# FACTORS LIMITING LIVESTOCK BASED ENTREPRENEURSHIPS IN TANZANIA: A CASE OF LIVESTOCK TRAINING AGENCY (LITA) GRADUATES

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN AGRICULTURAL STATISTICS OF SOKOINE UNIVERSITY OF AGRICULTURE. MOROGORO, TANZANIA.**

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## ABSTRACT

The study was conducted to investigate the factors limiting entrepreneurship among livestock professionals. It draws empirical data and evidences from Livestock Training Agency (LITA) graduates in order to identify factors limiting them in establishing livestock based enterprises. The sample comprised of 122 LITA graduates obtained through snowball sampling technique and six (6) key informants including owners of viable livestock-based enterprises, LITA campuses, Farm Managers, and District Officers in Local Government Authority. Data were collected using a questionnaire and key informant interview checklists. Chi-square test and independent sample (t-test) were used to test the characteristics of respondents in relation to engagement in livestock enterprises. Descriptive analysis was conducted to examine perceptions, to assess attitudes of LITA graduates, and to analyze challenges and constraints encountered in running livestock based enterprises. Multiple logistic regression analysis was carried out to enable inference making on the relationships between entrepreneurship in livestock sector and other factors. The study found that attitudes such as individual fear for failure and unwillingness to take risks limit entrepreneurship in livestock sector to a greater extent, followed by lack of confidence in entrepreneurships and inability to capitalize available business opportunities in livestock sector. It was further discovered that perceptional factors limit entrepreneurship in livestock sector to a moderate extent. Dedicated initiatives are required in counteracting the major impeders in order to promote entrepreneurship in livestock based enterprises. However, providing support such as credit loan will help LITA graduates in starting as well as expanding viable livestock businesses. It is therefore important for the government and other stakeholders to ensure that LITA graduates are provided with adequate support to deal the identified factors that potentially limit entrepreneurship in livestock based enterprises.

## DECLARATION

I, Alphonce Lucas Chassama, do declare to the Senate of Sokoine University of Agriculture that, this dissertation is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

_____ _____

Alphonce Lucas Chassama Date
**(MSc. Candidate)**

The above declaration is confirmed by;

_____ _____

Dr. Paul E. Mtoni Date
**(Supervisor)**

## COPYRIGHT

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## DEDICATION

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| | |
|---|---|
| ACBF | African Capacity Building Foundation |
| AGI | Association of Ghana Industries |
| CBPP | Contagious Bovine Pleuropneumonia |
| CEDA | Citizen Entrepreneurial Development Agency |
| COV | Coefficient of Variation |
| FAO | Food and Agriculture Organization |
| GACSA | Global Alliance for Climate Smart Agriculture |
| GEM | Global Entrepreneurship Monitoring |
| ILO | International Labour Organization |
| ILRI | International Livestock Research Institute |
| ISO | International Standard Organization |
| LEA | Local Enterprise Authority |
| LITA | Livestock Training Agency |
| MALF | Ministry of Agriculture Livestock and Fisheries |
| MoA | Ministry of Agriculture |
| MOFED | Ministry of Finance Federal Democratic Republic of Ethiopia |
| NTA | National Technical Awards |
| PPR | Peste des Petits Ruminants |
| QAAHE | Quality Assurance Agency for Higher Education |
| SMEs | Small and Medium Sized Enterprises |
| SPSS | Statistical Package for Social Sciences |
| TVET | Technical and Vocational Education and Training |
| UNCTAD | United Nation Conference on Trade and Development |
| UNDP | United Nation Development Program |
| URT | United Republic of Tanzania |
| WFP | World Food Program |

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background Information

Globally, livestock production contributes significantly to the livelihoods of local communities through the provision of direct and indirect use values. Animals such as cattle offer many benefits to citizens ranging from meat, hides or skin, milk for household consumption, sale and for cultural uses. Hence, the potential for improving levels of livelihoods and well-being through livestock agriculture is significant (Sholto-douglas *et al*., 2015).

Entrepreneurship is one of the major strategies by governments all over the world to promote economic growth in lagging and smaller regions. Governments have persistently failed to achieve this goal because of the lack of a clear understanding of what drives the survival of start-ups. Economic growth theories do not suggest a clear approach when it comes to identifying growth factors in smaller and lagging regions (Stephens *et al.,* 2013). This gap in the regional science literature has created a persistent regional difference in the survival and growth of start-ups. Some studies attribute the disparities in the survival rates of start-ups to the processes of firm selection and agglomeration economies (Combes *et al.,* 2012) and regional entrepreneurial attitude (Andersson and Koster, 2011). However, most growth theories assume that human capital is the real engine of growth (Stephens *et al.,* 2013). Meaning, human capital in the form of entrepreneurial skills, education or creativity promote growth.

Entrepreneurship through job creation and income generation drives economic growth, productivity and social development (Denanyoh *et al*., 2015). The importance of entrepreneurship has led many industrialized countries to deem it in public policy

(Sondari, 2014). There is a strong positive correlation between entrepreneurship and economic growth. Entrepreneurship creates spectacular employment opportunities, stimulates creativity and innovation which involves technology, knowledge and skills transformations. This makes entrepreneurship to be one of the most popular areas to study.

Entrepreneurship is strongly linked to development of Small and Medium Sized Enterprises (SMEs) which are main driving force of entrepreneurship development and economy. SMEs constitute about 90 percent of all enterprises in developed countries with about 60 percent of employment opportunities (Stefanovic *et al*., 2011). Entrepreneurship and Small and Medium Sized Enterprises development contribute to long-term economic growth. In Europe, Small and Medium Sized Enterprises account for 99 percent of all enterprises, of which 92 percent are micro enterprises providing about 67 percent jobs of all employees (Paul, 2016).

The important role small businesses and entrepreneurship play in stimulating job creation, economic growth, poverty alleviation and general uplifting of living standards has been recognized internationally. Entrepreneurs drive innovation and speed up structural changes in the economy there by making an indirect contribution to productivity (Kioko, 2017).

In Nigeria for example, farming involves creation of entrepreneurial activities in different fields of agriculture including animal science. The possibility of establishing agricultural enterprises including livestock based ones on small scale levels and growing it gradually makes startups easy even with small capital. This reduces the pressure for huge capital as may be required in some other sectors. Production cycles for animal products, fisheries

and poultry are short hence returns are quick and may be reinvested for growth. This places the Nigerian's graduates in an advantageous position in establishment of animal related enterprises (Funmilayo *et al.*, 2017a).

Livestock industry has many entrepreneurial opportunities. In the poultry sector, there is meat and egg production while in livestock production there is small and large ruminant production. Graduates may start entrepreneurship in animal science to supply good quality protein which is highly demanded in both domestic and global markets to meet the rising animal protein requirement of the ever growing human population. Consequently, since animals require feed all the times for growth and optimum production, it is an opportunity for livestock professionals to establish their own feed formulation companies, open their own research stations and help other skilled young livestock professionals to conduct research to improve performance of livestock industry (European journal of business and management, 2014).

Livestock-based enterprises are pathways out of poverty for many people in Africa, for whom animals are source of nourishing foods and regular incomes. With demands for milk, meat and eggs rising fast in many developing countries, the raising marketing of animals and animal products also allows people to take advantage of the new growth opportunities in this sector**.** The increased market of animals and animal products in developing countries due to the rapid increase in human population makes people including graduates to take advantage of new opportunities in this sector. In this regard, farm animals create significant numbers of jobs and small business opportunities. For instance the dairy sub-sector could create up to 73 000 new dairy related jobs by the year 2020 (Lemma and Sodo, 2014).

Over the years many countries are gearing towards producing youths including graduates specialized in agribusinesses that are productive, proactive, creative, imaginative and competitive. One of the strategies to increase the number of graduates and youth to establish agri-enterprises is to encourage youth participation in entrepreneurship (Samah *et al*., 2010). The strategy focused at those who had completed their education or training, applying for work, and students in high school, attending preparatory courses and in tertiary education. With regard to this strategy it seems that encouraging the youth to establish agriculture and livestock enterprises is something of serious concern in order to stimulate growth of the manufacturing sector.

Global economy is complex and consists of many uncertainties. To overcome this, people with diversified entrepreneurial knowledge and skills are required to provide solutions to the shrinking economies and unemployment (Iqbal *et al*., 2012). Markets are currently offering limited job opportunities for graduates (Frazao *et al*., 2010). Teshome (2014) pointed out that college graduates are now focusing on entrepreneurship as a gateway to employment creation and stabilizing economies. With the transformation of agriculture from subsistence to commercial oriented and its globalization, the challenges facing agriculture and related fields are unprecedented. As the relative proportion of graduates seeking employment in the public sector increases continually, more jobs should thereby be created in the private sector. This however, necessitates fine tuning the entrepreneurial skills of the graduates (Patagoc, 2019).

Successful entrepreneurs are normally risk-takers, forward looking, visionary and have intellectual curiosity (Cardon, 2014). In order to minimize the uncertainty, risks should be more calculative and evaluation of opportunities should be more realistic. External factors together with educational background determine entrepreneurial motivation

(Toutain *et al*., 2017). Thus, proper education can make graduates capable of thinking out of box and generate new and innovative ideas, which can lead them to be entrepreneurs (Kabir *et al*., 2017). For example, many colleges in Bangladeshi decided to offer at least one course in entrepreneurship. However, students in final year rarely preferred entrepreneurial career. That is to say learning entrepreneurship and other studies contribute insignificantly in developing student entrepreneurial mind (Bolinger and Brown, 2015).

Entrepreneurial effectiveness is likely to be achieved as students move towards completion of their studies and as they prepare for the transition into workplaces, self-employment and further studies Huijsmans (2016). Research suggests that participation in specific entrepreneurship education programs derive in perceptions of competence for business startup, positive attitudes towards self-employment, and related entrepreneurship preferences and intentions (Vazquez *et al*., 2011). In order to start operate and grow a profitable small business, there are certain key intrinsic and extrinsic components such as attributes, behaviors, attitudes, and practices that must be fully developed, implemented, and managed by a small business owner (Nodede, 2012).

It is surprising to note that graduates who studied different aspects of agriculture such as animal science are currently looking for other jobs in the banking, oil and gas sectors while abandoning what they spent several years studying in college, whereas non-agricultural graduates are doing well in different animal-agriculture enterprises. The implication of this is that although studying agriculture may be a necessity, it is not the most important pre requisite to owning and managing a successful agricultural business. According to Zakaria and Hudu (2013), it is expected that animal science

graduates would develop passion in their professional carrier and serve as active work force that will improve performance of livestock sector.

### 1.1 Statement of the Problem

Unemployment is a severe problem in Tanzania, especially among graduates. Deloitte (2013) reports that Tanzania's unemployment rate for college graduates stood at 11.7 percent in 2012. In Nigeria statistics have shown that high rates of unemployed people are students from colleges (National Bureau of Statistics, 2014). Low numbers of business start-ups have also been reported among Tanzanian graduates including livestock based ones. Mwasalwiba *et al.* (2012) report falling rates of graduates' business start-up in Tanzania, despite efforts in teaching entrepreneurship and other relevant modules. Students graduate with certificates and diplomas from Livestock Training Agency (LITA) each year. Records shows that only 14.4 percent out of LITA graduates have managed to start their own livestock enterprises. These graduates possess necessary knowledge and skills in the poultry production, livestock production, entrepreneurship, agribusiness and livestock enterprise establishment and management. In recent years the interest towards entrepreneurship has been constantly growing as an important alternative of professional occupation for the graduates of the tertiary education. On the other hand, issues underlying entrepreneurship in livestock enterprises are not fully addressed in light of a complex set of limiting factors which prevent graduates from realizing the potentials of self-employment in the livestock sector. This study therefore seeks to investigate factors limiting the LITA graduates from engaging in livestock enterprises in Tanzania.

## 1.2 Objectives of the Study

### 1.2.1 General objective

An overall objective of this study was to investigate the factors limiting livestock professionals from starting entrepreneurship in livestock sector and inform policy accordingly.

### 1.2.2 Specific objectives

(i) To examine perceptions of LITA graduates on livestock-based enterprises in Tanzania.

(ii) To assess attitudes of LITA graduates towards self-employment in livestock sector in Tanzania.

(iii) To analyze constraints and/or challenges facing livestock-based enterprises in Tanzania.

(iv) To investigate and evaluate relationship between different factors affecting entrepreneurships in the livestock sector.

## 1.3 Research Questions and Hypothesis

(i) What are perceptions of LITA graduates on livestock-based enterprises in Tanzania?

(ii) What are attitudes of LITA graduates towards self-employment in livestock sector in Tanzania?

(iii) What are the constraints and/or challenges facing livestock-based enterprises in Tanzania?

(iv) What is the relationship between different factors affecting entrepreneurships in the livestock sector?

### 1.4 Significance of the Study

It is expected that the findings of this study would be of significant use to LITA graduates and other youths in Tanzania who have aspiration to venture into livestock enterprising. Since the study come out with limiting factors in terms of constraints and challenges facing the establishment of livestock enterprises and recommend ways to deal with constraints and overcoming challenges. The findings of this study would also be of great importance to the government and policy makers since they would be able to enact policy and interventions at different levels in the livestock sector and other sectors that significantly influence or are influenced by livestock chain values. Development partners and donors would also be informed on feasible areas to support LITA, LITA graduates, livestock investments, entrepreneurships and development of livestock sector.

### 1.5 Scope of the Study

The study has focused only on the factors limiting entrepreneurship in general and livestock entrepreneurship in particular. It is limited mainly to graduates of Tanzania Livestock Training Agency (LITA) both males and females. The targeted ones were those who ever attempted to engage in livestock enterprises and hence their success rate is satisfactory or quite low. It includes those who are continuing with the ventures, those are about to stop their ventures and those who did not initiate the venture at all.

### 1.6 Chapter Summary

This chapter has specified existence of a gap of knowledge on starting entrepreneurship in livestock sector and has described how questions on gaps will be answered. The next chapter presents a literature review.

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

### 2.1 Perceptions of Graduates on Livestock-Based Enterprises

#### 2.1.1 Theories of entrepreneurship

##### 2.1.1.1 Trait theory

The trait theory is based on McClelland's (1961) psychological work on entrepreneurs. The theory of Entrepreneurship suggests that entrepreneurs possess certain traits or characteristics of personality like creativity, self-confidence, risk taking, imagination, perseverance which enables them to generate new ideas and create a new business ventures. Although different scholars have disapproved this theory but silently it has a link with entrepreneurship and attitudes that develop entrepreneurship Rai *et al*. (2017) pointed-out that an individual becomes an entrepreneur after being exposed to entrepreneurial events. Such exposure influences someone to shift his or her minds upon the surroundings and in deciding to follow an assured path (Kerr *et al.,* 2018). The theory has shortcomings such as Traits are not stable and can change, measuring personality traits requires subjective judgments and Measurement tends to ignore cultural, environmental and contextual influences.

##### 2.1.1.2 Theory of planned behavior

Ajzen (1991) proposed the theory of planned behavior where in the individual's behavior is best predicted by one's intentions and intentions are in turn predicted by attitudes about the behavior and the subjective norms. This theory has been vastly developed to explain entrepreneurship (Kautonen *et al*., 2013). It provides reasons why some individuals become entrepreneurs and also why they remain entrepreneurs. It hypothesizes that entrepreneurial behavior is the result of attitudes an individual possesses towards

entrepreneurial behaviour, subjective norms and the observable control the person has over the entrepreneurial behaviour.

How a person perceives the environment and the world around them explains how they respond (Kelly *et al*., 2011). Perception is defined as the process of one's awareness of the environment through the senses. Perception encompasses analysis and interpretation of the factors picked by the mind with the intent of providing meaning to those factors. The process of interpretation and analysis of the sensory receptions is determined by various factors including values, memories, cultural setting, past experiences and imaginations. This then, implies that different people will perceive similar objects differently since the degree and content of these influences is diverse.

### 2.1.2 Entrepreneurial perceptions

A study by Karimi *et al*. (2016) pointed-out that perceptions and cognitive factors create entrepreneurship behavior. In the discovery perspective, cognition influence chances that some individuals will identify and seize the opportunity. Opportunity identification depends on prior awareness and knowledge, whilst exploitation depends on having the necessary capabilities. Furthermore, entrepreneurs should be able to read and recognize patterns for them to recognize opportunities.

An entrepreneur initiates a set of actions to transform an idea to an opportunity and perception into a company. Therefore, actions of an entrepreneur are mainly driven by subjective productive opportunity. Opportunity in this context is viewed as a set of subjective expectations an entrepreneur thinks can accomplish. The said expectations are driven by entrepreneurial ideas and images of the environment which determine an entrepreneur's behaviour. The perceptions of market opportunity drive the entrepreneur's

efforts to start a new venture. The greater the perceived opportunity the more likely an entrepreneur will aggressively pursue that opportunity (Edelman and Yli-Renko, 2010).

Being educated and linked to social groups at school influence student to perceive entrepreneurship as a viable career option. This circumstance applies to all students of the tertiary institutions (Njeru *et al*., 2015). Attitude has a great impact on the success of any entrepreneur. Attitude encompasses awareness of business opportunities, fear of failure inherent in the individual, perceived self-efficacy to take up opportunity and level of risk the person desires to take (Karimi *et al*., 2016).

In Tanzania there is a wrong perception that graduates qualify only for salaried employment, although the current government advocates for graduate entrepreneurship and self-employment. Usually, graduate entrepreneurs are considered to be similar to those who are unemployable or who make a living in the course of unpredictable means. However, public attitudes towards entrepreneurship seem to have changed. Currently, there is a growing understanding and appreciation of entrepreneurship and its role in the Tanzanian society. The improved reputation of entrepreneurs and the attractiveness of an entrepreneurial career among Tanzanians is a reflection of both the more conducive environment and the shift away from salaried employment among graduates (Mwasalwiba *et al*., 2012b).

According to Levie (2010), there is positive correlation between positive attitude towards entrepreneurship and the chances that an individual will engage in entrepreneurship. Entrepreneurial behavior of an individual is the result of both internal and external factors. Unlike internal factors, external factors are those which are out of the control of human being himself or herself, and always they relate to the external environment.

