
Assessing the Availability of School-Based Income-Generating Activities in the Public Secondary Schools in Kilimanjaro Region, Tanzania

Lucretia Kilire Njau, Evans Ogoti, Eugene Lyamtane
Mwenge Catholic University, P.O. Box 1226, Moshi – Tanzania

Citation: Lucretia Kilire Njau, Evans Ogoti, Eugene Lyamtane (2022) Assessing the Availability of School-Based Income-Generating Activities in the Public Secondary Schools in Kilimanjaro Region, Tanzania, *European Journal of Educational and Development Psychology*, Vol.10, No.2, pp.1-20

ABSTRACT: *This study assessed the availability of school-based income-generating activities (IGAs) in public secondary schools in Kilimanjaro region, Tanzania. Guided by Resource Dependency Theory, the study adopted a convergent design under a mixed research approach for data collection and analysis. Probability and non-probability sampling techniques were employed to obtain 36 Heads of Schools (HOSs), 360 Teachers, 432 Students, and 6 District Education Officers. The quantitative data were analyzed descriptively (frequency and percentage) and inferential statistics using the ANOVA statistical test and presented in form of tables. Qualitative data were coded to translate the responses into specific categories and themes. The study found that, school shops as the most practiced school-based IGAs in public secondary schools. The study also revealed that cafeteria and crop cultivation were moderately practiced IGAs. Moreover, the study also depicted that animal keeping, poultry keeping, fish farming, vegetable gardening, tree nursery, hiring of school vehicle, and renting school facilities ranked as the least practiced IGAs. Through ANOVA test, the study found that there was no significant difference in the mean response of HOSs, teachers, and students on the availability of income-generating activities in public secondary schools in Kilimanjaro region. The study concluded that the public secondary schools do not practice IGAs such as animal keeping, poultry keeping, fish farming, vegetable garden, tree nursery, hiring of school vehicles and renting school facilities. This could be due to limited land space and inadequate motivation for benefits accrue from these projects. Therefore, the study recommends that District Education Officers, Heads of Schools, teachers, and parents, should make sure that all public secondary schools are fully engaged in school-based income-generating activities to supplement the school's financial requirements. The Ministry of Education, Science and Technology should develop a clear directive policy based on the establishment and expansion of IGAs in public secondary schools in Tanzania.*

KEYWORDS: availability of IGAs, Income generating activities, public secondary schools

INTRODUCTION

Education is a process that enables the learner to acquire skills and knowledge through instructions and other practical procedures of how to master the environment for survival (Legare, 2019). Moreover, education helps and guides individuals to transform from one class to another by empowering them to grow and develop in science and technology relevant to 21st centuries skills and competences (Amos et al., 2022). Education goes beyond what is taking place within the four walls of the classroom. For instance, Muller and Kerbow (2018) maintained

that children get education from their experiences outside the school and from those within their school environment.

Modern nations have developed education as a social institution to help maintain and sustain a well-functioning society through which teaching and learning are essential to both individuals and the community (Kalogiannidis et al., 2022). According to Rieckmann (2018) education is vital for individuals because it equips them with the necessary knowledge, skills, abilities, attitudes and values to adequately function in society and contribute to develop a diverse lifestyle. Similarly, education is imperative for the organization because it allows the values, languages, symbols, and development of one generation to be inherited by the next generation (Rieckmann, 2018). This infers that, education is essential to an individual and society at large which is shared through teaching and learning process aiming to transfer societal cultural and skills from one generation to another.

