterprise Growth in Kenya* (Masters dissertation, Jomo Kenyatta University of Agriculture and Technology, Kenya). Retrieved from http://hdl.handle.net/123456789/3305

World Bank. (2021). *Kenya Economic Update: From Recovery to Better Jobs* (Edition No. 24). Washington, D.C.: World Bank Group. Retrieved from http://documents.worldbank.org/curated/en/099910012132120798/P1749610b2583d010089f90bb1057d49c8c

Xie, Q., Liu, L., Malik, H., Chupradit, S., & Chupradit, P. W. (2021). The Influence of entrepreneurial characteristics on the performance of tourism vlogger entrepreneurs. *Frontiers in Psychology, 12*. https://doi.org/10.3389%2Ffpsyg.2021.725545

Yangailo, T., & Qutieshat, A. (2022). Uncovering dominant characteristics for entrepreneurial intention and success in the last decade: a systematic literature review. *Entrepreneurship Education, 5*(2), 145-178. https://doi.org/10.1007/s41959-022-00073-z

Yasin, N., & Gilani, S. A. M. (2022). 'Imitate or Incubate?' Evaluating the Current State of University-Based Business Incubators in the United Arab Emirates. *FIIB Business Review*, 23197145221112744. https://doi.org/10.1177/23197145221112744

Acknowledgments

We are grateful to all the university business incubators from all the universities we visited, thank you so much for your time and cooperation.

Authors Contributions

Ms. Nakiganda Racheal Gladys: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Writing original draft; Writing review and editing.

Dr. Dickson Otieno Okello: Guided and supervised the whole process from inception, guided the development of the data collection tool, and read and guided the development of the paper.

Prof. Hillary Kiplangat Bett: Guided and supervised the whole process from inception, guided the development of the data collection tool, and read and guided the development of the paper.

Prof. Patience M. Mshenga: Read, guided, and supervised the whole paper development process.

Funding

This article did not receive any specific funding, but it is based on a study funded by the Transforming African Agricultural Universities to Meaningfully Contribute to Africa's Growth and Development (TAGDev) project at Egerton University supported by Master Card and Regional Universities Forum for Capacity Building in Agriculture (RUFORUM).

Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed Consent

Obtained.

Ethics Approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and Peer Review

Not commissioned; externally double-blind peer reviewed.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data Sharing Statement

No additional data are available.