These include factors such as inflation, taxation rates and recession among others. These factors affect all entrepreneurs equally but the individual's entrepreneurial perception will determine how the entrepreneur will respond to them.

Studies by Shinnar *et al*. (2009) revealed that social groups at colleges influences students to perceive entrepreneurship as a viable career option. This applies to all students and graduates of the tertiary institutions. Study by Khursheed *et al*. (2019) conducted on 59 countries revealed that attitude has a great impact on the success of any entrepreneur. Attitude includes perception of business opportunities, the fear of failure inbuilt in the individual, the perceived self-efficacy to take up the opportunity and the level of risk the person desires to take. These perceptions are mostly shaped by societal aspirations, for example, through the portrayal of entrepreneurship in the media.

### 2.1.3 Perceptions of graduates on entrepreneurships in livestock sector

According to Sargani (2018), the way livestock entrepreneurship is perceived by graduates has implications in success or failure of self-employment in this sector. Graduates perceive entrepreneurship in livestock-based enterprises as an alternative option to generate regular income which removes poverty to many people in Africa. This makes livestock professionals take advantage on emerging marketing opportunities of animals and animal products rising fast in many developing countries.

Nigerian professional graduates in agriculture and related fields consider entrepreneurship in their carrier as alternative occupation to enterprise establishment (Abdullah and Sulaiman, 2013). However, despite the enormous opportunities for self-employment in the sector, most graduates continue to hunt for office jobs. Convincing Nigerian graduates to venture into agribusiness appears to be a difficult thing. Many studies have reported the

poor perception of the graduates on career options and enterprises establishment in agricultural field and related ones.

Abdullah and Sulaiman (2013) hypothesized that although animal-agriculture is considered as an alternative occupation for graduates, but still they have negative attitudes towards this sector. Liman (2011) noted that youths including graduates are scarcely interested to engage animal-agriculture enterprises because they perceive farming not as an attractive career field. They are hindered by capacity constraints, few incentives like low pay, job insecurity, climatic changes and poor working conditions. These factors persuaded them to have negative perception with entrepreneurship in animal enterprises.

College graduates have a negative perception towards entrepreneurship in animal enterprises. They perceive it as something to be done by those who performed poorly in school or as an alternative one does to supplement other non-farm businesses. Graduates do not even consider agriculture as option (Muthomi, 2017a). Factors that discourage them include land scarcity and pressure on other resources. These pose serious agribusiness entry barriers for youths and graduates (Sumberg *et al*., 2017).

## 2.2 Attitudes of Graduates towards Self-Employment in Livestock Sector

### 2.2.1 Entrepreneurial attitudes

Attitude is formed on the basis of psychological perspectives of individuals (Ajzen, 2001). It has remained a vital element when it comes to understanding human intentions. Attitude is directly associated with individual's intentions and gives rise to one's behavioral intention (Neupane *et al*., 2014). These beliefs in turn are referred to as cognitive. Studies point-out that both positive and negative intended behaviors of an individual are greatly impacted by one's attitude (Kabir *et al*., 2017). Entrepreneurial

attitudes are extents to which people think there are good opportunities for starting a business. These kinds of attitudes are important in establishment of any enterprise. Attitudes such as willingness to bear the level of risk that individual might be willing to bear and individual's perceptions of their own skills, knowledge, and experience in business creation are relevant to entrepreneur- ship (Levie, 2010).

Entrepreneurial attitudes influence entrepreneurial activity, but can also be influenced by entrepreneurial activity. Entrepreneurial attitudes are important because they express the general feelings of the population toward entrepreneurs and entrepreneurship. More important is that if the national attitudes toward entrepreneurship are positive, this will generate cultural support, help financial resources and networking benefits to those who are already entrepreneurs or want to start entrepreneurship (Desta and Jebena, 2018).

According to Nybakk and Hansen (2008), there are two important elements of entrepreneurial attitudes, namely the ability to recognize opportunities and the ability to take calculated risk. It is further argued that people with entrepreneurial attitudes are more likely to start-up new business activities. This implies that risk-takers are more likely to initiate a new activity and risk attitude affects the selection of individuals into entrepreneurial positions. Attitude was an important predictor for an individual to engage into entrepreneurial activities (Kabir *et al*., 2017). Alain *et al*. (2015) pointed-out that attitude is a strong and direct influencing factor when it comes to predicting entrepreneurial intention.

### 2.2.2 Attitudes of graduates towards entrepreneurship

Attitude influences involvement of graduates in agricultural entrepreneurship and related fields. Such attitudes are due to an individual's degree of like or dislike on something

(Abdullah and Sulaiman, 2013). Attitude is an important determinant of an individual's success in entrepreneurship (Norasmah and Faridah, 2010). Graduates may have different attitudes and can react differently on the expected self-employment behavior. Perhaps they can exhibit positive or negative attitude toward self-employment depending on their background and other traits. If the students have positive attitudes toward self-employment, it is likely that upon graduation they will start their own businesses. Conversely, if they have negative attitudes it is unlikely that they will become self-employed (Norjannah, 2015).

According to UNCTAD (2015), opportunities for agriculture-based businesses are unlimited. With all these unlimited opportunities, agriculture sector and related ones in Iran is not given high priority compared to other sectors such as manufacturing, commercial and the government sector. This is due to the fact that graduates of tertiary institutions have conversional opinion that animal production is a rough job consisting of low salaries and has no direct future for them.

Students' attitudes towards entrepreneurship can be measured in terms of three components of entrepreneurship attitudes namely cognitive, affective and behavioral attitude components. The cognitive component relates to beliefs, thoughts and knowledge students have about entrepreneurship and entrepreneurship education that shape their attitudes and behaviours. The affective component relates to feelings and emotions about entrepreneurship, and this determines how a person sees the relevance of something and hence whether sooner or later they either like it or not (Rudhumbu *et al*., 2016). The behavioral component relates to actions, obvious responses and willingness to accept something new (Eslinger *et al*., 2002).

## 2.3 Entrepreneurship Education and Its Influence in Making Graduates Entrepreneurs

In Australia the agenda on entrepreneurship as a career option for school leavers is becoming more pronounced. Measures are taken to build-up graduate's entrepreneurship capacity through entrepreneurship education, increasing entrepreneurship opportunities, and perfecting financing system to encourage and increase number of college students to become entrepreneurs (Byun *et al*., 2018). Further, a study in Malaysia pointed-out that higher education can support great self-employment and employability (Ghina, 2014).

Tshikovhi and Shambare (2015), assessed limiting factors to student entrepreneur- ship in South Africa. The study revealed that in order for the course content to be useful in any education setting, it should be in line with the economic realities of the country. In addition the syllabus must be comprehensive enough to prepare students to acquire practical entrepreneurial skills and knowledge, and be able to draft decent business plans. The reality is that graduates are not well prepared for business. This indicates inappropriate educational content in the area of entrepreneurial education. Furthermore, graduates are also constrained in the course of being taught by inappropriate teaching methods.

Entrepreneurship education is viewed as a form of training in entrepreneurial knowledge, behavior, attitudes and skills (Lin *et al*., 2018). In Kenya, entrepreneurship development belonged to students in technical training institutions but now has been expanded to include the Universities. Students are provided proper entrepreneurship education to increase their awareness on the importance of entrepreneurship in economic development. Moreover entrepreneurship education provides an opportunity for graduates to be able to

analyze the problem of unemployment and self-employment as a career choice (Mbogo, 2011).

It has been empirically proven by past researches that there is a link between entrepreneurial education and the probability of student's preference to become an entrepreneur. Prior studies have clearly revealed that entrepreneurial education occupies a key role in cultivating entrepreneurship spirit among graduates. Entrepreneurial education is strongly correlated to entrepreneurial intention since graduates who majored in entrepreneurship revealed high intention of becoming entrepreneurs by starting their own business (Idris, 2017).

Entrepreneurial education is a significant factor that affects student intention of becoming an entrepreneur. The completion of one entrepreneurship course improves the probability of entrepreneurial intention. Similar result has also been demonstrated by other researchers as the findings of their studies have shown the prevalence of a positive relation between entrepreneurial education and the intention of pursuing entrepreneurship as a career (Israr and Saleem, 2018).

In order to promote entrepreneurship in African countries, training remains a key issue. Educators in schools, colleges, vocational and technical training institutions in Africa can make a useful curriculum if they can have an understanding that anyone can be trained to be an entrepreneur from the base of minimum certain personal qualities (Commission, 2009). The qualities include desire for achievement, locus of control, risk taking propensity, pro-activeness, tolerance for ambiguity, creativity, competitiveness, leadership and endurance, technical competence, understanding of the interrelation of jobs in the business and human relations skills (Ismail *et al*., 2015).

Promoting an entrepreneurial culture among college and university graduates is the issue of serious concern now-days (Fulgence, 2015). More emphasis is in developing an opportunity-oriented mindset among graduates. Studies have shown that in year 2011 unemployment rate was 18 percent and has been rising ever since, with the majority of the unemployed being youths including graduates (ACBF, 2017). This posed a challenge to higher education institutions in Botswana. As the result of this, programmes such as entrepreneurship education were introduced to help youth gain knowledge and skills required to create self-employment. Higher education institutions have been concentrating on producing graduates for whom there are no markets rather than concentrate on programmes such as entrepreneurship that help in job creation (Daniel, 2015). Higher education institutions needed to be criticized for producing job-seeking rather than job-creating, self-reliant graduates (Ndyali, 2016).

A study by Gwija *et al*. (2014) revealed that participation in entrepreneurship education makes students capable of successful establishing their own profitable businesses. A study by Zahariah *et al*. (2010) reported similar results that after attending entrepreneurship program, the intention to become entrepreneurs increased by 50 percent. Majority of students who attended entrepreneurship course showed positive perception of entrepreneurship as a career option after completing the studies (Lawan *et al*., 2015). Factors such as fear of failure and lack of sufficient capital were identified as major barriers to the students' intentions to start their own businesses.

**2.4 Policies and Programs Supporting Graduates Entrepreneurship**

According to Panday (2015), graduates find difficulty to take risk due to absence of government policy protecting establishment of agricultural enterprises and related ones. Special policy addressing graduates focusing livestock enterprises are of distant things

right now in Nepal. There is no mechanism of protecting animal enterprises taking them out of risk and making enterprise establishment feasible. Graduates are also constrained by lack of support and encouragement from fellow citizens, procedures from the registration process and taxation.

The failed policies of government are most of the times unfavorable to the progress of the animal production enterprises. Sometimes politicians ban the importation of goods not readily available in the country in an attempt to help domestic industries without providing viable alternatives. An example is the shortage of feeds and sky-rocketing high prices due to scarcity of soya beans and groundnut cake in Nigeria (Bamaiyi, 2013).

According to Lemma and Sodo (2014), in Ethiopia, there has been promising trend of self-employment on livestock enterprises by graduates. However, in order to fully address livestock entrepreneurship and realize its potential as a self-employment option for graduates, support services are needed. Graduates need support in technical skills, science-based information and technologies. In addition to these, strategies that link the roles of all stakeholders need to be in place to make livestock entrepreneurship a viable career option in the emerging interest of graduates and meet the growing demand of livestock commodities.

In South Africa farmers are not given enough support in order to enhance enterprises productivities (Mbatha and Masuku, 2018). South African agricultural economy grew rapidly under the previous South African government owing to strong state subsidies and support programmes. This program aimed to support both crop and livestock farming under commercial basis. Similar support programmes and state subsidies were seen as encouraging the agricultural economy of the United States of America and Europe.

The removal of marketing boards' state subsidies along with the de-regulation of the agricultural sector subsequent to the democratic transition in 1994 caused serious problems for commercial farmers. Interest rate subsidies and export subsidies were removed completely and hence lost market control of its product. This has caused many emerging farmers to face difficulties in accessing formal agricultural markets. Lack of market participation is a common feature of emerging farmers worldwide and is identified as a constraint to them (Bienabe, 2011).

In Ethiopia efforts are concentrated in supporting sustainable livestock entrepreneurship. Institutions such as state-run Micro and Small Enterprises Development Agency and UNDP program under enterprise development and employment were established to enhance SMEs development for self-employment among youth, school leavers and vulnerable groups.

The programs were supporting establishment of agro- processing enterprises specifically in horticulture (spices) and livestock production (dairy, sheep, poultry and cattle fattening) (InfoDev, 2012). Other supports were directed to graduates of Technical and Vocational Education and Training (TVET) to enhance entrepreneurship skills for self-employment.

Idowu and Victoria (2018) indicated that Nigerian education system produces graduates who do not meet the need of the labour market. The qualities in skills of the graduates and the expectations of the industries have not been matching. This imbalance has left many graduates of higher institutions unemployable. Consequently, the Federal Ministry of Education directed all tertiary institutions in the country to include entrepreneurial education in the curriculum and make it to be compulsory course for all students

irrespective of their areas of specialization (Akhuemonkhan *et al*., 2013). This program aimed to educate and support graduates to be able to venture in livestock business (Yahya and Mutarubukwa, 2015).

In Botswana a number of initiatives have been attempted by the government and its development partners to enhance entrepreneurship capacity among youths and graduates (UNCTAD, 2017). The initiatives involved formation of two main parastatals specifically the Citizen Entrepreneurial Development Agency (CEDA) and the Local Enterprise Authority (LEA). Both two parastatals together with government aimed to develop entrepreneurship culture among youth and graduates of the tertiary institution (Rudhumbu *et al*., 2016). Currently, an increase in number of organizations supporting entrepreneurship in Botswana has been reported. These organizations provide financial assistance, training and other technical expertise (Themba and Josiah, 2015). Furthermore, tertiary education institutions in Botswana have opted to introduce entrepreneurship programmes in their curriculum to enhance entrepreneurial skills in enterprise establishment (Commission, 2009).

Lemma and Sodo (2014) pointed-out that in South Africa, Ethiopia, Malawi and Tanzania, an innovation coalition was formed as a strategy to introduce new approaches to enhance entrepreneurship. This program aimed to encourage graduates to choose some form of entrepreneurship as a career option. Lemma (2014) pointed-out that, students in universities and technical schools should be encouraged to become entrepreneurs because of their potential to explore non-traditional business models

**2.5 Graduates and Career Options in Livestock Sector**

Graduates must be sensitive and sensible in their career development. They should think not only for their future but also of their families, societies and to a larger extend their nations. Careers are important for every individual because they constitute a variety of benefits and functions that color the individual's life (Abebe, 2015). In Canada some graduates opt to work in family-owned enterprises, start their own small business, consultants for government, private industry and academia. Livestock related occupations include dairy farm manager, dairy herdsperson, artificial insemination specialist, ranch handler, sales representative for livestock-related supplies; swine herd production assistant, and poultry producers.

In Ethiopia an individual entering a livestock-related occupation requires knowledge of animal sciences to discover the thrill of exploring the biology of domestic animals. The right combination of skills, education, training, and experience can lead to exciting careers. Normally livestock professionals occupy positions at academic institutions, research positions at colleges and government institutions, and consultant position. Other careers are veterinary medicine, animal feed manufacturing industry and wildlife rehabilitation. Entrepreneurship provides widest opportunities to excel in career (Lemma, 2014).

Taylor and Field (2014) pointed-out that animal sciences career in United States of America include livestock production operations in beef, dairy, swine, sheep and poultry. Graduates of the animal science field also occupy positions on managing ranch, meat grading and distribution, marketing of meat and live animals, feed manufacturing, sales and management in companies. Similarly, in the Netherlands, students careers centre suggests entrepreneurship as one of the career option after graduation (Zwan, 2013).

Career options for graduates have been to be employed in either governmental or non-governmental organizations, or private organizations. Recently, graduates including non-animal science students are also inclining towards self-employment on livestock enterprises as a life-coping strategy. However issues underlying livestock enterprises are not fully addressed and they could be constraints in promotion and realization of the potential of self-employment by graduates. In this regard, knowledge and experiences pertaining to establishment of livestock based enterprises appears to be incomplete while others remain unknown. Studies show that little efforts have been applied to investigate circumstances surrounding the establishment of livestock enterprises that has been put into effect by graduate as a self-employment option (MoA and ILRI, 2013).

## 2.6 Constraints and Challenges Facing Livestock- Based Enterprises

### 2.6.1 Constraints

Many agro-business and animal firms are incapable of accurately identifying and defining their directorial objectives, resulting into low firm productivity. Often, competitors cite cheap labour as an advantage in business, but in reality, high taxes and confusing labour laws make hiring in many countries less attractive (Spoor, 2013). This is aggravated by shortages of skilled labour to manage machinery and equipment that are highly costing.

Majority of graduates in Nigeria were willing to venture livestock enterprises after graduation. Factors such as lack of access to credit loan facilities and unavailability of storage and processing facilities limited them to establish animal related enterprises (Ojebiyi, 2015). More graduates will venture into agriculture and related enterprises if the above said factors are made available to them. One of the most crucial factors of production known to man is capital. It is needed in farm operations in order to sustain enterprise productivity. Financial inadequacies cause slow growth of animal enterprises or

even death. Low income earners who dominate the animal industry are not able to cope with the demands of the industry especially when production is not at its optimum level. Apart from the poultry industry most of the animal enterprises in Nigeria are located in the northern part of the country which has an even lower income power than the southern part (Bamaiyi, 2013). This implies that farmers are not able to afford a lot of infrastructural and other facilities that they need for maximum productivity.

Majority of small scale cattle entrepreneur in the developing regions of Sub-Saharan Africa lacked formal education and appropriate technological skills required in running enterprises effectively and efficiently. Lack of appropriate entrepreneurial skills resulting from inadequate business training of entrepreneurs in Tanzania had been a major constraint for development and growth of cattle enterprises (Mashenene and Campus, 2019). In Nigeria livestock enterprises owned by agricultural science graduates are constrained by inadequate startup capital and market for live animals and animal by-products.

In Nigeria the market for animal products is not well organized making farmers not benefiting from the existing opportunities. Underdeveloped market systems render them unable to make profit because most animal products are perishable and thus expire within a short period of time. China has a well-developed animal production industry including market consisting of meat sub-sector meeting international standards in terms of processing and storage, unlike in Nigeria, although it is the country with the largest population in Africa with many animals but still has underdeveloped market and storage facilities (Bamaiyi, 2013).