In additionally, Menezes and Colombo (2018) and Misirli and Ergulec (2021) emphasized that, education delivered in public secondary schools, besides providing knowledge, the students need to acquire skills while being involved in activities outside the classroom related to what they learn at school. Audu (2022) further described that, basic education is intended to produce learners with knowledge, skills, attitudes, and values to manipulate their environment and become self-reliant economically and socially. For instance, In Ukraine, the study by Kovalenko and Popovych (2018) pointed out that for the institutions to be financially sound, they need to stimulate the implementation of various revenue-generating activities to motivate higher education institutions to form a national innovation system by providing research institutions with the status of research ones. Furthermore, the study concluded that education institutions would not be able to carry out their mission without sufficient funds. These findings posed a challenge to the higher institutions in brainstorming suitable income-generating activities to generate income for the institutions' financial sustainability. If this happens to the developed countries, public secondary schools in developing countries need to adopt the idea for economic survival.

Shaturaev and Bekimbetova (2021) study on the impoverished condition in education and low academic performance in the public system of Indonesia and Uzbekistan revealed that public education is afflicted by several issues that affect the students' academic achievements; which remain low. The challenges are improper infrastructure, government expenditure on education, low salary, and limited quota in pedagogical education institutions, leading to an expected shortage of well-trained teachers in rural areas. The government needs supplement support to address these matters threatening basic education quality under the tuition fee-free education policy (Zhang & Bray, 2020; Shukia, 2020 & Bray, 2021). The schools need to have an alternative by introducing school-based income-generating activities to generate internal income to supplement government grants to the little school needs.

A study by Lyanga and Chen (2020) in Tanzania revealed that capitation grants sent to other secondary schools were insufficient to meet all school needs, such as providing mid-day meals for day students, ensuring the security of school properties, and hiring temporary teachers for science subjects. This phenomenon affirms that the school receives inadequate funds to clear some expenses. In addition, students from low-income families and marginalized groups still face financial barriers because their parents cannot afford to pay for transport, uniform, exercise books, and notices books, pens, and pencils (Simpson et al., 2021 and Shemwelekwu &

Kahangwa, 2022). Consequently, the school's management should develop a strategic plan to solve all issues confronting the school due to inadequate funds. The immediate solution is for the school to find alternative sources of income to solve the public secondary schools' financial situation, such as establishing income-generating activities suitable to their environment.

According to Noah et al. (2021), income-generating activities create opportunities for communities to productively use locally available resources to develop minor state-dependent, more self-reliant households and communities able to care for themselves. Income-generating activities focus on productively using locally available resources to benefit the community (Kaukumangera, 2021). In addition, income-generating activities provide additional benefits that include: contributing to reducing poverty, improving the well-being of the communities, empowerment, self-reliance, and community development. Nemes and Fabian (2019) in Tanzania revealed that majority (83%) of pupils who responded to the study were engaged in the IGAs mainly in farming activities to earn money for their basic needs such as school uniforms and other school essentials. This indicates the importance of establishing and implementing IGAs in school premises as it supports the students' elementary needs. Consequently, there is a justification for public secondary schools in Kilimanjaro to establish IGAs to generate income to support students' basic teaching and learning materials they are missing from their parents and government grants. Despite the government's efforts to intervene and support the financing of public secondary schools in the country; the problem of funding still exists in the public secondary schools in our country. It is on the basis of this that the current study assessed the availability of school-based income-generating activities in the public secondary school in Kilimanjaro region.

Statement of the Problem

Although the government finances public secondary schools in the country, public secondary schools in Tanzania have a financial crisis. The schools need to have internal resources mobilization subsidized by government grants. Public secondary schools need to establish school-based income-generating activities (IGAs) to support the government budget and boost school financial capacity. According to Education for Self-Reliance (ESR) policy of 1967, the Tanzanian Education and Training Policy (ETP) 1995, and the Education and Training Policy (ETP) 2014 schools are directed to establish IGAs as sources of income and provide entrepreneurship training skills to the learners. However, the persistence of financial crisis in public secondary schools on the operational costs is an indication that schools have not invested enough in the IGAs. There is an outcry in public secondary schools in Tanzania about the fiscal deficit, which hinders schools from acquiring basic teaching and learning resources efficiently, henceforth creating chaos, such as lower education quality (Kapinga, 2017). In addition, inadequate instructional materials limit teachers' creativity (Mwalwajo, 2020). If the schools could have IGAs, they could generate funds that could internally solve some of these crises. Various scholars have written widely on the centrality of IGAs for the survival of an educational institution. Amos and Koda (2018) did a study on the IGAs in private secondary schools while Lashway (2019) dealt with IGAs in public primary schools. Moreover, Maeda (2019) focused on the IGAs in the village area and Buxay (2013), on the assessment of challenges facing higher learning institutions in IGAs. In the reviewed studies, none of the studies focused mainly on assessing the availability of school-based IGAs in public secondary schools in Kilimanjaro region. Therefore, the current study assessed the availability of school-based income-generating activities in the public secondary schools in Kilimanjaro region, Tanzania to fill the gap.

Research Question and Hypothesis

RQ: What types of school-based income generation activities are available in public secondary school in Kilimanjaro region?

Ha: There is a significant difference in the mean responses of school heads, teachers, and students on the availability of IGAs.

Theoretical Framework

The study was fortified by Resources Dependency Theory (RDT). The theory has its roots in Emerson's classic "Power Dependency Relations" of 1962 and Pfeffer, and Salancik's "The External Control of Organizations" of 1978. The theory provides valuable guidelines for managers who want to understand considerations and consequences relevant to different types of inter-organizational patterning. The approach aims to understand how internal and external resources affect the effectiveness and efficiency of an organization (Malatesta & Smith, 2014). This theory rests on three principles. Foremost, an organization needs resources to survive and pursue its goals. Secondly, an organization can obtain resources from its environment or, more simply, from other organizations to support its actions and ambitions. Finally, too much dependence on external resources may restrict the achievement of organizational objectives. Therefore, organizations possessing necessary resources are in power, whereas an organization's dependency on others for resources is vulnerable to control.

The resource dependence theory is derived from the fundraising strategy. These theory studies indicated the external resources of organizations or environmental factors affect the behavior of organizations. The theory, therefore, assumes that organizations depend on resources that ultimately originate from an organization's environment (Tachizawa & Yew-Wong, 2014). Resource Dependency Theory confers that, even though all public secondary schools received government funds, the funds are not sufficient and therefore, must depend on internal resources to support their operations and aspirations (Pfeffer and Salancik, 1972). This indicates that deficiency in resources is perceived as a key force in driving public secondary schools in Kilimanjaro region to initiate income-generating activities in order to reduce uncertainty and risks of bankruptcy.

However, the RDT was judgmentally criticized based on the objection profusely made by Donaldson (1996), an advocate of the Contingency Theory, which focuses on the prominence of the power structures and processes and thus the resulting ignorance about economics, costs, and efficiency factors to explain an organization's behavior. Clegg and Rura-Polley (1998) criticize the RDT for being based wrongly on a narrow concept of power over controlling objective resources. When public secondary schools create tendency of depending on external resources it may create uncertainty to accomplish the schools needs when the external resources are delayed. An organization such as a school lacking adequate resources leading to a compromise the provision of quality educational services. Therefore, current study opted for Resources Dependence Theory to explain how the internal and external resources affects an organization's operational behavior for financial sustainability of the school.

REVIEW OF RELATED LITERATURE

The review of related literature on examining and exploring the availability of school-based income-generating activities intends to see what scholars have discussed on the matter under discussion at the global and local levels. Vaiciukevičiūtė et al. (2019) conducted a study in