Limited access to financing services for agriculturalists is one key challenge that is making many young people despise farming (Muthomi, 2017a). They rarely access capital simply because they lack assets to pledge as collateral to get funding from financial institutions. Many of the assets that the rural youth utilize usually belong to their parents or elderly relatives. On the same note, there is poor agricultural promotion which makes financial institutions not to look at agriculture as a sector that deserves financing.

Access to quality and affordable livestock services is constrained by many factors such as limited service providers, physical distance, price information and socio-cultural barriers. However, the changing role of the state opens up new business opportunities for the private sector, including farmers groups. A new vision for livestock service provision is needed so that the roles and responsibilities of state and non-state actors can be supported by progressive legislation and regulation. Fundamental to this is a clear definition of what constitutes a public and private good, so that state and non-state actors co-operate and do not compete. Some innovative business models including contract farming and micro-franchising are needed, which could be applied to un-lock the value and income generating potential of livestock kept by poor livestock producers (Lemma, 2014).

Analyzing the impact of Extension education and entrepreneurship development in Nigerian agriculture indicates that most farmers in Nigeria have limited entrepreneurial (technical and managerial) capacity due to old age, illiteracy, lack of skills in agricultural production and gender related constraints (Onyebinama, 2010). Assessing the situation and perspectives in development of sheep farmers' entrepreneurship in Podlaskie province showed that sheep farmers' readiness for changes (entrepreneurial behavior) was expressed by possibilities of increasing sheep production profitability. However, a level of entrepreneurship of the sheep farmers was low (Rajaei *et al*., 2011).

### 2.6.2 Challenges

According to Spoor (2013), one major challenge facing the establishment of an agro-business firm is inadequate funding and high interest rate on lending capital. Most agro-business enterprises are set-up by individuals and, therefore are faced with financial drain and hardly get support from the government and corporate bodies. Furthermore, high interest charges on bank loans greatly prevent establishment of most agro-businesses.

Graduate entrepreneurship in Tanzania is still in its infancy and is facing a number of challenges. Factors such as lack of start-up capital, inhibitive banking and taxation, trust, deprived technology, corruption and cheap imports from countries such as China discourage enterprise establishment (Mwasalwiba *et al*., 2012a). There has been an influx of cheap imports which have tended to cripple local production. The relaxation of import conditions like import duties in some of the products seemed to be justified by the argument that local production has failed to meet local demand, especially for food products. But this has been at the expense of local producers and sellers of locally made items.

Low accessibility to appropriate production and processing technologies has recently become a major challenge to the operation of agro-business industry and related ones (Spoor, 2013). In this regard, agro-businesses are unable to ensure that their products meet world quality requirements specified by the International Standard of Operation, resulting in low productivity and general performance. Agro-business sector is facing problems pertaining to the capability of producing major products and by-products in a steady and reliable manner as well as meeting market demand for products with standardized quality (Webber and Labaste, 2010).

Boateng *et al*. (2014) revealed that obtaining financial resources is the most difficult problem in small businesses start-up including animal-agriculture enterprises. For the entrepreneur, available financing needs to be considered from the perspective of debts versus equity and using internal versus external funds. Performance of Small and Medium Sized Enterprises (SMEs) has been affected by low business skills, poor decision making leading to wastage in production and low outputs**.**

According to South African Journal of Agricultural Extension (2016), farmers owning livestock enterprises faced challenges such as insufficient market facilities and information, low prices of animal products and cheap food imports. Farmers who managed to produce good quality animal products were not realizing good profits from their produce due to insufficient markets. Farmers tried to sell their produce to big supermarkets but were told that their produce did not meet the requirements specified by the supermarkets and lacked certificate for good agricultural practices.

According to Hazell (2016), most agro-business enterprises and related ones face the problem of inadequate capability. The situation contributes to reduction in their sustenance, productivity and marketing performance. This problem is due to firms to pay no particular attention to strengthening their respective technical support organizations, design and technology centers as well as demonstration units for basic and advanced technologies.

Endemic animal diseases such as helminthes, contagious bovine pleuropneumonia, brucellosis, mastitis, paste des petits ruminants and many others have had devastating impacts upon the animal industry leading to losses in developing economies (Bamaiyi, 2013). Established poultry enterprises are even more devastated by viral infections such as Newcastle disease and Infectious bursal disease (Gumboro) inspite of

several attempts at vaccinations. Some of the reasons for these may be vaccine failures and the involvement of fakes in fighting these endemic diseases (Health *et al*., 2012).

Most livestock enterprises are located in remote areas inaccessible to proper veterinary services. Those which are accessible incur high costs of veterinary services. To overcome high-priced services they use expired vaccines, fake drugs and wrong prescriptions in treating sick animals and poultry. Use of expired vaccines causes disasters to animals which lowers animal productivity. Sub-standard operations, low quality drugs and vaccines are in the market now and everyone can easily purchase (Health *et al*., 2012).

Most of the graduates are from poor families and come directly from secondary schools. In the eyes of the banks, this type of customer lacks both the experience and security in terms of assets and guarantors. In order to be able to start a company in Tanzania, entrepreneurs have to develop a strategy that enables them to deal with the lack of start-up capital. Typically, their strategies have to involve starting small or having a number of alternative product ranges and gradually growing their businesses to the level where they can initiate the activities they had originally envisioned (Mwasalwiba *et al*., 2012a).

Extension services are crucial in promoting animal husbandry practices to all livestock industry stakeholders. Livestock enterprises can perform well if the farmers are well enlightened on certain aspects of production. In Nigeria the number of graduates with profession of agricultural extension is inadequate in relation to the population they are supposed to service. Extension workers provide technical advice to farmers on how to increase animal enterprise productivity and also on market related matters. This ensures that farmers including graduates are succeeding in their profession occupation and contribute significantly to the economy of the nation (Oosterveld and Galand, 2012).

Inaccessible roads from animal farms to the market hinder entrepreneurship in livestock enterprises. Transporting live animals and animal products from production to consumption sites requires good transport networks. Some parts of Nigeria where animal enterprises are located, condition of the roads are not conducive enough to facilitate easy transportation (Bamaiyi, 2013). This caused ruminants and poultry to be transported via unfair practices which are against recommended procedures for the safety and welfare of animals (Fraser *et al*., 2017). These practices makes animals to be under too much stress. Animals are overcrowded in trailers for mass transport making them susceptible to traumatic injuries and stress that affects their health and productivity.

In Nigeria young people who engage in animal-agriculture face a myriad of challenges. Some challenges are specific to their specific group or location while others are common to most small scale farmers (Osikabor *et al*., 2011). In Uganda the factors that make it challenging to entice young people into animal-agriculture are finance, land, machinery, limited skills and knowledge on animal production, negative perception on agriculture, few youth organizations and cooperatives, limited involvement of the youth in decision-making and leadership and management of animal enterprises. Other factors are lack of youth engagement policies, poor market accessibility, lack of support from the community and government and inadequate supportive community services (Muthomi, 2017a).

Muthomi (2017) made an observation that youth are limited to access land due to the fact that it is usually parents who hold title to own land. In addition to this, youth also have access to small pieces of land which are not viable in expansion of farm enterprises. Large piece of land is economically lucrative for entrepreneurs since it allow them to secure the use of effective expertise and technology. Youths including graduates found

unprofitable to start entrepreneurship in small pieces of land, instead they opt to work on other sector of the economy (Njeru, 2017b).

Muthomi (2017) opines that women and youth are inaccessible to useful land for establishment of animal–agriculture enterprises. This is because there exists outdated land ownership systems which favor heads of the family only, who in most cases are males. This hinders youth including graduates to establish agriculture enterprises and related activities. In some societies married young women have access to land from their husbands but they lack title of controlling the land (Njeri and Baba, 2019). This tradition limits married women in accessing loans required to run animal enterprises (Vaillant, 2017). In most African countries, land tenure systems do not favor agricultural development. In addition to this, even youths including graduates are not included to access sufficient and appropriate land hence discourages them from involvement in agriculture (Berckmoes *et al*., 2016).

Livestock entrepreneurs in urban areas face the challenge of resentment from other urban dwellers. In United States of America for example, establishing livestock enterprises in urban areas is something of serious concern since it makes human health to be at risk. In one case individuals around a project area showed their complaints regarding waste, smell and noise produced by livestock (Vaage, 2015). However, in recent times, livestock production is practiced in urban areas again though it is mainly the urban poor who keep livestock as a livelihood strategy (Covarrubias *et al*., 2012). Evidence from rural studies reveals that livestock farmers face multiple challenges including a lack of title deeds to land, insufficient finances, poor veld condition, variable climates, insufficient land size, inadequate infrastructure, poor management and great competition for scarce resources among other livestock farmers (Vaage, 2015).

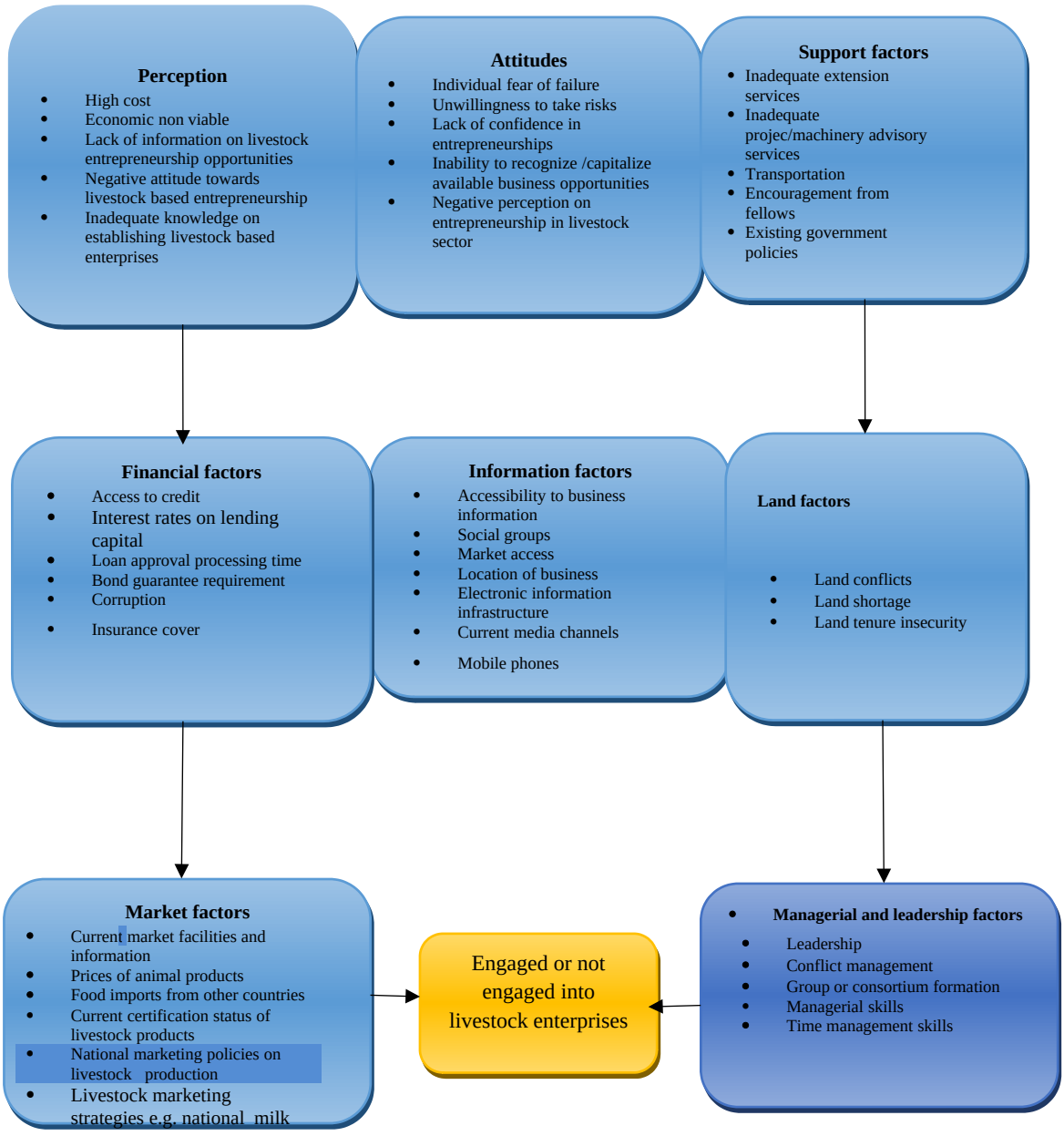


***Figure 2.1: Conceptual framework showing the relationship between factors with engagement* or not engaged into livestock enterprises**

***Source: Modified from Njeri and Baba (2019) and others***

## 2.8 Summary of the Chapter

Animal science graduates forms large and energetic group of many areas. Under the prevailing low rate of absorption to salaried employment in public and private sectors there is a need to scale deep the idea of entrepreneurship among them in order to increase their rate to establish own livestock enterprises. This can lead to self-employment creation, food security and economic development. This chapter has presented literature on perception, attitudes of graduates towards self-employment in livestock sector globally, regionally and locally and on the challenges and constraints facing livestock based enterprises. The next chapter presents research methodology used in the study.

# CHAPTER THREE

## 3.0 RESEARCH METHODOLOGY

### 3.1 Study Area

The study was carried out inside and outside the campuses of Livestock Training Agency of Tanzania (LITA). The Agency is under the Ministry of Livestock and Fisheries. It has eight (8) campuses which are located in different parts of the country (i.e. Temeke in Dar es Salaam region, Tengeru in Arusha region, Morogoro in Morogoro region, Buhuri in Tanga region, Mpwapwa in Dodoma region, Madaba in Ruvuma region, Mabuki in Mwanza region and Kikulula in Kagera region) presented in Figure 3.1. The Agency offers certificate and diploma courses in the fields of animal laboratory technology, animal health and production and range management.

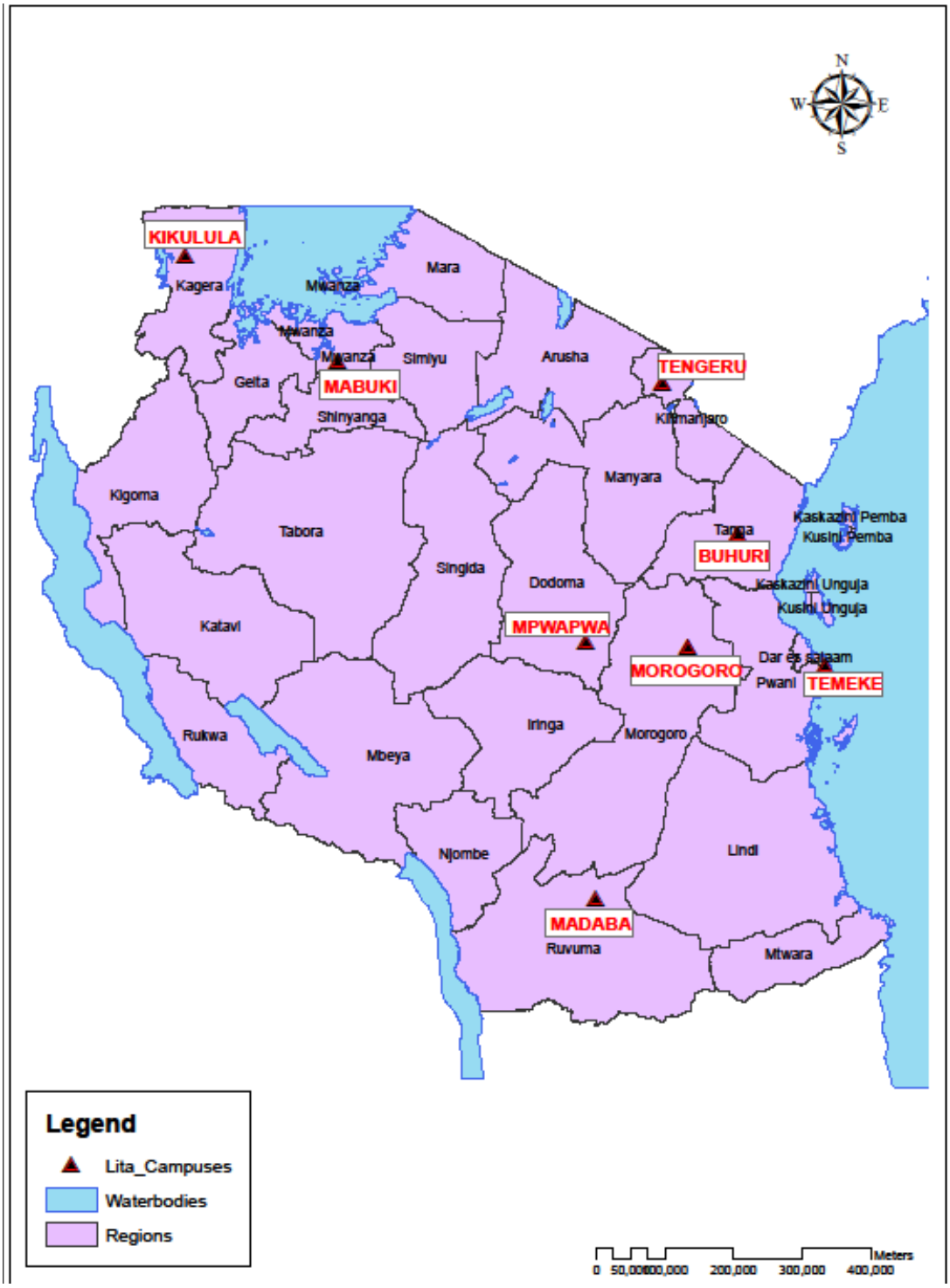


**Figure 3.1: Map of Tanzania showing location of LITA campuses**

### 3.2 Research Design

This study adopted both descriptive and explanatory research designs. According to Mufleh (2016) descriptive research design is used to describe the characteristics of a population being studied by identifying patterns without changing the environment. Explanatory design was considered to be useful in probing further issues surrounding the study using researcher's imaginations and ideas for unexplored information surrounding the subject matter and within the context of the study area.