Lithuania on the impact of the economy on public education institutions. The study aimed to determine how education institutions can substantially impact a country's economy. The study findings revealed that despite the public institutions getting financial support from the government as a primary source of their income, they still need an effort to earn money to supplement the government grants because it is not sufficient to run the institutions. Public institutions in Lithuania vary widely in their principal income sources. They earn extra income from research funding, contracts, and collaborations with business and tuition fees. The study shows that education institutions positively impact the country's economy. This study concentrated on academic and large-scale IGAs that have the highest academic profile and large investment for their operation and neglected the contribution of small-scale IGAs to the institutions. In divergence, the current research assessed the contribution of small-scale IGAs and their association with school financial sustainability in public secondary schools. The former study paid no attention to the availability of small sale IGAs such as agricultural-based activities. The study by Vaiciukevičiūtė et al. (2019) also found out that IGAs have an impact on a country's economy, which is dissimilarity from IGAs targeted by the current study that aimed to supplement public secondary schools' government grants and capitation.

Panigrahi (2019) conducted a study in India on the financing the education sector and found out that government-support funds are insufficient to finance education and thus, education institutions suffocate from financial constraints. The study recommended that alternative sources of income generation for the educational institutions be applied; these include public-private partnerships, research and project collaboration activities, intellectual property rights, philanthropic and alumni contributions and foreign school participation. The study also suggested students and teachers exchanges, corporate sector participation in education, renting out infrastructure, outsourcing some of the day-to-day activities like security and mess services, charging for usage of institutions resources like water, electricity, health services; project and consultancy activities, investment in the bank deposits. This study was conducted in a country with educational institutions comprised of a wide range of income generation activities than public secondary schools in Tanzania. The current study examined the availability of school-based IGAs and how they influence school financial sustainability using multiple sources of data collection from education stakeholders, namely HOSs, teachers, students and DEOs.

Filson and Afful-Arthur (2021) conducted a study on funds generation from internal activities of an academic library based on the Resource-Based View theory in Ghana. The study employed a mixed research design, purposively sampling to select the respondents. Data collection instruments were an interview guide, questionnaires, and documentary checks. The findings of the study revealed that four sources of IGAs are library academic facility users' fees, technical support services, proposal writing services, and celebration of library week. The study provided additional information to the current research that public secondary schools allow the private examination candidates to use the school library and laboratory and pay fees. Similarly, a quantitative study by Nyeh and Kpee (2019) in Nigeria reported that school income-generating activities include NGOs, school shops, fundraising, renting facilities, school alumni, and handcrafts as the primary sources of IGAs. Findings from studies conducted in Ghana and Nigeria revealed the income-generating activities; however, by considering technological and educational systems between Tanzania and Ghana as well as Nigeria. The findings may only partially be generalized to the Tanzania context and particularly in Kilimanjaro. Therefore, there is still a need for a study to be conducted in Tanzania and particularly in Kilimanjaro region, to

investigate school-based IGAs that are likely to be agricultural-based, commercial, and services-related activities that are highly supported by Chagga and Pare cultural values.

A study by Obayelu et al. (2019) in Nigeria on the effect of agripreneurship on employment and IGAs in cattle fattening business found that there is unemployment among youth, which creates a wide range of uncertainty in the society and leaves the schooling system questionable. The introduction of the cow-fattening project is among the categories of IGAs that employ many young people in the country. The study results indicate that empowering and training youth at the school level on varieties of IGAs ranging from agriculture, animal rearing, and business will solve, to significant extent, unemployment among youths after the school cycles in developing countries. The study indicated training of the youth without necessarily demonstrating how schools are equipped with material and technical resources for the coaching. However, the study involved only one type of IGAs that could probably be taught in schools to improve employability skills while neglecting multisector IGAs that could expand the scope of coaching youths. The findings incited the current study to examine the availability and practicability of varieties of IGAs found in public secondary schools and their association with school financial sustainability.

Additionally, Famade et al. (2015) in Nigeria carried out a study that examined the significance of alternative sources of funds for the survival of educational institutions. The study recognized the contribution of adequate funding and other factors such as proper planning and effective administration to the success of any educational system. The study identified internal sources of funds for sustaining an individual education institution based on the establishment of avenues yielding income-generating activities such as bookshops, printing press, catering services, and consultancy services. Similarly, a study conducted by Afodu et al. (2019) in Nigeria found that schools and tertiary institutions engaged in IGAs such as livestock keeping, crop, and fish production as their source of income in the organization boost their internal income. These findings indicate that most education institutions like schools and textile colleges depend on IGAs funds to provide for services and sustenance. The two study findings indicated that secondary schools and higher education institutions engaged in the IGAs have higher chances of strengthening internal financial sustainability and providing quality services to the clients. The findings reported from Nigeria can be generalized in the Tanzanian context despite the fact that their differences in geographical location, cultural, economic status and political systems. Therefore, current study examined the possibility of the public secondary schools' involvement in the school-based IGAs to raise extra income to supplement the government grants, which are not sufficient for the school's needs and make the school financially sustainable.

The study in Kenya by Nyamwega (2016) on the evaluation of income-generating projects in public secondary schools intended to assist schools in efficiently using the available resources and opportunities to raise supplementary finances for funding the school programs. The study identified the most available and practicable revenue-generating activities, including the following: school buses, farms, hire of the classroom for use by churches, and other social activities like ceremonies or crusades, horticulture where some schools raise vegetables and fruits for help, within and outside the school, clubs and societies. These findings were in line with the study by Mulusa et al. (2021) from the private sector that churches in Kenya have established IGAs to sustain the church running needs for their financial sustainability. The available and practical IGAs include livestock breeding farms, shops, veterinary shops, a canteen and a lorry for transport services conference centre. This indicates that public and private institutions in

Kenya are struggling to sustain themselves economically by being involved in a variety of IGAs for survival and providing services to the targeted people. These studies prompted the researcher to establish the extent to which available and practicable IGAs in public secondary schools may contribute to financial sustainability in Kilimanjaro region.

Karie and Mwaura (2019) conducted a study in Kenya on the effects of IGAs on physical infrastructural development among public high schools in the Molo sub-county of Nakuru county. The study findings revealed that the schools adopted the following categories of IGAs: school farming, dairy and poultry farming, and bus hiring to individuals or churches. The findings show that practicable IGAs have a statistically significant relationship with physical infrastructural development among public high schools in Mollo sub-County. The findings of the study were confirmed to only dairy and poultry farming as well as the hiring of school buses, as opposed to the current study, which was open to the availability of multiple school-IGAs in public secondary schools. Therefore, the current study investigated the vast variety of IGAs in public secondary schools in the Kilimanjaro region in relation to their contribution to financial sustainability.

Amos and Koda (2018) studied the contribution of school-based income-generating activities to quality education provision in secondary schools managed by the Catholic Diocese of Moshi in Tanzania. The study adopted a mixed approach, a cross-sectional survey design, and stratified and simple random sampling techniques to select 252 respondents. The study employed questionnaires and document analysis schedules to collect data from 168 students and 72 teachers and 12 heads of schools. The study concluded that institutional ventures are essential alternative means of generating additional income as they enable second-cycle institutions to solve financial problems. The study listed crop farming, vegetable, and poultry farming as the significant ventures managed by the schools. Lawrent (2019) did a similar study in Tanzania on teachers' multiple roles and perceived loss of professionalism in Tanzanian secondary schools. The study reported that teachers engage in income-generating activities inside the school and outside the school. The findings from the two studies indicate the engagement of teachers in school generating activities inside the school and outside the school. However, one of the studies was conducted in private and religious-based secondary schools, which has its principles of operating and handling IGAs, whereas the second study was not specific on the type of schools involved. In that context, the current study examined and explored IGAs in public secondary schools in Kilimanjaro region to realize how cultural differences signify the existence of various school-based IGAs.