### 3.3 Population Sample

According to Ragab and Arisha (2017), a population sample should be a well-defined set of people, services, elements, events, group of things or households that are being investigated. This definition assumes that population of interest is homogeneous. The study aimed to have representatives from all LITA campuses. This increases unbiasness in getting respondents views on the subject matter which is under investigation. In this study the target population was derived from students graduated from five (5) campuses of Livestock Training Agency of Tanzania (LITA) between years 2012 and 2018. The campuses are Tengeru, Mpwapwa, Morogoro, Madaba and Temeke. Livestock Training Agency (LITA) graduates were selected because they possess required skills necessary in starting entrepreneurships in livestock industry. The study population comprised of 1620 students graduated from the selected campuses.

### 3.4 Sampling Technique

This study used a snowball sampling technique. Snowball sampling is a non-probability sampling method used when characteristics to be possessed by samples are rare and difficult to find. In this method, every individual had neither an equal chance of being selected nor assurance of been included in the final sample (Naderifar *et al*., 2017).

This method is applied when it is difficult to access research subjects with the target characteristics and in situations where the sample size is unknown, a scenario similar to this study due to the fact that LITA campuses in Tanzania do not maintain databases of graduate's career destinations. In this technique primary data source nominated another potential primary data source to be included in the sample. The main research objects in this study were graduates from LITA campuses. According to Warren **(**1992), if snowball samples are studied not as convenience samples but rather as structured networks, then statistical inference becomes possible from entire snowball samples to the population of individuals belonging to the social network.

### 3.5 Data Collection Approach and Methods

Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, test the hypothesis and evaluate the outcomes. Data collection methods are in two categories; secondary and primary methods. The choice of methods is influenced by the data collection strategy, type of variable, accuracy required, collection point and the skill of the enumerator. This study deployed primary data collection methods consisting of quantitative and qualitative approaches to research. Quantitative data collection methods were based in mathematical calculations in various formats while qualitative research was closely associated with words, feelings and elements that are non-quantifiable.

#### 3.5.1 Questionnaire design and testing

A survey is a questionnaire study that is designed to capture information about attitudes, behaviors and beliefs (Devi, 2015). The literature review and feedback from the panel of experts provides inputs or indicators for the development of the questionnaire

(Artino *et al*., 2014). The items from the questionnaire in the quantitative study are taken from past literatures and from the themes drawn from qualitative study. The questionnaire of this study was divided into two sections (Appendix 1). Section A attempted to examine the socio-demographic profiles of respondents. Five point likert scale was provided ranging from a scale of 1 to 5, where 1= extremely not interested, 2=not interested, 3= least interested, 4= interested and 5 = extremely interested. This scale was used to elicit the information on respondents sector of interest in livestock value chain. Section B explored the factors that limit entrepreneurships in livestock sector comprising of indicators with the aim to identify the factors. The five point likert scale ranging from 1 to 5, where 1= no extent at all, 2=low extent, 3= moderate extent, 4=great extent and 5 = very great extent was selected. This scale is selected to ascertain how much data collected from the respondent is as accurate as possible. The questionnaire also consisted of open-ended questions. Open-ended questions provided the respondents with the opportunity to give their own views and opinions on constraints and challenges facing livestock based enterprises. Primary data including factors limiting entrepreneurship in establishment of livestock enterprises were collected using a survey questionnaire administered to the respondents. A questionnaire with structured questions and open-ended questions was used because it provides more comprehensive data on a wide range of factors.

**(i) Testing the reliability and validity of the research questionnaire.**

A reliability analysis was carried out on the perceived task values scale comprising of 94 items. Cronbach's alpha (α) showed the questionnaire to reach acceptable reliability, $\alpha = 0.66$. Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted. The one exception to this was item 10 (For how long have you lived there?), which after removing it the alpha increased to $\alpha = 0.68$.

**(ii) Pilot study**

It is important to test survey questionnaire before using them to collect data. Pretesting helps researchers to identify questions that don't make sense to participants or problems with the questionnaire that might lead to biased answers. Performing a pilot is also a useful method to ensure that interview questions are appropriate and useful for the purpose of extracting the required information (Turner, 2010). Pre-testing of structured questionnaire involved evaluation of feasibility of the questionnaire, time, and cost. Few respondents completed the questionnaire and feedbacks from questionnaire were recorded. The pre-test study helped familiarizing the questionnaire and identifying items that require modifications.

### 3.5.2 Interviews of key informants

Purposive sampling techniques are primarily used in qualitative study by selecting units for individuals, groups of individuals, and institutions which have specific purposes of obtaining. information (Maxwell, 2007). In this study purposive sampling was used in selecting six (6) key informants. They were obtained from successful respondents in livestock based enterprises, LITA tutors, and Heads of Animal Production Departments from District offices in local Government. They were interviewed using questions appeared in the checklists (Appendix 2) to provide both missing links between information and additional information that could not be obtained through the questionnaires.

## 3.6 Data Analysis

According to Rogito (2010), data analysis involves reduction of accumulated data to a manageable size, developing summaries, looking for patterns and applying statistical techniques. Descriptive statistics such as measures of central tendency like mean,

percentages and frequency were used to measure objective (i), (ii) and (iii). In the case of this study, the relationship between the factors with entrepreneurship in livestock sector was determined through multiple logistic regressions. Furthermore, Chi square test and independent sample (t-test) were used to test whether there were homogeneity between respondents characteristics in relation to engagement in livestock enterprises. Data collected from the survey were analyzed using (SPSS) Version 13. Factors for running a multiple logistic regression model were deduced from Tables 4.3, 4.4 and 4.8. In logistic regression, we are always modeling the outcome log (p/ (1-p)). Hence, the logistic regression model was as presented below;

$$log\left[\frac{P}{1-P}\right]=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\ldots \beta k\, X_k \quad \text{..... (i)}$$

We define the function; logit (p) = log (p/ (1-p)) ..... (ii)

The specified logistic regression model is as follows;

$$logit(P)=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\ldots+\beta_K X_K$$

$$logit(p)=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\beta_4 \beta_4+\beta_5 X_5+\beta_6 X_6+\beta_7 X_7+\beta_8 X_8$$

Where;

P = the probability of presence of the characteristic of interest

$\partial_0$ = a constant equal to the value of P when X values are zero

X = independent variable

$\partial_k$ = the slope of the regression surface (The $\partial$ represents the regression coefficient associated with each $X_k$).

Where;

$X_1$ = Perception

$X_2$ = Attitudes

$X_3$ = Support

$X_4$ = Information,

$X_5$ = Marketing

$X_6$ = Finances

$X_7$ = Land

$X_8 X_6$ = Managerial and leadership

### 3.7 Study Limitations and Delimitations

Data collection involved the use of snowball sampling technique which is commonly used when it is difficult to achieve the appropriate sample size. The study tried to achieve the appropriate sample size of 150 respondents. Some of the respondents who were provided with the questionnaire via email delayed to submit the filled questionnaire because of the problem of having unreliable internet in their areas. This prolonged data collection exercise while others did not reply any feedbacks about the questionnaire. Furthermore, the study failed to obtain respondents from Buhuri, Kikulula and Mabuki campuses. This is because very few students have graduated from the three campuses making them not easily available. Finally, only five (5) campuses were included and this somehow narrowed the study. One month more was added to complete data collection exercise. Some of senior livestock tutors feared and hesitated to provide information on some of the questions and instead only checklists were used. All the respondents were assured that there will be a confidentiality of their answers and were allowed not to write their names. Finally, researcher efforts to overcome the limitations succeeded and data were collected as planned.

### 3.8 Summary of the Chapter

This chapter has described the research methods and the research design used in the study. It has also presented a discussion on the sampling procedures applied, data collection methods, data collection tools and data analysis techniques. Furthermore, the procedures applied in testing validity and reliability of questionnaire are provided. The justification of each action is provided at each stage. Lastly, the procedures applied for data analysis are provided and also how the results were presented. The next chapter presents the results of data analysis and their interpretation conducted in line with the study objectives.

# CHAPTER FOUR

## 4.0 RESULTS AND DISCUSSION

### 4.1 Characteristics of Respondents

#### (i) Gender and age of respondents

This study involved testing whether there is homogeneity between respondents characteristics in relation to engagement in livestock enterprises (Table 4.1). Significant difference ($p = 0.000$) was observed between respondents engaged and not engaged in livestock enterprises in relation to their gender. Large proportion of males (85%) and female (61.9%) were engaged and not engaged, respectively. Age didn't show significant difference in relation to establishment of livestock enterprises. However, the adults (36-60) constituted a large proportion (81.2%) of the large proportion of workforce engaged in livestock enterprises.

**Table 4.1: Characteristics of respondents in relation to ownership of livestock enterprises**

| Variable | Category | Percentages of respondents (%) Engaged (N=233) | Not engaged (N=77) | Totals (N=310) | Pearson Chi-square (χ2) | *p*-Value |
|---|---|---|---|---|---|---|
| Gender of respondents | Male | 85.00 | 38.10 | 68.90 | 28.25 | |
| | Female | 15.00 | 61.90 | 31.10 | (df=1) | 0.000 |
| **A**ge of respondents | Youth workforce (18-35 years old) | 18.80 | 11.90 | 16.40 | 0.94 | |
| | Adult workforce (36-60 years old) | 81.20 | 88.10 | 83.60 | (df=1) | 0.332 |
| Education level | Ordinary diploma (NTA level 6) | 72.50 | 81.00 | 75.40 | 6.53 | |
| | Certificate/NTA Level 5 | 13.80 | 0.00 | 9.00 | | |
| | Bachelor Degree | 13.80 | 19.00 | 15.60 | (df=2) | 0.038 |
| Graduating campus | Tengeru | 66.20 | 52.40 | 61.50 | | |
| | Mpwapwa | 20.00 | 14.30 | 18.00 | | |
| | Madaba | 8.80 | 21.40 | 13.10 | | |
| | Temeke | 0.00 | 11.90 | 4.10 | 16.36 | |
| | Morogoro | 5.00 | 0.00 | 3.30 | (df=4) | 0.03 |
| Locality of respondents | Peri-urban | 83.80 | 64.30 | 77.0 | 5.90 | |
| | Urban | 16.20 | 35.70 | 23.0 | (df=1) | 0.015 |
| Occupation of respondents | Employed | 61.2 | 100 | 74.6 | | |
| | Self employed | 32.6 | 0.0 | 21.3 | 21.81 | |
| | Not employed | 6.2 | 0.0 | 4.1 | (df=2) | 0.000 |
| Household size in groups | Small family (1 – 4 people) | 20.00 | 59.50 | 33.60 | | |
| | Medium family (5–6 people) | 38.80 | 21.40 | 32.80 | 19.36 | |
| | Large family (7 and above) | 41.20 | 19.00 | 33.60 | (df=2) | 0.000 |
| Land hold size | Small (0-0.25) hectares | 66.20 | 61.90 | 64.80 | | |
| | Medium(0.26-1.5) hectares | 3.80 | 9.50 | 5.70 | 1.7 | |
| | Large (>1.5) hectares | 30.00 | 28.60 | 29.50 | (df=2) | 0.428 |
| Income of respondent | Low (<5000,000), Tshs/year | 58.8 | 42.90 | 53.3 | | |
| | Medium (5000,000-8000,000),Tshs/year | 35.0 | 35.70 | 35.20 | 7.15 | |
| | High (>9000,000), Tshs/year | 6.20 | 21.40 | 11.50 | (df=2) | 0.067 |
| Marital status of respondents | Single | 55.00 | 69.00 | 59.80 | | |
| | Married | 41.20 | 31.00 | 37.70 | 3.25 | |
| | Separated | 3.80 | 0.00 | 2.50 | (df=2) | 0.19 |

**(ii) Education level of the respondents and the campus they graduated from**

Significant difference (p = 0.038) was observed between the two groups of respondents in relation to education level (Table 4.1). Most of respondents engaged (72.5%) and not engaged (81%) in livestock enterprises were holders of ordinary Diploma (NTA Level 6). Certificate holder (NTA 5) respondents (9%) were engaged into livestock enterprises. Furthermore, significant difference was observed between the two groups where respondents graduated from in relation to engagement into livestock enterprises. A large proportion of respondents (61.5%) graduated from Tengeru campus, of which the majority (70.7%) of respondents were engaged into livestock enterprises.

**(iii) Locality and occupation of respondents**

In contrast, a large proportion of respondents (83.6%) living in peri-urban areas were engaged in livestock enterprises, while 35.7% of respondents living in urban areas were not engaged. All employed respondents (100%) were not engaged in livestock enterprise, while all self-employed (32.6%) and non-employed (6.2%) were engaged.

## 4.2 Comparing the means to test whether there exists significant difference between numerical variables and engagement or disengagement into livestock enterprises

**(i) Age and annual income of respondents**

Significant difference (p=0.028) was observed between respondents engaged and not engaged in livestock enterprises in relation to their annual income. Majority of respondents had low and medium income. Age didn’t show significant different in relation to establishment of livestock enterprises.

**(ii) Household size and land hold size**

Significant difference (p = 0.000) was observed between respondents engaged and not engaged in livestock enterprises in relation to household size (Table 4.2). A large proportion of respondents engaged in livestock enterprise had family sizes ranging from medium to large whereas respondents not engaged had household sizes ranging from small to medium. Overall proportion of respondents had small landhold size and few had large landhold size of more than 1.5 hectares.

**Table 4.2: Independent Samples t Test table**

| | **Levine's test for equality of variances** | | **t-test for equality of means** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **F** | **Sig.** | **t** | **df** | **Sig. (2-tailed)** | **Mean Difference** | **Std. Error Difference** | **95% confidence interval of the difference** | |
| | | | | | | | | **Lower** | **Upper** |
| Age | 5.167 | .025 | .928 | 102 | .356 | .113 | .122 | -.129 | .356 |
| | | | .973 | 28.144 | .339 | .113 | .116 | -.125 | .352 |
| Income | .483 | .488 | -2.545 | 120 | .012 | -.337 | .133 | -.600 | -.075 |
| | | | -2.407 | 16.059 | .028 | -.337 | .140 | -.634 | -.040 |
| Household size | 12.666 | .001 | 4.444 | 120 | .000 | .380 | .086 | .211 | .550 |
| | | | 4.184 | 66.627 | .000 | .380 | .091 | .199 | .562 |
| Land hold size | .045 | .832 | -.108 | 120 | .914 | -.010 | .094 | -.197 | .177 |
| | | | -.107 | 67.683 | .915 | -.010 | .095 | -.200 | .179 |

### 4.4 Perception of LITA Graduates on Livestock-Based Enterprises in Tanzania

Basing on Coefficient of Variation, high cost (CoV = 0.3058), economic non-viability (CoV = 0.3358) and lack of information on livestock entrepreneurship opportunities (CoV = 0.4269) were perceived to rank first, second and third, respectively (Table 4.3). This indicated that negative perception on high cost, economic non-viable and lack of

information on livestock entrepreneurship opportunities limit graduates to venture livestock enterprises to the highest degree. While negative attitude towards livestock-based entrepreneurship and inadequate knowledge on establishing livestock-based enterprises had coefficients of variation of 0.4844 and 0.5315 respectively. This indicated that negative attitude and negative perception on inadequate knowledge in establishment of livestock based enterprises limit graduates to venture livestock enterprises to the moderate degree.

**Table 4.3: Perceptions of respondents on livestock-based enterprises in Tanzania**

| Description | Mean | Std Deviation | Coefficient of variation | Ranking of CoV |
|---|---|---|---|---|
| High cost | 3.15 | 1.058 | 0.3358 | 1 |
| Economic non-viable | 3.17 | 1.14 | 0.359 | 2 |
| Lack of information on livestock entrepreneurship opportunities | 3.08 | 1.315 | 0.4269 | 3 |
| Negative attitude towards livestock-based entrepreneurship | 2.9 | 1.405 | 0.4844 | 4 |
| Inadequate knowledge on establishing livestock-based enterprises | 2.57 | 1.366 | 0.5315 | 5 |
| Overall mean | 2.97 | | | |

## 4.5 Attitudes of LITA graduates towards self-employment in livestock sector in Tanzania

### (i) Factors influencing negative attitude towards livestock entrepreneurships

In Table 4.4 below are presented results on attitudes of LITA graduates towards self-employment. Looking at the coefficient of variation, one can comment that individual fear of failure (CoV = 0.3089), unwillingness to take risks (CoV = 0.3091), and lack of confidence in entrepreneurships (CoV = 0.3392) ranked first, second and third respectively, as factors that influence negative attitude. Inability to recognize available business opportunities (0.3831) and Negative perception on entrepreneurship in livestock sector (0.3997) influenced negative attitude to a moderate extent. Other factors which

influenced negative to the low extent are livestock sector has no direct future, livestock sector is a rough job consisting of low returns and lack of interest.

**Table 4.4: Factors influencing negative attitude towards livestock entrepreneurships in Tanzania**

| Variable | Mean | Std. Deviation | Coefficient of variation | Ranking of CoV |
|---|---|---|---|---|
| Individual fear of failure | 3.71 | 1.146 | 0.3089 | 1 |
| Unwillingness to take risks | 4.18 | 1.292 | 0.3091 | 2 |
| Lack of confidence in entrepreneurships | 3.59 | 1.218 | 0.3392 | 3 |
| Inability to recognize /capitalize available business opportunities | 3.20 | 1.226 | 0.3831 | 4 |
| Negative perception on entrepreneurship in livestock sector | 3.54 | 1.415 | 0.3997 | 5 |
| Livestock sector has no direct future | 2.34 | 1.111 | 0.4747 | 6 |
| Livestock sector is a rough job consisting of low returns | 2.28 | 1.187 | 0.5206 | 7 |
| Lack of interest | 1.99 | 1.572 | 0.7899 | 8 |
| Overall mean | 2.951 | | | |

**(ii) Motivation to venture in livestock enterprises**

Table 4.5 summarizes responses of the respondents in ranking the extent to which they are motivated to venture any livestock enterprise (Table 4.5). Having good knowledge on establishment of livestock enterprises was ranked number 1 (CoV = 0.2228), livestock enterprises pay more (CoV = 0.3311) ranked the second and livestock enterprises are more easy to operate had a (CoV = 0.3560) ranking the third, while lack of employment ranked the fifth indicating the weak motive towards engagement into livestock based enterprises for the graduates.