Another study in Tanzania by Mbozu (2018) investigated the IGAs projects and their impact on the management of public secondary schools, the case of the Kahama council. The study findings indicated that types of IGAs projects included crop farming, poultry, canteen, school shops, and vegetable garden that were used for solving school recurrent expenses. The study findings shed light on the availability of IGAs in public secondary schools in Tanzania, but schools in Kahama council are probably supported by rich gold mining companies that back the establishment of IGAs. These obligated establishments of the current study to find out the availability of school-based IGAs in other areas of the country, most specifically in Kilimanjaro region, where indigenous people are pre-dominantly into business and agricultural activities.

Kadigi et al. (2021) conducted a study in Tanzania on the engagement of farmers along Uluguru Mountain. The study revealed that farmers were engaged in crop rotation, beekeeping,

agroforestry, tree planting, and intercropping of trees and shrubs to conserve the environments along the mountain, ensuring food security, reducing land degradation and improving biodiversity. This potential study did not indicate how schools in the locality and specifically public secondary schools were involved in environmental conservation through school-based IGAs. A related study by Joseph (2019) on income generation by selling canvas as the painting by the VIMA youth group in Arusha, Tanzania, aimed at expanding and improving the source of income for the youth group. The youth group added value to the canvas and captured the tourist market found in their places. The study findings pointed out that canvas painting is among the income-generating activities that enhance young people's earning income. The study did not connect the available youth opportunities in the locality with what is happening in the schools surrounding the centres, most significantly, public secondary schools. This study extracted the benefits of opportunities surrounding public secondary schools concerning the existence and availability of IGAs and how they are related to school financial sustainability.

RESEARCH METHODOLOGY

The study adopted a convergent mixed research design under the mixed-method approach that involved the collection and analysis of quantitative and qualitative data sets in a single phase (Creswell & Plano-Clark, 2018). Kilimanjaro Region has a total of 225 public secondary schools in its entire 7 Districts. The sample for the study was 36 secondary schools in 7 Districts of Kilimanjaro Region. A total sample of 834 respondents comprised 432 students, 360 teachers, 36 heads of schools, and 6 District Education Officers. Stratified and simple random sampling techniques were used to draw the sample for the study. Information for this study was collected using questionnaires for the heads of schools, teachers, and students, interview guides for District Education Officers, observation guides, and the documentary analysis guide to ensure triangulation of information. Content validity of the instruments was determined by research experts and the reliability of the questionnaire was tested by Cronbach Alpha at 0.809. The trustworthiness of the qualitative data was ensured by triangulation. Descriptive and inferential statistics were used for quantitative data analysis. Specifically, frequencies and percentages were used to analyze the quantitative data while the hypothesis was tested using ANOVA at a 0.05 significance level. The findings under this paradigm were presented using tables. Qualitative data were analyzed by transcription of data from interviews, direct quotations drawn, and interpretation was done according to the context of the study.

RESEARCH FINDINGS, ANALYSIS, AND DISCUSSIONS

The study assessed the availability of school-based Income-generating activities (IGAs) in the public secondary schools in Kilimanjaro region, Tanzania. The information sought by the study from respondents was on the categories of school-income-generating activities in public secondary schools. The research instruments used were questionnaires, interview guide, observation guide, and document analysis guide for data collection from Heads of Schools (HOSs), teachers, students, and District Education Officers (DEOs). Table 1 presents responses from HOSs, teachers, and students from public secondary schools in Kilimanjaro region.

Table 1: HOSs, teachers, and students' responses to the categories of IGAs available in public secondary schools

Statements	HOSs				Teachers				Students			
	No		Yes		No		Yes		No		Yes	
	f	%	f	%	f	%	f	%	f	%	f	%
Crop cultivation	22	61.1	14	38.9	210	62.5	125	37.2	124	28.7	308	71.3
Animal Keeping	34	94.4	2	5.6	313	93.2	23	6.8	393	91	39	9
Poultry keeping	36	100	-	-	325	96.7	11	3.3	403	93.3	29	6.7
Fish farming	34	94.4	2	5.6	320	95.2	16	4.8	423	97.9	9	2.1
Vegetable garden	17	72.2	19	27.8	175	52.1	161	47.9	70	16.2	362	83.8
Renting school facilities	26	72.2	10	27.8	247	73.5	89	26.5	223	51.6	209	48.4
School shop	13	36.1	23	63.9	160	47.6	176	52.4	105	24.3	327	75.7
Cafeterias	19	52.8	17	47.2	212	63.1	124	36.9	252	58.3	180	41.7
Tree nurseries	28	77.8	8	22.2	297	88.4	39	9.02	296	68.5	136	31.5
The hiring of school vehicles	35	97.2	1	2.8	307	91.4	29	8.6	411	95.1	21	4.9

Source: (Field Data, 2022)

Data in Table 1 indicate that 38.9% of the HOSs, 37.2%, of the teachers, and 71.3% of the students' responses show that public secondary schools were engaged in crop cultivation. This implies that crop cultivation is among the categories of income-generating activities in public secondary schools in Kilimanjaro region. The data obtained indicate a low percentage of public secondary schools engaged in crop cultivation, as 61% of HOSs, 62.5% of teachers, and 28.7% of students showed that crop cultivation is not among the types of income-generating activities ranked very low. This indicates that crop cultivation is not a priority of most of the public secondary schools in Kilimanjaro region.

This finding was made more vivid during the face-to-face interview with DEOs. The DEO- from district 'A' reported that: *Crop cultivation is not most common in public secondary schools in the district because most of the public secondary schools in this district have very limited pieces of land suitable for agriculture.* (Personal interview with DEO from district "A" on 05/05/2022). Another DEO from district 'B' gave the view that: *Public secondary schools in the district were given only land for erecting buildings which have hindered the school from carrying out crop cultivation as an income-generating activity and involve in crop cultivation as a source of income-generating activities* (Personal interview with DEO from district "B" on 09/05/2022).

Moreover, the interview with the DEO from district "C" gives the opinion that: *There are schools that decided to hire the land instead of cultivating crops because they find it cheaper because of students' lack of time to work in the field* (Personal interview with DEO from district "C" 03/05/2022). The views from the three District Educational Officers imply that public secondary schools in Kilimanjaro region have inadequate land and hence low income-generating activities which involve crop cultivation at a high magnitude. Data collected during the observation of IGAs indicate that there were income-generating activities such as crop cultivation on a very small magnitude, and there were small plots of maize, bananas, and cassava. This shows that

public secondary schools' involvement in crop cultivation was done on a low level that could not supplement the school's needs.

These findings are similar to what is reported in the study done by Smiles and Nadizie (2018) in Nigeria, which revealed that many agriculture-based income-generating activities have not been fully exploited by secondary schools' principals in Ambara state. This might be due to the negative attitude of the HOSs, teachers, and students toward agriculture which is tough and very demanding in terms of time and cash. However, the study by Amos and Koda (2018) in Tanzania reported that most of the private secondary schools managed by the Catholic Diocese of Moshi (CDM) engaged in crop cultivation as their IGAs. This illustrates that private secondary schools in Kilimanjaro region managed by CDM are engaged in crop cultivation as the schools have ample land which allows them to be involved in crop cultivation contrary to public secondary schools.

These findings are in line with Myeni (2021) who revealed that secondary schools with adequate land are likely involved in crop cultivation to supplement the secondary school's financial sustainability. This implies crop cultivation is not among the topmost type of income-generating activities adopted in most public secondary schools in Kilimanjaro region. The schools are not fully engaged in crop cultivation due to scarcity of land and, inadequate knowledge, and skills on how to integrate it into the school curriculum. This might be attributed to the negative attitude of the HOSs, teachers, and students toward crop cultivation with a notion that crop cultivation is a tough, hard, and time-consuming activity.