**Table 4.5: Factors motivating respondents to engage in livestock enterprises**

| Reasons for motivation | Mea | Std | Coefficient | Rankin |
|---|---|---|---|---|

| | n | Deviation | of Variation | g of CoV |
|---|---|---|---|---|
| Have good knowledge on establishment of livestock enterprises | 3.29 | 0.733 | 0.2228 | 1 |
| Livestock enterprises pays more | 3.02 | 1.000 | 0.3311 | 2 |
| Livestock enterprises are more easy to operate/run | 2.32 | 0.826 | 0.3560 | 3 |
| Lack of employment | 1.40 | 0.799 | 0.5707 | 4 |
| Overall mean | 2.5 | | | |

**(iii) Interest in the sector of livestock value chain**

The respondents were asked to rank their areas of interest in sub-sectors that are found in livestock value chain. Values of coefficient of variation (CoV) were used to allow interpretation and discussion of findings (Table 4.6). Livestock farming ranked number 1 according to its CoV of 0.1387. Processing/value addition had CoV of 0.2110 and ranked second. Marketing had a CoV of 0.2354 and ranked the third, while inputs (0.3668) ranked the fourth, indicating the last area of interest in the livestock value chain for the graduates.

**Table 4.6: Respondents 'preferences in relation to sub-sectors of livestock value chain**

| Livestock sub-sectors | Mean | Std deviation | Coefficient of variation | Ranking of CoV |
|---|---|---|---|---|
| Livestock farming | 4.60 | 0.638 | 0.1387 | 1 |
| Processing/value addition | 3.89 | 0.821 | 0.2110 | 2 |
| Marketing | 3.92 | 0.923 | 0.2354 | 3 |
| Inputs (i.e. vets, incubators) | 3.11 | 1.141 | 0.3668 | 4 |
| Overall mean | 3.88 | | | |

**(iv) Areas of interests in livestock entrepreneurship**

According to criterion of coefficient of variation (Table 4.7), dairy farming (CoV = 0.3039), beef cattle fattening (CoV= 0.3867), and processing of dairy products (CoV = 0.3952) were ranked first, second and third respectively.

**Table 4.7: Respondents' preferences in livestock enterprises**

| Area of enterprises | Mean | Std. Deviation | Coefficient of variation | Ranking of CoV |
|---|---|---|---|---|
| Dairy farming | 3.84 | 1.167 | 0.3039 | 1 |
| Beef cattle fattening | 3.16 | 1.222 | 0.3867 | 2 |
| Processing of dairy products | 2.92 | 1.154 | 0.3952 | 3 |
| Animal clinic services | 3.00 | 1.199 | 0.3996 | 4 |
| Poultry | 3.58 | 1.493 | 0.4170 | 5 |
| Shoats | 1.71 | 0.721 | 0.4216 | 6 |
| Advisory services | 3.35 | 1.482 | 0.4423 | 7 |
| Rabbits | 2.49 | 1.115 | 0.4477 | 8 |
| Trading on livestock products and animal feeds | 2.93 | 1.334 | 0.4553 | 9 |
| Pig production | 2.8 | 1.431 | 0.5110 | 10 |
| Pasture establishment | 2.66 | 1.377 | 0.5176 | 11 |
| Overall mean | 2.95 | | | |

### 4.6 Constraints and challenges facing livestock-based enterprises in Tanzania

A total of 15 challenges were listed.

**Table 4.8: Constraints and challenges facing livestock-based enterprises in Tanzania**

| Category | Challenge/constraint | Multiple Responses | |
|---|---|---|---|
| | | Frequency | Percent |
| Access to inputs, machinery and services | Inadequate extension services | 75 | 63.6 |
| | Inadequate livestock inputs | 63 | 53.4 |
| | Inadequate project /machinery advisory services | 57 | 48.3 |
| | Inadequate skilled labour | 50 | 42.4 |

| Category | Challenge/constraint | Multiple Responses | |
|---|---|---|---|
| | | Frequency | Percent |
| Capital and expertise in business | Inadequate storage and processing facilities | 42 | 35.6 |
| | Inadequate information about livestock business | 93 | 76.2 |
| | Inadequate education on livestock enterprise establishment | 82 | 67.2 |
| | Location of business | 77 | 63.1 |
| | Inadequate markets | 73 | 61.9 |
| | Lack of competence in business | 72 | 59.0 |
| | Inadequate funding | 46 | 37.7 |
| Access to land and transportation | Transportation | 88 | 72.1 |
| | Land conflicts | 78 | 63.9 |
| | Land shortage | 52 | 42.6 |
| | Land tenure insecurity | 51 | 41.8 |

**(i) Challenges and/or constraints of access to inputs, machinery and services**

Results in Table 4.9 show that, inadequate extension services reported as a leading challenge (63.6%), while inadequate livestock inputs ranked the second (53.4%) and inadequate project /machinery advisory services ranked the third (48.3%).

**(ii) Challenges and/or constraints of capital and expertise in business**

The study identified other factors that challenge or constrain the livestock-based enterprises in Tanzania (Table 4.9). Inadequate information about livestock business ranked the first (76.2%), inadequate education on livestock enterprise establishment ranked the second (67.2%) and location of business ranked the third (63.1%).

**(iii) Challenges of access to land and transportation**

Table 4.9 shows that transportation (72.1%), land conflicts (63.9%) and land shortage (42.6%) respectively ranked first, second and third in this category of challenges and/or constraints.

**Table 4.9: Factors influencing livestock entrepreneurship in Tanzania**

| Variable | Factors |
|---|---|
| Perception | High cost |
| | Economic non-viable |
| | Lack of information on livestock entrepreneurship opportunities |
| Attitudes | Individual fear of failure |
| | Unwillingness to take risks |
| | Lack of confidence in entrepreneurships |
| Support | Inadequate extension services |
| | Inadequate project /machinery advisory services |
| | Transportation |
| Information | Inadequate information about livestock business |
| Marketing | Inadequate markets |
| | Location of business |
| Financial | Inadequate funding |
| Land | Land conflicts |
| | Land shortage |
| | Land tenure insecurity |
| Managerial and leadership | Lack of competence in business |
| | Inadequate knowledge on establishing livestock based enterprises |

**(i) Model specification**

Two dependent variables were considered in the current study, that is, whether a particular respondent is engaged or not engaged into livestock enterprises. These dependent variables were binary e.g. engaged into livestock enterprise = 1 and not engaged into livestock enterprise = 0. The independent variables were perception, attitudes, supports, information, marketing, financial, land and managerial and leadership. A multiple logistic regression model was used to investigate the relationship of factors as predictors of the dependent variables as per below equation;

$$logit(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 \beta_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8$$

where;

$P$ = The probability of presence of the characteristic of interest

$\beta_0$= A constant, the value of $Y$ when $X$ values are zero

$\beta_1$ = The slope of the regression surface (The$\beta_1$ represents the regression Coefficient associated with each$X_i$).

$X_1$ = Perception

$X_2$ = Attitudes

$X_3$ = Support

$X_4$ = Information,

$X_5$ = Marketing

$X_6$ = Finances

$X_7$ = Land

$X_8 X_6$ = Managerial and leadership

**(ii) Fitting a regression model with all possible explanatory variables**

Regression results are presented on Table 4.10, the p-value for overall model (0.0000) is less than (0.05), hence we conclude that the model fit and has a big power in predicting the outcome variable.The coefficient of determination (Pseudo $R^2$) as adjusted gives a value of 0.316 implying that 31.6% of the variation in dependent variable is explained by the independent variables.

**Table 4.10: Logistic regression weights**

| Variable | **B** | **S.E.** | **Wald** | **df** | **Sig.** | **Exp(B)** |
|---|---|---|---|---|---|---|
| Perception | 3.193 | 0.908 | 12.362 | 1 | 0.000 | 24.360 |
| Information | 4.762 | 1.171 | 16.541 | 1 | 0.000 | 116.962 |
| Managerial and leadership | -3.785 | 1.037 | 13.322 | 1 | 0.000 | 0.023 |
| Support | 2.783 | 0.851 | 10.685 | 1 | 0.001 | 16.164 |
| Marketing | 4.377 | 1.296 | 11.402 | 1 | 0.001 | 79.623 |
| Attitudes | 0.495 | 0.419 | 1.400 | 1 | 0.237 | 1.641 |
| Finances | 0.596 | 0.914 | 0.425 | 1 | 0.514 | 1.815 |
| Land | -2.020 | 1.240 | 2.652 | 1 | 0.103 | 0.133 |
| Constant | -36.716 | 8.624 | 18.125 | 1 | 0.000 | 0.000 |
| $R^2$ =31.6% | | | | | | |

Table 4.10 shows that perceptions, information, management and leadership, support and marketing were highly significant in relation to the engagement into livestock enterprises. The parameter estimates of the remaining three (3) independent variables (i.e. land, finances, and attitudes) turned out to be not significant. The coefficients of the

independent variables can be presented in the following multiple logistic regression equation;

$$logit(P) = -36.716 + 3.193\,perc + 0.495\,attit + 2.783\,supp + 4.762\,infor + 4.377\,marketing + 0.596\,financial$$

In fitting a model, an independent variable with a regression coefficient not significantly different from 0 (P>0.05) can be removed from the regression model. If P<0.05 then the variable contributes significantly to the prediction of the outcome variable. In this case if we remove the insignificant independent variables, the final model was found to be:

$$logit(P) = -36.716 + 3.193\,perc + 2.783^{+4.762}\,inf + 4.377\,mark - 3.785\,mngt$$

# CHAPTER FIVE

## 5.0 DISCUSSION

### 5.1 Characteristics of respondents

Large proportion of males was engaged into livestock enterprises as compared to females for all the surveyed LITA campuses. According to Sondari (2014), men have stronger entrepreneurial intention than women. This could be attributed to cultural norms which deny women rights beyond usufruct rights to own properties including land, animals, business enterprises and rights to decision-making (Valle, 2014). Majority of women still perform basic roles according to the job descriptions of the organizations they are recruited with. On top of that their domestic works and care lead to a reduced ability to allocate adequate time and financial resources to engage in livestock enterprises. The adults of age (36-60 years) constituted a large proportion of workforce engaged in livestock enterprises. This age distribution pattern indicated that young graduates are less dependent on livestock keeping as they can find alternative formal or informal employment. Large group of those engaged into livestock entrepreneurship are civil servants who need an additional source of income and food production to compensate for low earned wages (ILO, 2017).

Significant difference observed between respondents engaged and not engaged in livestock enterprises in relation to their education level. This significance could perhaps be explained by the fact that majority of diploma holders are matured enough hence the beginning of independent life. At this age they consider income as an important factor in making their lives, this increases their ability to take risk in establishment of livestock enterprises. Most of respondents engaged into livestock enterprises were ordinary diploma (NTA level 6) holders. The syllabus covered by ordinary diploma graduates is

different from the ones covered by technician certificate holders. It has appropriate coverages making graduates capable of thinking out of box and generate new and innovative ideas, and in becoming entrepreneurs (Kabir *et al.,* 2017). Graduates who majored in entrepreneurship skills revealed high intention of becoming entrepreneurs by starting their own business (Idris, 2017).

Large proportion of respondents living in peri-urban areas is engaged in livestock enterprises than those living in urban areas. Small startup capital, residing near urban consumers of animal products, and increase in demand for livestock products in urban areas are the reasons to motivate many to engage in livestock entrepreneurships in peri-urban areas. Keeping animals in urban areas is highly limited by land availability, environmental quality standards and social conflicts with neighbours. In many cities it is more difficult for the urban poor to get access to the land needed for animal farming enterprises (Howard, 2014). Livestock kept in peri-urban areas are poultry, goats, sheep, pigs and dairy cattle (Mhache and Lyamuya, 2019). For all employed respondents were not engaged in livestock enterprise, while all self-employed and non-employed were engaged due to the fact that engagement in livestock enterprises is the only possible way of earning a living. Furthermore, most of people are engaged in agriculture enterprises and related ones in order to have an income for their livelihoods as they find difficult to secure formal employment.

A large proportion of respondents engaged in livestock enterprise had family sizes ranging from medium to large. The increase in number of household members is negatively related with the number of livestock sold to the market by farmer. Nziku *et al.* (2016) found that, large households are more engaged into livestock enterprises for food security reasons. Large sized households in Tanzania are engaged in cattle enterprises for

income generation and food security. Interest towards establishment of livestock enterprises increases among graduates (respondents) with household size. Tesfay *et al*. (2012) found that in Ethiopia household members participate in various dairy activities both in urban and peri-urban areas and allocation of tasks is done according to age, sex and nature of the tasks. Adults are involved in activities such as purchasing, selling cattle, caring sick animals, feeding animals and watering. Child boys were mostly involved in herding, watering and barn cleaning. Household girls had less involvement in the farms and none of the hired children girls were involved in any dairy activities.

Significant difference was observed between respondents engaged and not engaged in livestock enterprises in relation to their level of income. Majority of respondents engaged into livestock enterprises had annual incomes ranging from low to medium while a few respondents with high income were engaged also. Different social groups engaged into livestock entrepreneurships have different reasons for engagement. The low and medium income households are more engaged into livestock based enterprises as a response to economic crisis and growing demand for livestock products. Low and medium income households are engaged in more than one type of animal although unimportant specie may be poultry as they are well able to scavenge for their feed, especially if they are of the local indigenous type, but sheep and goats are also common. It is an important source of income for low income households and for female-headed households in urban and peri-urban areas(Mhache, 2019). In all the results indicate that high income households are more engaged into dairy cattle farming overwhelmingly for milk production which is likely to be similar to Sukman, (2017).

### 5.2 Perceptions of LITA graduates on livestock-based enterprises in Tanzania

LITA graduates perceive entrepreneurship in livestock sector to involve high costs. This is in contradiction with the finding by Shinnar (2015), that some graduates and professionals have managed to provide evidences on how they succeeded in their entrepreneurships using small capital invested step-wise over long period of time. It therefore needs a long plan to be implemented carefully. Chetia (2019) pointed out that some of the animal species may be kept at low costs. For example goat farming is a low investment and high profit livestock farming business. Goat keeping requires less space for housing due to their small body size in comparison to other livestock species. The finding conform with the findings by Mwasalwiba *et al.* (2012b), that taxation is among the domains where livestock entrepreneurs come into contact with corruption, procedures in paying tax and other levies which prevent business growth. The tax authority shows a number of procedural inefficiencies. The fear of paying high amounts of taxes has led many entrepreneurs to avoid growth and decide to remain in the informal sector or to operate micro businesses.

LITA graduates perceive entrepreneurship in livestock sector to be economically non-viable. This is in contradiction with the findings reported by Shinnar (2015), that fresh graduates and low experienced professionals are wrongly influenced by their social groups/networks at colleges or elsewhere to perceive livestock based entrepreneurships as difficult to start. Despite students' uncertainty regarding their choice of pursuing a degree in agriculture, the study found that they generally have a positive perception about the potential of agribusiness as an avenue for self-employed enterprise creation for them and that they see themselves succeeding in agricultural enterprises upon graduation (Zakaria and Hudu, 2013). Furthermore, students interviewed perceived agricultural sector and

related ones in Ghana as having a lot of untapped potential which they can exploit to establish themselves upon completion.

Large number of respondents perceived that lack information on livestock entrepreneurship opportunities limit LITA graduates to venture livestock enterprises significantly. This significance is explained by the fact that youth are not involved in agricultural activities because agriculture as a career of choice is largely burdened with misperceptions and a lack of information and awareness (Muthomi, 2017b). Edelman and Yli-Renko (2010) established that perceptions of the market opportunity drive the entrepreneur's efforts to start a new venture, hence the greater the perceived opportunity the more likely an entrepreneur will aggressively pursue that opportunity and vice versa. Njeru, (2017a), noted that poor perception towards animal production by graduates can also be attributed to the way it is perceived as a last option for the under-achieving students. These results to a moderate extent indicated that LITA graduates had negative perceptions on entrepreneurships in livestock sector. Bamaiyi ( 2014) showed that youths including graduates are less interested towards engaging in animal-agriculture enterprises because they perceive farming not as an attractive career field. Insufficient information on entrepreneurial opportunities negatively impacts the ambitions to start a business. Graduates who are potential entrepreneurs require enough information about the role, services and mission of the institutions that give support to enterprise creation, which in most cases do not happen in Tanzania. Those with access to information are more likely to engage in entrepreneurial ventures than those without. Most of us have good intentions we want to establish our own businesses but there is nowhere we can get information about acquiring initial capital, taxation, business premises renting, registering a business, and many more.

Significant difference was observed between negative perceptions of LITA graduates in relation to livestock-based enterprises in Tanzania. Respondents perceived that becoming an entrepreneur in the livestock sector is highly risky and is seasonal in nature meaning there could be periods of waiting without income. Funmilayo *et al.* (2017b) disagreed with the negative perception that farming was an inferior occupation for the uneducated or retirees. This result gives credence to the view expressed by Muathe (2016) that, the youths are not involved in agricultural activities because agriculture as a career choice is largely burdened with misperception.

LITA graduates perceived to have inadequate knowledge in establishment of livestock-based enterprises this is supported by a finding by Katundu (2016), that the syllabuses are not comprehensive enough to prepare students to acquire practical entrepreneurial skills and knowledge. In an ideal situation, it is expected that a business management student, upon graduation, should be sufficiently equipped with skills to draft a decent business plan. The reality though is that college graduates in Tanzania are not only ill prepared for business start-up but also are often not even qualified enough for the labour market. The major challenge is the lack of education system in Tanzania to impart creativity among students.

### 5.3 Attitudes of LITA graduates towards self-employment in livestock sector in Tanzania

Individual fear of failure influenced negative attitude towards livestock entrepreneurships significantly. Fear of failure on individual cognition and behaviour can be beneficial as well as detrimental. Despite this dualistic nature in entrepreneurship, fear of failure is examined as only a barrier to entrepreneurial behaviour. As such, this significance could be partly explained by the fact that fear of failure affects emotions and moods, at the same

time fear of failure feelings interfere with the creation, evaluation, reformulation, and exploitation of possible entrepreneurial opportunities (Ismail *et al.,* 2015). Hayton and Cacciotti (2014), reveals that fear of failure is an inhibitor of entrepreneurial behaviour. Shinnar (2015) found that perception of fear of failure decreases the intention to become entrepreneur. Using data from the Global Entrepreneurship Monitor (GEM) Hess and Hazell (2016) reported that the probability of entrepreneurial engagement after exit is higher for individuals reporting lower level of fear of failure.

Negative attitude by respondents towards livestock entrepreneurship was influenced by unwillingness to take risk significantly. Many graduates fear to venture into entrepreneurship including livestock ones because of the associated risks and instead they are attracted to formal employment which pays less, but is less risky (Katundu, 2016). This conform with the study of Qureshi and Kamal (2009), that in Pakistan, 28 percent of the working-age population including graduates agrees that unwillingness to take risk stops them from thinking about establishing their own enterprises. A study by Mwasalwiba *et al.* (2012b) found that in Tanzania individuals and graduates engaged in small business including livestock based ones have substantially higher debts and a higher probability of borrowing from commercial banks than those not engaged because of having low ability to take risk.

Lack of confidence influenced negative attitude towards livestock entrepreneurship significantly. This significance level could perhaps be explained by the fact that if an individual confidence is low towards entrepreneurship, it directly influence negative attitude towards entrepreneurial intention (Amran *et al.,* 2013). With regards to level of confidence between gender, the study of (Kirkwood, 2009) indicated that men tend to have higher self-confidence than women and that this affects their entrepreneurial

intentions. Anderson *et al.* (2009) stated that low confidence attitudes influence negative entrepreneurial intentions among graduates of tertiary institutions. Furthermore, a study by Ferreira *et al.* (2012) pointed out that those who choose self-employment had higher self-confidence than non-entrepreneurs.

Inability to recognize available business opportunities influenced negative attitude towards entrepreneurships significantly. This significance is due to the fact that respondents were unable to identify potentials found in the livestock sector leading to negative perception about the sector. This conform with the findings of IFAD (2014) that, in Africa including Tanzania there are enormous untapped potential in livestock sector that can be harnessed to create self-employment for school leavers. Respondents find difficult to engage into livestock sector until is modernized so that it can be able to create more jobs for them and reduce the risks and uncertainties associated with the sector as it is today (Ndyali, 2016). Naamwintome and Bagson (2013) observed in Ghana that increased earnings from livestock entrepreneurships enabled the youth including graduates to develop themselves and their families thus attracting other youth who had migrated to urban cities.

Lack of interest influenced negative attitude towards livestock entrepreneurship significantly. This could perhaps be explained by the fact that despite the challenges of unemployment, very few graduates are willing to engage in livestock entrepreneurship (Mwasalwiba *et al.*, 2012b). Dina (2012) cautioned that, even though there is a strong correlation between tertiary education and the propensity to engage in livestock entrepreneurship acquiring tertiary education does not necessarily convert an individual into an entrepreneur. Alternatively, graduates prefer the guaranteed income of formal employment, as opposed to the risks associated with entrepreneurship (Tshikovhi and

Shambare, 2015). Mwasalwiba *et al*. (2012b) reported increased lack of interests in entrepreneurships for graduates' business start-up in Tanzania, despite efforts in teaching entrepreneurship at colleges. Tshikovhi and Shambare (2015) argued further that graduates still show very little interest in becoming entrepreneurs, even in the face of policies and programmes aimed at promoting entrepreneurship. Davey *et al.* (2011) pointed out that, the higher interest for self-employment, the higher the perceived feasibility of self-employment.

Negative perceptions on entrepreneurships in livestock sector influence negative attitude towards income accumulation through livestock keeping to a greater extent. A study by Abebe (2015) reported a similar finding that if graduates have negative attitudes it is unlikely that they will become self-employed. Some young people including graduates think that animal production is only for the elderly or sometimes retired government staff but youths are known to do very well in animal production when they diligently go into it (Oladeebo and Ambe-Lamidi, 2007). When the attitude of graduate towards entrepreneurship is wrong one can only expect a decline in the rise of animal enterprise productivity.

Perceiving that livestock sector is a rough job consisting of low returns limits the respondents to venture into livestock enterprises significantly. This is due to the fact that decline in livestock enterprises is due to non interest of livestock professionals into livestock sector (MALF, 2017). Furthermore, school leavers including livestock professionals are in search of employment in fields other than agriculture. Ndyali (2016) found that livestock sector is not given high priority compared to other sectors. The reason could be graduates of tertiary institutions having conversional opinion that people engaged in animal production obtained low returns and are working in a sector of

no clear future. Abdullah and Sulaiman (2013) pointed out that, despite the enormous opportunities for self-employment in the livestock sector, most graduates of animal science fields continue to hunt for office jobs that are no longer available.

The respondents showed the extent to which they are motivated to venture into any livestock enterprise. Graduates are motivated by the fact that they have graduated with knowledge and skills useful in establishing livestock based enterprises. The level of knowledge and familiarity with the concept of entrepreneurship significantly encourage livestock professionals to venture in enterprises and become entrepreneurs. This is supported by findings of (Poschke, 2019), that trainings received at colleges and the alarming unemployment rate has awakened livestock professionals to the reality that they need to be job creators and self-employed because livestock is a lucrative enterprise. Entrepreneurship education improves motivation towards being entrepreneurial by inspiring students' personal attraction towards entrepreneurship and perceived behavioral control (Ayalew, 2018).

The fact that livestock enterprises pay more motivated respondents to engage in livestock enterprises significantly led many graduates to engage themselves in that particular activity. The significance observed could be explained by the fact that, livestock keepers are willing to pay for advisory services if their income from livestock entrepreneurship increases (Lemma and Sodo, 2014b). Since ancient times, livestock keeping has been a good source of income for human beings. At present, livestock farming is undoubtedly a money-making business both as large-scale and small scale. Dairy farming boosts livestock entrepreneurs' incomes through selling of fresh milk and value added products like yogurt and cheese. Fish farming is a profitable business for livestock entrepreneurs who have ample water bodies. Majority of pigs are used as clothing, cosmetics, processed

food ingredients and for medical use. Quail farming is quite profitable for livestock entrepreneurs as well. Quails have quick growth, early sexual maturity, short generation interval and prolificacy in egg production. Quail meat has less fat and fewer calories, making it an ideal food for health conscious people. Poultry farming is a profitable livestock business for farmers (Chetia, 2019).

The fact that livestock enterprises are easy to run pays motivated respondents to engage in livestock enterprises significantly. This significance is due to the fact that, the possibility of establishing livestock enterprises on small-scale levels and growing it gradually makes small start-ups easy (Funmilayo *et al.,* 2017b). This reduces the pressure for huge capital as may be required in some other sectors. Production cycles are short in fish farming and poultry hence returns are quick and may be reinvested for growth. Other species which has huge international market demand is the crab. With very low initial capital, you can easily start and run a mud crab farming business (Chetia, 2019). Cultured pearl industry is getting huge prominence. Cultured pearls make up almost 100 percent of the pearls sold nowadays. Pearl farming is highly profitable livestock business, though it requires long term planning.

Lack of employment motivated respondents to engage in livestock enterprises significantly. In sub-Saharan Africa including Tanzania the rate of youth unemployment is one of the highest in the world (ILO, 2020). This rate is 3.5 times higher than that for adult and is reflecting the disadvantage of the youth in the job market in Sub-Saharan Africa. Despite the high rate of unemployment, there are many institutions producing yearly thousands of graduates without employment (Ndyali, 2016), leading to the increase in the number of youth seeking jobs. Agriculture and related fields becomes a good avenue to provide self-employment and livelihood to unemployed youth (Abdullah and

Sulaiman, 2013). Livestock sector offers opportunities in terms of employment and economic prosperity(Covarrubias *et al.,* 2012). The option of livestock entrepreneurship to tackle youth unemployment can also solve the problems of food insecurity (Abdullah and Sulaiman, 2013).

Regarding the preferred livestock sub-sector along the livestock value chain, livestock farming was the most preferred sector by respondents. This can perhaps be explained by the fact that they have covered relevant animal husbandry skills necessary in raising domesticated animals. Large proportion of graduates who showed interest in livestock ventured into livestock farming. This finding is in line with the report of Odedrian (2015), which can be inferred that the students are more likely to venture into sub-sectors that are directly related to their courses of study.

Respondents' showed preferences to sub-sectors of livestock value chain in relation to processing or value addition. The significance could be explained by the fact that they find it as a way to keep more value of a commodity within a local economy. Recently, livestock professionals including graduates are beginning to consider how they might engage in increased contract relations with livestock value chain integrators. In processing sub-sector there are opportunities such as increase in processing facilities, new food processing plants and alternative farming systems which can create important new markets for producers. Graduates who own small scale livestock enterprises too may find new opportunities of branded products. Capturing more of a commodity's value at the site of primary production can have positive impacts on some farm household incomes and farm-related businesses (Taylor and Hinrichs, 2012).

Respondents showed preferences in marketing sub-sectors of livestock value chain significantly. This was perhaps because of availability of ready market and delivery centres for livestock products which encouraged the respondents to opt venturing in livestock business. Respondents find an opportunity for them to link up the farm to market as a source of job creation and income generation. Marketing of live animals, milk, butter, eggs, hide and skin is an important activity for all entrepreneurs. Supply of these products is usually higher in urban areas due to market orientation and urbanization, which create demand for products. Income from sale of these products was significantly higher in urban areas than peri-urban areas (Mhache and Lyamuya, 2019).

Respondents indicated dairy farming as their area of preference in livestock enterprises. The observed significance in relation to dairy farming is partly explained by the fact that dairy farming has a great potential for improving the living standards of the people and contributing towards reduction of poverty (Njombe *et al.,* 2012). The ability of the dairy enterprise to generate regular income and to contribute to the household diet on a regular basis throughout the year is an advantage over other agribusiness enterprises (Jan *et al.,* 2011). The sources of annual return to dairy farm are from sell of milk, followed by appreciation of calves and heifers. Respondents interested in dairy farming faced space and labour constraints on the number and types of animals they can keep. Alternatively they decided to keep some small stock such as poultry because their production cycles are short hence returns are quick and may be reinvested for growth (WFP, 2009).

Significant difference was observed between respondent's preferences for livestock enterprises in relation to beef cattle fattening. The observed significance could partly be explained by the fact that cattle fattening provides significant economic benefits to the entrepreneurs (Mlote *et al.,* 2013). Innovative livestock entrepreneurs including LITA

graduates may use this opportunity to establish feedlots for fattening. The growing demands for ruminants' meat from city dwellers as well as improved markets for the animals provide opportunities for the respondents in fattening. Beef cattle fattening is a highly profitable venture with return of premium to the farmer. Cattle fattening mostly conducted through micro-credit activities can form an appropriate enterprise for poverty alleviation and improvement in food security among people (Sarma and Raha, 2014).

Respondents showed also more preference in processing of dairy products than other livestock enterprises. This is because recently there is a constant increase in the demand for dairy products and their derivatives. There have been changes in the demands and expectations of cheese consumers, who demand higher quality and a wider range of varieties, thus establishing the potential for further products to enter the market. Furthermore, the sector has a great potential for improving the living standards of people and contributing towards reduction of poverty through improved nutrition arising from consumption of milk and incomes raised from sale of milk and milk products (Rajaei *et al.,* 2011).

### 5.5 Constraints and challenges facing livestock-based enterprises in Tanzania

#### (i) Challenges to access to inputs, machineries and services

Inadequate livestock inputs, and inadequate project /machinery advisory services challenged livestock based enterprises significantly. This finding was supported by the study of Lwanga (2013) in Uganda in which it was observed that among the factors challenging the youth including graduates to engage into agriculture related enterprises are shortage of livestock resources such as agricultural machineries, access to technical assistance and limited livestock skills. Hess and Hazell (2016) indicated also that most agro-business enterprises and livestock based ones face the challenge of inadequate

capability. This challenge is due to firms to pay no particular attention to strengthening their respective technical support organizations, design and technology centers as well as demonstration units for basic and advanced technologies. The major inputs for livestock development include animal genetic resources, feeds and forages, veterinary drugs, vaccines, machinery equipment and utensils as well as knowledge (Tegegne *et al.*, 2010).

Inadequate extension services challenged livestock-based enterprises in Tanzania significantly. This finding conform with the study by URT (2009), in which it was observed that in Tanzania still there is no substantial improvements in the livestock production amongst smallholder farmers and livestock entrepreneurs despite extension decentralization efforts made to ensure that services are available to many farmers. The country suffers from low livestock productivity due to a number of factors including inadequate extension system leading to ineffective dissemination of technologies, poor market linkages and weak links between research and extension. Furthermore, studies have indicated that the livestock sector in this part of Africa has not shown significant improvement in production and significant increase of livestock enterprises in rural areas (GACSA, 2016). Access to quality and affordable livestock services is constrained by many factors including limited service providers, physical distance, price, information and socio-cultural barriers (Lemma, 2014).

**(ii) Challenges and/or constraints of capital and expertise in business**

Inadequate information about livestock business challenged livestock based enterprises significantly. This significance could partly be explained by large percent of livestock enterprises being based in peri-urban areas where telecommunication services are seriously lacking. Livestock owners come to urban areas only during market days to do their transactions and return back to villages. As a result of this, livestock entrepreneurs are left in the dark and are convinced to take any price given to them, usually lower than

what is expected, because of lacking relevant information on the market. Similarly, Muathe (2016) hypothesized that information infrastructure is inadequate for making youth struggle to access. Underdeveloped market systems cause farmers unable to make profit because most animal products are perishable thus expire within a short period of time. Inadequate business training of entrepreneurs in Tanzania had been a major constraint for development and growth of cattle enterprises (Mashenene and Campus, 2019).

Inadequate funding is a challenge facing livestock based enterprises in Tanzania to a moderate degree. This is because in developing countries including Tanzania, having personal savings is not an easy task and there are great difficulties in acquiring financial assistance. Livestock based entrepreneurs are not liable to access loans from financial institutions due to pre-conditions for loan processing. Financial institutions refuse to lend some small enterprises including livestock based ones because they do not have acceptable collateral which helps in mitigating the risks associated with the loans. Financial inadequacies have led to slow growth of livestock based enterprises. This finding conforms to the finding of Muthomi (2017b) that among the challenges in establishment of livestock based enterprises is access to credit facilities. The procedures of vetting loan applications arranged by financial institution waste so much time that loans are delayed and issued when intended purposes have expired (Ackah and Vuvor, 2010). Graduates rarely access capital simply because they lack assets to pledge as collateral to get funding from financial institutions. Many of the assets that graduates possess usually belong to their parents or elderly relatives (Muthomi, 2017b).

**(iii) Challenges of access to land and transportation**

Land is a challenge facing livestock-based enterprises significantly. This finding conform with findings of a study by Dev (2010) which concluded that youth including graduates face challenges related to land tenure and access to useful land. A similar finding by Muthomi (2017) posit that graduates in Kenya are limited to land due to the fact that it is usually parents who hold titles of owning land. Graduates found unprofitable to start entrepreneurship in small pieces of land, instead they opt to work on other sectors of the economy (Njeru, 2017). Muthomi (2017) opines that women and youths are inaccessible to useful land for establishment of animal–agriculture enterprises. This is because there exist outdated land ownership systems which favor heads of the family only, who in most cases are males, thereby hindering youth including graduates to establish agriculture enterprises and related ones. Njeri and Baba (2019) found out that in some societies married young women have access to land from their husbands but they lack title of controlling the land.

Infrastructural development in connection to road and livestock products transporting vehicles challenged establishment of livestock based enterprises significantly. Michael *et al*. (2018), support that many developing countries including Tanzania are characterized by poor infrastructural development in livestock sector. In this regard the transported livestock products undergo various poorly managed handling processes which have adverse effect on product quality. Animals transported by vehicle face a number of difficulties throughout the journey. Animals are kept standing, without food or water and most rural roads are seasonal and inoperable during the greater part of the year. Trucks are few and are operated for extended hours which are prone to accidents.

### 5.6 Relationships between different factors affecting entrepreneurships in the livestock sector

Support factors limit entrepreneurship in livestock sector significantly. The significance could perhaps be explained by the fact that entrepreneurs including livestock ones face difficulties in obtaining support from responsible institutions, their families, financial lenders, suppliers, and solid customer. Okunlola *et al.* (2016) reported similar results that in South Africa livestock entrepreneurs were not provided enough support to enhance enterprises productivities. The removal of marketing boards' state subsidies along with the de-regulation of the agricultural sector caused serious problems for commercial farmers. Interest rate and export subsidies were removed completely and hence losing market control of its product. Bamaiyi (2013), reported that the failed policies of the government are unfavorable to the progress of livestock enterprises. An example is the shortage of feeds and high prices due to scarcity of soya beans and groundnut cake in Nigeria. Nigerian government made initiative to bring farmers hand phones to support production and communication. Further, a study in Malaysia pointed out that higher education can support greater self-employment and can contribute to entrepreneurship (Lemma and Sodo, 2014).

Market factors contributed significantly in limiting entrepreneurship in livestock sector. This finding is in agreement with the findings established by Bamaiyi (2013) which states that in Nigeria market for animal products produced by livestock enterprises is still limited hence affect sustainability of this important sector. The market for established animal enterprises is not well organized making farmers not benefiting from the existing opportunities. Underdeveloped market systems render farmers unable to make profit because most animal products are perishable and thus expire within a short period of time.

The study established that management and leadership factors were significant in limiting entrepreneurship in livestock based enterprises. This echoes the observation by Hess and Hazell (2016) that many animal firms are incapable to accurately plan and define their directorial objectives, resulting into low firm productivity. Livestock entrepreneurs including graduates faced challenges of poor management and great competition for scarce resources among other livestock farmers engaged in similar enterprises (Sholto-douglas*et al*., 2015). Furthermore, these findings concur with Shibia (2010) argument that managerial and leadership factors influence negative attitude on livestock establishment significantly.

Information factors limit entrepreneurship in livestock sector significantly. The results agree with findings of the study reported by South African Journal of Agricultural Extension (2016), that farmers owning livestock enterprises are faced with challenges of insufficient market information. Many livestock entrepreneurs tried to sell their products to supermarkets but were instructed that their products do not meet the requirements specified by the supermarkets and lack certificate for good animal -agricultural practices. Another study by Charlotte Goemans (2014) pointed out that youth including graduates are rarely involved in livestock based enterprises because their professional career is largely burdened with misperceptions, lack of information and awareness.

# CHAPTER SIX

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusion

#### 6.1.1 Perceptions of graduates on livestock-based enterprises in Tanzania.

The study concluded that the respondents had a moderate negative perception of self-employment in livestock sector. This negative perception was associated with other socio-economic characteristics which could be shaped to make respondents inspired with entrepreneurship in livestock sector. The respondents' interests were concentrated on dairy, beef cattle fattening, poultry farming and advisory services at the expense of other equally profitable types of livestock enterprises. In the presence of motivational factors such as possession of good knowledge in establishment of livestock enterprises, the fact that livestock enterprises pay more, livestock enterprises are more easy to operate and lack of employment, LITA graduates would hug self-employment in livestock sector.

#### 6.1.2 Attitudes of LITA graduates towards self-employment in livestock sector in Tanzania

The study concludes that entrepreneurial attitudes and entrepreneurship education predict self-employment intentions of students. Therefore the decision on whether to be involved in livestock entrepreneurship was not only confined to attitude, acceptance and knowledge but was also determined by other factors such as family support, intensity of promotion by related government agencies and related authorities.

The motivating factors make self-employment in livestock sector to be attractive. For instance, an existing opportunity for profit making may attract LITA graduates to start-up their own livestock based enterprises. Similarly, low wage or dissatisfied condition of work would make paid employment in livestock sector to be less attractive.

### 6.1.3 Constraints and/or challenges facing livestock-based enterprises in Tanzania

The study concludes that LITA graduates who venture in livestock based enterprises faces various challenges. Inadequate information about livestock business, transportation and inadequate education on livestock enterprise establishment are the most significant challenges that face LITA graduates who venture in livestock based enterprises.

### 6.1.4 Relationship of factors influencing livestock entrepreneurship in Tanzania

The study found that there are other factors which influence livestock entrepreneurship significantly. These are perception, support, information, marketing, management and leadership factors. More efforts are required in improving significant factors in order to promote entrepreneurship in livestock based enterprises.

## 6.2 Recommendations

### 6.2.1 Recommendations for improvement

The study therefore, draws the attention to both the concerned public and private institutions to make necessary efforts to inspire LITA graduates towards entrepreneurship in livestock sector. The study however suggests the following recommendations;

In order to change the negative perceptions of LITA graduates to engage into livestock enterprises LITA administration through its institutions has to come-up with a cost-effective plan to inspire students on how to establish and manage livestock based enterprises. Negative attitude can be improved strategically by organizing seminars and workshops targeting students of all NTA levels by the department of training, research and consultancy. When students are properly informed they will be inspired with the great potentials found in livestock sector, leading to increase in number of graduates engaged into livestock entrepreneurships.

Analyzing factors that influence respondents' decision to become self-employed in livestock sector and why they choose salaried employment rather than establishing their own livestock enterprises is something of most importance in the sector.

It is important to encourage students to consider new ventures creation and self-employment as a valid graduate career option. Students' Unions, societies, start-up centers, and career services can be active in promoting self-employment as a viable career option. LITA curricula need to be reviewed in order to focus on self-reliance and self-employment. Entrepreneurship in livestock sector should be strongly integrated into the country educational system from lower to higher levels. Schools can play a great part in determining the perceptions of livestock professionals towards agriculture. Institution should plan a more progressive image towards livestock entrepreneurship to emphasize to students the importance of entrepreneurship and how it meets career prospects.

In recognizing the important role of entrepreneurship in economic development, the government of Tanzania is advised to give priority in assisting entrepreneurship programs through establishing special zones with complete infrastructure for raising animals. In this way the contribution of livestock professionals will be their skills, in the final moment graduates and the government will share benefit of the projects. The government is advised to have a condition on LITA graduates to offer free of charge livestock consultancy services to livestock keepers surrounding projects area in order to increase their livestock productivity.

Efforts in teaching and research to identify the needs in the development of entrepreneurship and addressing the barriers to its success should continue. LITA through its campuses is advised to develop attractive programs/courses to draw the attention of

graduate and enhance the development of their carriers. There is also a need to rekindle the entrepreneurial spirit by establishing business centers where LITA graduates may practice livestock skills.

Teaching entrepreneurship skills should be interactive and might include case studies, games, projects, simulations, real-life actions, internships and other hands-on activities. But using active learning methods requires highly skilled trainers and trust in involving participants more in the learning process, fostering innovation and creativity, and learning from success and failure needs to be encouraged.

Stakeholders in the livestock sector should make proper arrangement in provision of special credit loan to LITA graduates as capital in starting as well as in expansion of viable livestock businesses. Government owned banks may provide subsidies, low-interest credit and eliminate collateral conditions to allow livestock entrepreneurs to access funds.

Storage, processing and marketing facilities should be provided in peri-urban areas where major livestock production activities are taking place. These will encourage those who were unwilling while maintaining the interest of those who are currently willing to venture in livestock based enterprises.

The government should continue providing subsidies on livestock inputs in order to promote young livestock entrepreneurs to start business venture with low investment capital. It may take responsibilities in finding markets for enterprise products through unilateral and multilateral trade negotiations. Establishing program to provide technical assistance and business expertise to LITA graduates will help building a new generation

of livestock entrepreneurs. The program will involve changing the vision of LITA graduates towards livestock industry and their perception on the limitations surrounding the sector, since youth focused policies and programmes cannot stand alone.

There is a need to restrict the loss of land due to urban expansion, and more emphasis in livestock intensification on land that remains. This will help graduates from urban areas to access land for enterprises establishment.

The government should minimize or remove all the challenges that livestock based enterprises have been facing. Enterprises should have access to adequate levels of information about market, technology, research etc. that have to be taken into account while introducing and developing livestock entrepreneurship.

### 6.3 Further Research

Research should be extended on what should be done to inspire more graduates to practice livestock skills in entrepreneurships. Livestock entrepreneurship sub-sectors should be shaped in such a way that it facilitates easy of entry for the final year students. A better understanding of how cultures shape entrepreneurial intentions can serve to explain the gender gap in entrepreneurship and possibly identify strategies to reduce it. Furthermore, in depth assessment about the contribution of livestock entrepreneurship sector in Tanzania economy should be done.

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# APPENDICES

## Appendix 1: Research Questionnaire

This questionnaire intends to investigate the factors limiting livestock professionals from starting entrepreneurships in livestock sector. You are kindly requested to complete the questionnaire attached. Participants are guaranteed that the information they provide will be treated with absolute confidentiality and for academic purposes only.

**Instructions**

Please follows the instructions prescribed below as you answer the questions

**Section A: Demographic information**

**1**. Gender

Male [ ] Female [ ]

**2**. Your age is [ ] years

**3**. Marital status

- Single [ ] Married [ ] Divorced [ ] Separated [ ]

**4**. What is your current education qualification?

- Certificate/NTA level 5 [ ] Ordinary diploma/NTA level 6 [ ]
- Bachelor degree [ ] Master degree [ ]

**5**. Choose LITA campus you graduated from *(put a tick in the provided space)*

- Buhuri [ ] Kikulula [ ], Mabuki [ ], Madaba [ ]
- Morogoro [ ] , Mpwapwa [ ] , Temeke [ ], Tengeru [ ]

6. What is your current household size? …….

7. Where do you live? District …… Region ……

8. For how long have you lived there? …….. (Months/Years)

9. What is your current landhold size? …… (in acres/hectares)

10. Are you currently running any livestock enterprise? YES [ ] NO [ ]

11. What motivates you to venture in livestock enterprises?

(Rank the most three by writing 1 for first; 2 for second and 3 for third)

| **Reasons for motivation** | **Ranks** |
|---|---|
| 1. Lack of employment | |
| 2.Llivestock enterprises are more easy to operate/run | |
| 3. Livestock enterprises pays more | |
| 4. Have good knowledge on livestock enterprises | |
| 5. *Others specify*…… | |

12.If your answer on question number 10 is NO, Give reasons

……

**13. Which of the following areas in livestock value chain interests you most?**

| | Extremely interested | Interested | Least interested | Not interested | Extremely not interested |
|---|---|---|---|---|---|
| **1**. Marketing | | | | | |
| **2**.Processing/value addition | | | | | |
| **3**. Livestock farming | | | | | |
| **4**.Inputs(i.e. vets, incubators) | | | | | |
| **5.** Others specify… | | | | | |

**14. Which of the following areas in livestock entrepreneurship interests you most?**

| | Extremely interested | Interested | Least interested | Not interested | Extremely not interested |
|---|---|---|---|---|---|
| **1**. Dairy | | | | | |
| **2**. Poultry | | | | | |
| **3**. Animal clinic | | | | | |
| **4**. Pig fattening | | | | | |
| **5**. Rabbits | | | | | |
| **6**. Beef cattle fattening | | | | | |
| **7.** Processing livestock products | | | | | |
| 8. Selling/trading livestock products | | | | | |
| 9. Advisory services | | | | | |
| 10. Animal feeds/Pasture establishment | | | | | |
| 11.Shoats | | | | | |

**15**. What is your employment status? (Tick)

Employed [ ] Not employed [ ] Self-employed [ ]

**16**. What is your annual income in TZS? (You can give your income either per month, week or day)

**Section B**: **Factors Limiting Entrepreneurships**

**Perceptions of LITA Graduates on Entrepreneurships in Livestock Sector**

**17**. To what extent do the following entrepreneurial perceptions limit you from starting entrepreneurships in livestock sector?

| | Very high extent | Great extent | Moderate | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Perceiving negatively entrepreneurship in livestock | | | | | |
| 2. Perceiving to lack of adequate knowledge on establishing livestock based enterprises | | | | | |
| 3. Perceiving entrepreneurship in livestock sector as economic non-viable | | | | | |
| 4. Perceiving to lack information on livestock entrepreneurship opportunities | | | | | |
| 5. Perceiving entrepreneurship in livestock to have high cost. | | | | | |

**Attitudes of graduates towards self-employment in livestock sector**

**18.** To what extent do the following attitudes of LITA graduates limits entrepreneurships in livestock based enterprises (Key: 1=no extent at all, 2=low extent, 3=moderate extent, 4=great extent, 5=very great extent)

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Having negative views on **2.** entrepreneurship in livestock sector | | | | | |
| **3.** Livestock sector is a rough job consisting of low salaries | | | | | |
| **4.** Livestock sector has no direct future | | | | | |
| 5. Animal production is for illiterates and jobless people. | | | | | |
| 6. I don't like to engage into livestock **7.** entrepreneurships | | | | | |

**Entrepreneurial attitudes**

**19.** To what extent do the following entrepreneurial attitudes of LITA graduates limit them from engagement into whatever enterprises? (Key: 1=no extent at all, 2=low extent, 3=moderate extent, 4=great extent, 5=very great extent

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Unwillingness to take risks | | | | | |
| 2. Individual fear of failure | | | | | |
| 3. Low/no efforts done towards making use 4. of available business opportunities | | | | | |
| 5. Lack of confidence in entrepreneurships | | | | | |
| 6. Having negative attitude towards 7. entrepreneurship | | | | | |

**Support factors**

**20.** To what extent do the following factors support entrepreneurships in livestock based enterprises among LITA Graduates?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Encouragement from fellows | | | | | |
| 2. Availability of relevant information | | | | | |
| 3. Technologies and technical skills | | | | | |
| 4. Entrepreneurial skills | | | | | |
| 5. Existing government policies | | | | | |
| 6. Availability of land | | | | | |
| 7. Business registration procedures | | | | | |
| 8. Taxation system and rates | | | | | |
| 9. Current infrastructure such as roads,<br>10. electricity and water | | | | | |
| 11. Current labour force conditions | | | | | |
| 12. Access to financial and microfinance<br>13. services | | | | | |

**Information factors**

**21.** To what extent does the following information aspects facilitates entrepreneurships in livestock based enterprises?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Accessibility to business information | | | | | |
| 2. Social groups | | | | | |
| 3. Market access | | | | | |
| 4. Location of business | | | | | |
| 5. Electronic information infrastructure | | | | | |
| 6. Current media channels | | | | | |
| 7. Mobile phones | | | | | |

**Marketing factors**

**22.** To what extent do the following marketing factors contribute to livestock entrepreneurships in Tanzania?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Current market facilities and information | | | | | |
| 2. Prices of animal products | | | | | |
| 3. Food imports from other countries | | | | | |
| 4. Current certification status of livestock products | | | | | |
| 5. National marketing policies on livestock production | | | | | |
| 6. Livestock marketing strategies e.g. national milk day | | | | | |
| 7. Globalized market policies | | | | | |

**Financial factors**

**23**. To what extent do the following financial factors limits entrepreneurship in livestock based enterprises?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Access to credit | | | | | |
| 2. Interest rates on lending capital | | | | | |
| 3. Loan approval processing time | | | | | |
| 4. Bond guarantee requirement | | | | | |
| 5. Corruption | | | | | |
| 6. Insurance cover | | | | | |

**Animal health related factors**

**24.** To what extent do the following aspects influence livestock entrepreneurship in Tanzania?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Vaccine availability | | | | | |
| 2. Vaccine effectiveness | | | | | |
| 3. Subsidies veterinary drugs, chemicals and services | | | | | |
| 4. Effectiveness of veterinary drugs, chemicals and services | | | | | |
| 5. Availability of veterinary drugs, chemicals and services | | | | | |
| 6. Costs and prices of veterinary drugs, chemicals and services | | | | | |

**Land factors**

**25.** To what extent do the following land factors limits entrepreneurship in livestock based enterprises?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Access to land | | | | | |
| 2. Land user rights , inheritance or borrowing | | | | | |
| 3. Current land tenure in Tanzania | | | | | |
| 4. Land use plan | | | | | |
| 5. Others specify……. | | | | | |

**Education related factors**

**26.** What education related factors limit you to engage into livestock based enterprises?

(i)……

(ii)……

**Managerial and leadership factors**

**27**. To what extent do the following managerial and leadership factors limits entrepreneurship in livestock industry?

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Leadership | | | | | |
| 2. Conflict management | | | | | |
| 3. Group or consortium formation | | | | | |
| 4. Managerial skills | | | | | |
| 5. Time management skills | | | | | |

**Globalization factors**

**28.** To what extent do the following globalization factors limit entrepreneurship in livestock industry (Key: 1=no extent at all, 2=low extent, 3=moderate extent, 4=great extent, 5=very great extent)

| | Very great extent | Great extent | Moderate extent | Low extent | No extent at all |
|---|---|---|---|---|---|
| 1. Increased human interaction | | | | | |
| 2. Markets of livestock products | | | | | |
| 3. Diversity of livestock products | | | | | |
| 4. Protection of livestock farmers | | | | | |
| 5. Liberalized markets | | | | | |

**Socio cultural factors**

**29.** What social cultural factors limits entrepreneurships in livestock based enterprises?

(i)……

(ii)……...

**30.** What challenges do you face in establishment of livestock-based enterprises?

(i)……

(ii)……

**31.** What do you do in overcoming the above listed challenges?

(i)……

(ii)……

**Appendix 2: Checklists questions for key informants**

This checklist intends to investigate the factors limiting livestock professionals from starting entrepreneurships in livestock sector. You are kindly requested to complete the checklist questions attached. Participants are guaranteed that the information they provide will be treated with absolute confidentiality and for academic purposes only.

**1.** In your views what are the factors which limit LITA graduates to venture into livestock entrepreneurships?

(i)

(ii)

**2.** What should be done to make sure that more LITA graduates are venturing into livestock entrepreneurship?

(i)

(ii)

**3.** Is the (LITA) curriculum comprehensive enough to prepare students for entrepreneurship in livestock sector?

**(a)** If Yes (Give reasons)

(i)

(ii)

**(b**) If No (Give reasons)

(i)

(ii)

**4.** What other education related factors limit LITA graduates to engage into livestock based enterprises?

(i)

(ii)

**Appendix 3: Data set showing variables involved in the study**

2.1 Data set showing variables involved in the study

| L_size | Income | Ent | Per | Attit | Entr | Supp | Infor | Mark | Financ | Vet | Lnd | Mg | Glob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| >10 acres | 4000,000-6000,000 | 1 | 3 | 3 | 3.2 | 3.54545 | 3.42857 | 2.857 | 3.66666 | 3 | 3.5 | 3 | 3.8 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 3 | 3.6 | 3.72727 | 3.28571 | 2.8571 | 2.66666 | 3.66666 | 3 | 3 | 3 |
| 0.25-1 acre | 4000,000-6000,000 | 1 | 3.4 | 3 | 2.6 | 3.45454 | 2.85714 | 2.7142 | 2.66666 | 3.83333 | 3.5 | 3 | 3 |
| 0 | <4000,000 | 0 | 3.6 | 3 | 3 | 3.72727 | 3 | 3.1428 | 2.83333 | 3.16666 | 3.25 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3 | 3 | 3 | 3.72727 | 3.28571 | 3.2857 | 2.66666 | 4.16666 | 3 | 3.4 | 2 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 2 | 3.2 | 3 | 3.71428 | 3.2857 | 3 | 3.5 | 4 | 3.8 | 3.8 |
| 0.25-1 acre | 4000,000-6000,000 | 1 | 3.6 | 3 | 3 | 3.63636 | 2.85714 | 2.8571 | 3 | 3.16666 | 3 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 0 | 3.6 | 3 | 3 | 4.18181 | 4 | 3.5714 | 3.66666 | 4.16666 | 4.25 | 3.2 | 4.2 |
| 0 | <4000,000 | 1 | 1.8 | 1.6 | 4.2 | 3.90909 | 4.28571 | 3.8571 | 4.16666 | 4.33333 | 4.75 | 4 | 2.8 |
| 0.25-1 acre | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 2.6 | 1.8 | 3 | 3.36363 | 3.42857 | 3.7142 | 3.33333 | 3.66666 | 4 | 3.6 | 3.6 |
| 0 | 4000,000-6000,000 | 1 | 1.6 | 1.6 | 1.2 | 3 | 4.57142 | 4.1428 | 3 | 4.66666 | 3 | 3.4 | 3.6 |
| 0 | <4000,000 | 1 | 3.2 | 3.6 | 3 | 4.45454 | 3 | 3.1428 | 3.33333 | 4.83333 | 3.5 | 3 | 3.6 |
| 0 | 4000,000-6000,000 | 1 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| >10 acres | >10,000,00 | 0 | 3.4 | 1.6 | 4 | 3.81818 | 3.57142 | 2.7142 | 3.16666 | 3.66666 | 3 | 3.2 | 2.6 |
| 0 | <4000,000 | 1 | 3.8 | 1.4 | 4.2 | 3.90909 | 4.42857 | 2.7142 | 3.33333 | 4.66666 | 3.5 | 4.2 | 3.2 |
| 300 | >10,000,00 | 1 | 3.2 | 2 | 3.6 | 3 | 3.28571 | 4.1428 | 4.16666 | 4.5 | 4.25 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 2.4 | 1.6 | 3.6 | 2.81818 | 3.57142 | 2.1428 | 4.33333 | 4.16666 | 4.25 | 4.2 | 3.6 |
| 0.25-1 acre | <4000,000 | 0 | 3.4 | 2.4 | 3.2 | 4 | 3.57142 | 2.7142 | 3.16666 | 4.33333 | 4 | 2.2 | 4.2 |
| 0.25-1 acre | <4000,000 | 1 | 3.4 | 2.4 | 4.4 | 3.45454 | 3.42857 | 3.4285 | 4 | 3.16666 | 3.75 | 4.2 | 4.4 |
| 0.25-1 acre | 4000,000-6000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6000,000 | 0 | 3.2 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.66666 | 4 | 4.2 | 3.6 |
| 1.5-2 acre | 6000,000-10,000,000 | 0 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |

| L_size | Income | Ent | Per | Attit | Entr | Supp | Infor | Mark | Financ | Vet | Lnd | Mg | Glob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| >10 acres | 6000,000-10,000,000 | 1 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.142 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 2.6 | 1.8 | 3 | 3.36363 | 3.42857 | 3.7142 | 3.33333 | 3.66666 | 4 | 3.6 | 3.6 |
| 6-10 acres | 4000,000-6000,000 | 0 | 1.6 | 1.6 | 1.2 | 3 | 4.57142 | 4.1428 | 3 | 4.66666 | 3 | 3.4 | 3.6 |
| 2.1-5 acre | <4000,000 | 1 | 3.2 | 3.6 | 3 | 4.45454 | 3 | 3.1428 | 3.33333 | 4.83333 | 3.5 | 3 | 3.6 |
| 0 | 4000,000-6,000,000 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| >10 acres | >10,000,00 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| 1.5-2 acre | 4000,000-6,000,000 | 1 | 3 | 1.4 | 4.2 | 3.90909 | 4.42857 | 2.7142 | 3.33333 | 4.66666 | 3.5 | 4.2 | 3.2 |
| 0 | <4000,000 | 0 | 3 | 3.2 | 2.4 | 3.90909 | 3.28571 | 4.1428 | 4.16666 | 4.5 | 4.25 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 2.4 | 1.6 | 3.6 | 2.81818 | 3.57142 | 2.1428 | 4.33333 | 4.16666 | 4.25 | 4.2 | 3.6 |
| 0.25-1 acre | <4000,000 | 0 | 3.4 | 2.4 | 3.2 | 4 | 3.57142 | 2.7142 | 3.16666 | 4.33333 | 4 | 2.2 | 4.2 |
| 0.25-1 acre | <4000,000 | 1 | 3.4 | 2.4 | 4.4 | 3.45454 | 3.42857 | 3.4285 | 4 | 3.16666 | 3.75 | 4.2 | 4.4 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6,000,000 | 0 | 3.2 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.66666 | 4 | 4.2 | 3.6 |
| >10 acres | 4000,000-6,000,000 | 1 | 3 | 3 | 3.2 | 3.54545 | 3.42857 | 2.8571 | 3.66666 | 3 | 3.5 | 3 | 3.8 |
| 0.25-1 acr | <4000,000 | 1 | 3 | 3 | 3.6 | 3.72727 | 3.28571 | 2.8571 | 2.66666 | 3.66666 | 3 | 3 | 3 |
| 0.25-1 acr | 4000,000-6,000,000 | 1 | 3.4 | 3 | 2.6 | 3.45454 | 2.85714 | 2.71428 | 2.66666 | 3.83333 | 3.5 | 3 | 3 |
| 0 | <4000,000 | 0 | 3.6 | 3 | 3 | 3.72727 | 3 | 3.1428 | 2.83333 | 3.16666 | 3.25 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3 | 3 | 3 | 3.72727 | 3.28571 | 3.2857 | 2.66666 | 4.16666 | 3 | 3.4 | 2 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 2 | 3.2 | 3 | 3.71428 | 3.2857 | 3 | 3.5 | 4 | 3.8 | 3.8 |
| 0.25-1 acr | 4000,000-6,000,000 | 1 | 3.6 | 3 | 3 | 3.63636 | 2.85714 | 2.8571 | 3 | 3.16666 | 3 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 0 | 3.6 | 3 | 3 | 4.18181 | 4 | 3.5714 | 3.66666 | 4.16666 | 4.25 | 3.2 | 4.2 |
| 0 | <4000,000 | 1 | 1.8 | 1.6 | 4.2 | 3.90909 | 4.28571 | 3.8571 | 4.16666 | 4.33333 | 4.75 | 4 | 2.8 |
| 0.25-1 acre | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| >10 acres | 4000,000-6,000,000 | 1 | 3 | 3 | 3.2 | 3.54545 | 3.42857 | 2.8571 | 3.66666 | 3 | 3.5 | 3 | 3.8 |

| L_size | Income | Ent | Per | Attit | Entr | Supp | Infor | Mark | Financ | Vet | Lnd | Mg | Glob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.25-1 acre | <4000,000 | 1 | 3 | 3 | 3.6 | 3.72727 | 3.28571 | 2.8571 | 2.66666 | 3.66666 | 3 | 3 | 3 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.4 | 3 | 2.6 | 3.45454 | 2.85714 | 2.7142 | 2.66666 | 3.83333 | 3.5 | 3 | 3 |
| 0 | <4000,000 | 0 | 3.6 | 3 | 3 | 3.72727 | 3 | 3.1428 | 2.83333 | 3.16666 | 3.25 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3 | 3 | 3 | 3.72727 | 3.28571 | 3.2857 | 2.66666 | 4.16666 | 3 | 3.4 | 2 |
| 0.25-1 acr | <4000,000 | 1 | 3 | 2 | 3.2 | 3 | 3.71428 | 3.2857 | 3 | 3.5 | 4 | 3.8 | 3.8 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.6 | 3 | 3 | 3.63636 | 2.85714 | 2.8571 | 3 | 3.16666 | 3 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 0 | 3.6 | 3 | 3 | 4.18181 | 4 | 3.5714 | 3.66666 | 4.16666 | 4.25 | 3.2 | 4.2 |
| 0 | <4000,000 | 1 | 1.8 | 1.6 | 4.2 | 3.90909 | 4.28571 | 3.8571 | 4.16666 | 4.33333 | 4.75 | 4 | 2.8 |
| 0.25-1 acre | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 2.6 | 1.8 | 3 | 3.36363 | 3.42857 | 3.7142 | 3.33333 | 3.66666 | 4 | 3.6 | 3.6 |
| 0 | 4000,000-6,000,000 | 1 | 1.6 | 1.6 | 1.2 | 3 | 4.57142 | 4.1428 | 3 | 4.66666 | 3 | 3.4 | 3.6 |
| 0 | <4000,000 | 1 | 3.2 | 3.6 | 3 | 4.45454 | 3 | 3.1428 | 3.33333 | 4.83333 | 3.5 | 3 | 3.6 |
| 0 | 4000,000-6,000,000 | 1 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| >10 acres | >10,000,00 | 0 | 3.6 | 2 | 4.2 | 3.63636 | 4.28571 | 3.5714 | 2.66666 | 4 | 4.5 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 3.8 | 1.4 | 4.2 | 3.90909 | 4.42857 | 2.7142 | 3.33333 | 4.66666 | 3.5 | 4.2 | 3.2 |
| 300 | >10,000,00 | 1 | 3.2 | 2 | 3.6 | 3 | 3.28571 | 4.1428 | 4.16666 | 4.5 | 4.25 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 2.4 | 1.6 | 3.6 | 2.81818 | 3.57142 | 2.1428 | 4.33333 | 4.16666 | 4.25 | 4.2 | 3.6 |
| 0.25-1 acre | <4000,000 | 0 | 3.4 | 2.4 | 3.2 | 4 | 3.57142 | 2.7142 | 3.16666 | 4.33333 | 4 | 2.2 | 4.2 |
| 0.25-1 acre | <4000,000 | 1 | 3.4 | 2.4 | 4.4 | 3.45454 | 3.4285 | 3.4285 | 4 | 3.16666 | 3.75 | 4.2 | 4.4 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6,000,000 | 0 | 3.2 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.66666 | 4 | 4.2 | 3.6 |
| 1.5-2 acre | 6000,000-10,000,000 | 1 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |
| >10 acres | 6000,000-10,000,000 | 1 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 2.6 | 1.8 | 3 | 3.36363 | 3.42857 | 3.7142 | 3.33333 | 3.66666 | 4 | 3.6 | 3.6 |
| 6-10 acres | 4000,000- | 0 | 1.6 | 1.6 | 1.2 | 3 | 4.57142 | 4.1428 | 3 | 4.66666 | 3 | 3.4 | 3.6 |

| L_size | Income | Ent | Per | Attit | Entr | Supp | Infor | Mark | Financ | Vet | Lnd | Mg | Glob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6,000,000 | | | | | | | | | | | | |
| 2.1-5 acre | <4000,000 | 1 | 3.2 | 3.6 | 3 | 4.45454 | 3 | 3.1428 | 3.33333 | 4.83333 | 3.5 | 3 | 3.6 |
| 1.5-2 acre | 4000,000-6,000,000 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| >10 acres | >10,000,00 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| 1.5-2 acre | 4000,000-6,000,000 | 1 | 3 | 1.4 | 4.2 | 3.90909 | 4.42857 | 2.7142 | 3.33333 | 4.66666 | 3.5 | 4.2 | 3.2 |
| 0 | <4000,000 | 0 | 3 | 3.2 | 2.4 | 3.90909 | 3.28571 | 4.1428 | 4.16666 | 4.5 | 4.25 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 2.4 | 1.6 | 3.6 | 2.81818 | 3.57142 | 2.1428 | 4.33333 | 4.16666 | 4.25 | 4.2 | 3.6 |
| 0.25-1 acre | <4000,000 | 0 | 3.4 | 2.4 | 3.2 | 4 | 3.57142 | 2.7142 | 3.16666 | 4.33333 | 4 | 2.2 | 4.2 |
| 0.25-1 acre | <4000,000 | 1 | 3.4 | 2.4 | 4.4 | 3.4545 | 3.42857 | 3.4285 | 4 | 3.16666 | 3.75 | 4.2 | 4.4 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6,000,000 | 0 | 3.2 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.66666 | 4 | 4.2 | 3.6 |
| >10 acres | 4000,000-6,000,000 | 1 | 3 | 3 | 3.2 | 3.54545 | 3.42857 | 2.8571 | 3.66666 | 3 | 3.5 | 3 | 3.8 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 3 | 3.6 | 3.72727 | 3.28571 | 2.8571 | 2.66666 | 3.66666 | 3 | 3 | 3 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.6 | 3 | 2.6 | 3.45454 | 2.85714 | 2.7142 | 2.66666 | 3.83333 | 3.5 | 3 | 3 |
| 0 | <4000,000 | 0 | 3.6 | 3 | 3 | 3.72727 | 3 | 3.1428 | 2.83333 | 3.16666 | 3.25 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 1 | 3 | 3 | 3 | 3.72727 | 3.28571 | 3.2857 | 2.66666 | 4.16666 | 3 | 3.4 | 2 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 2 | 3.2 | 3 | 3.71428 | 3.2857 | 3 | 3.5 | 4 | 3.8 | 3.8 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.6 | 3 | 3 | 3.63636 | 2.85714 | 2.8571 | 3 | 3.16666 | 3 | 3 | 3 |
| 2.1-5 acre | <4000,000 | 0 | 3.8 | 3 | 3 | 4.18181 | 4 | 3.5714 | 3.66666 | 4.16666 | 4.25 | 3.2 | 4.2 |
| 0 | <4000,000 | 1 | 1.8 | 1.6 | 4.2 | 3.90909 | 4.28571 | 3.8571 | 4.16666 | 4.33333 | 4.75 | 4 | 2.8 |
| 0.25-1 acr | <4000,000 | 1 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 0.25-1 acr | 4000,000-6,000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6,000,000 | 0 | 3.6 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.6666 | 4 | 4.2 | 3.6 |
| 1.5-2 acre | 6000,000-10,000,000 | 0 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |
| >10 acres | 6000,000- | 1 | 2 | 3.6 | 4.4 | 4.36363 | 3.71428 | 3.5714 | 3 | 4.33333 | 3.5 | 3.4 | 3 |

| L_size | Income | Ent | Per | Attit | Entr | Supp | Infor | Mark | Financ | Vet | Lnd | Mg | Glob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10,000,000 | | | | | | | | | | | | |
| 0 | 6000,000-10,000,000 | 0 | 3.2 | 3 | 3 | 3.90909 | 3.28571 | 3.1428 | 2.83333 | 3.33333 | 3.5 | 3 | 3 |
| 0 | 4000,000-6,000,000 | 0 | 3 | 1.8 | 3 | 3.36363 | 3.42857 | 3.7142 | 3.33333 | 3.66666 | 4 | 3.6 | 3.6 |
| 6-10 acres | 4000,000-6 | 0 | 1.6 | 1.6 | 1.2 | 3 | 4.57142 | 4.1428 | 3 | 4.66666 | 3 | 3.4 | 3.6 |
| 2.1-5 acre | <4000,000 | 1 | 3.8 | 3.6 | 3 | 4.45454 | 3 | 3.1428 | 3.33333 | 4.83333 | 3.5 | 3 | 3.6 |
| 0 | 4000,000-6,000,000 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| >10 acres | >10,000,00 | 0 | 2.4 | 1.8 | 4 | 4.09090 | 4.71428 | 3.4285 | 4.33333 | 3.83333 | 3.75 | 4.6 | 3.8 |
| 1.5-2 acre | 4000,000-6,000,000 | 1 | 3 | 1.4 | 4.2 | 3.90909 | 4.42857 | 2.7142 | 3.33333 | 4.66666 | 3.5 | 4.2 | 3.2 |
| 0 | <4000,000 | 0 | 3 | 3.2 | 2.4 | 3.90909 | 3.28571 | 4.1428 | 4.16666 | 4.5 | 4.25 | 3.2 | 3.8 |
| 0 | <4000,000 | 1 | 2.4 | 1.6 | 3.6 | 2.81818 | 3.57142 | 2.1428 | 4.33333 | 4.16666 | 4.25 | 4.2 | 3.6 |
| 0.25-1 acre | <4000,000 | 0 | 3.4 | 2.4 | 3.2 | 4 | 3.57142 | 2.7142 | 3.16666 | 4.33333 | 4 | 2.2 | 4.2 |
| 0.25-1 acre | <4000,000 | 1 | 3.4 | 2.4 | 4.4 | 3.45454 | 3.42857 | 3.4285 | 4 | 3.16666 | 3.75 | 4.2 | 4.4 |
| 0.25-1 acre | 4000,000-6,000,000 | 1 | 3.4 | 2 | 4.2 | 2 | 4 | 3.8571 | 3.5 | 3 | 3.5 | 4.2 | 1.6 |
| 0 | 4000,000-6,000,000 | 0 | 3.2 | 2.4 | 4 | 4.45454 | 4.14285 | 4 | 3.16666 | 4.66666 | 4 | 4.2 | 3.6 |
| >10 acres | 4000,000-6,000,000 | 1 | 3 | 3 | 3.2 | 3.54545 | 3.42857 | 2.8571 | 3.66666 | 3 | 3.5 | 3 | 3.8 |
| 0.25-1 acre | <4000,000 | 1 | 3 | 3 | 3.6 | 3.72727 | 3.28571 | 2.8571 | 2.66666 | 3.66666 | 3 | 3 | 3 |
| 0.25-1 acre | 4000,000-6,000,000 | 0 | 3.4 | 3 | 3.8 | 3.81818 | 3.14285 | 2.7142 | 2.66666 | 3.83333 | 3.5 | 3 | 3 |

## Appendix 4: Research permit

Our Ref. No. STC/4/147/Part 11/33 10th April, 2019

**Chief Executive Officer**
Livestock Training Agency (LITA)
P.O.BOX 9152

Dar Es Salaam

Dear Sir/Madam,

RE: REQUEST FOR PRIMARY DATA COLLECTION

Reference is made to the above-captioned matter.

Eastern Africa Statistical Training Centre (EASTC) is a government institution, which offers training in Official Statistics to students from English-speaking African countries. It offers courses that lead to getting a Certificate in Data Collection, Diploma in Statistics, Bachelor Degree in Official Statistics, Bachelor of Business Statistics and Economics, Bachelor of Data Science, Bachelor of Agricultural Statistics and Economics, Master's Degree in Official Statistics, and Master's Degree in Agricultural Statistics. It is located on Observation Hill, Changanyikeni area in Dar es Salaam.

MR. **ALPHONCE LUCAS CHASSAMA** (Registration number: 1515010051678 and mobile phone number: +255779346591) is a second-year Bona Fide student pursuing a Master's Degree in Agricultural Statistics at EASTC. As partial fulfillment for his course, he has to do research on a topic of his choice that will require the use of primary data. The research topic is "***FACTORS LIMITING LIVESTOCK BASED ENTREPRENEURSHIPS IN TANZANIA, A CASE OF LIVESTOCK TRAINING AGENCY (LITA) GRADUATES"***.

This institution requests that you avail the named student with pertinent data from your database to enable him complete his research. The assignment of data collection is scheduled in only four weeks starting from 16th April to 16th May 2019. The results of this research will be communicated to you for reference purposes.

To assure you of adhering to the intended use of the data, the named student will have to sign in duplicate the DATA CONFIDENTIALITY STATEMENT attached. Your office will retain one copy.

Your assistance in this matter will be highly appreciated.

Sincerely

*N. Ndifwa.*

Mr. Nelson Ndifwa