The data in Table 1. show that all HOSs, 96.7% of teachers and 93.3% of the students' responses show that poultry keeping is not among the categories of income-generating activities in public secondary schools. This implies that a big number of public secondary schools in Kilimanjaro region are not engaging in poultry keeping as IGAs. Similarly, during the review of IGAs documents from HOSs' offices, none of the schools was found to have a poultry-keeping vision and mission documents or a poultry-keeping project. Also, during the observation of IGAs structures, none of the poultry sheds existed in the schools. This illustrates that poultry-keeping in public secondary schools counts less among school priorities.

During the face to face interview with the DEO from district "A", the DEO claimed that: The heads of secondary schools in the district have inadequate skills, knowledge, and motivation on how to carry out poultry keeping as an income-generating activity. HOSs lack concrete directives from the government on how to implement the IGAs. They also have inadequate capital for an initial investment in income-generating activities (Personal interview with DEO "A" on 05/05/2022).

Another DEO from district "D" commented that:

The schools lack enough security for handling poultry-keeping because most of the public secondary schools are day schools. There is nobody on the school campus at night and during weekend days for feeding and security. The poultry keeping project demands large initial capital for infrastructures, purchasing chicks, feeding, treatment, and market fluctuations (Personal interview with DEO "D" on 27/04/2022).

The views from two the District Education Officers show that most of the public secondary schools in Kilimanjaro region do not involve themselves in poultry keeping as their IGAs due to

inadequate knowledge and skills related to IGAs, insufficient capital to invest in IGAs and lack of security as most of the schools are day schools. Therefore, poultry-keeping is not among the preferable type of income-generating activity in public secondary schools in Kilimanjaro region. These findings are in line with the study by Odundo and Rambo (2013) in Kenya who reported that poultry keeping is rarely carried out in secondary schools. This implies that public secondary schools do not prefer poultry keeping as their significant income-generating activities because of the low demands of the market for their products.

These findings are contrary to the findings reported by Kiarie and Mwaura (2019) in Kenya, which revealed that poultry-keeping is among the types of income-generating activities in high public secondary schools in Kenya. This implies that high public secondary schools in Kenya involve themselves in poultry keeping. This might be accelerated by the positive attitude and creativity of the HOSs and teachers' interest, skills, and reliable market for the poultry products. Public secondary schools need to establish poultry keeping as one of the income-generating activities in public secondary schools for the sake of training and imparting entrepreneurial skills to the secondary school learners.

Data in Table 1 show that 94.4% of the HOSs, 95.2%, of teachers, and 97.9% of the students' responses indicate that fishing farming is not among the types of IGAs in public secondary schools. This implies that fish farming is not among the types of income-generating activities carried out in public secondary schools in Kilimanjaro region. For purposes of triangulating information, through observation it was found that none of the public secondary schools have fish farming projects. This implies that public secondary schools in the Kilimanjaro region do not engage in fish farming activities, making the schools suffer from adequate revenue for quality education.

These findings are in disagreement with the Resource Dependent Theory (RDT) which demands an organization such as a school to have adequate resources for the provision of quality educational services. The statistical data from the observation indicates that public secondary schools in Kilimanjaro region do not have fish farming in their school premises. There are very few schools that have small ponds for keeping a few species of fish and frogs for science subjects. In addition to that, during the face - to - face interview with the DEO from district "A", the DEO claimed that:

Public secondary schools in the district do not have fishing farming projects due to school communities' insufficient motivation for benefits accrued from fish farming projects. Some HOSs raise a concern about inadequate funds the government allocates to the schools. Also, there were no funds set aside for implementing income-generating activities. In some schools, there is not a single pond even for laboratory specimens. This is the outcome of inadequate motivation and creativity among heads of schools, teachers, and students in public secondary schools (Personal interview with DEO "A" on 05/05/2022).

The responses from the DEO imply that public secondary schools are not aware of the economic, academic, and nutritional benefits of fish farming regardless of the requirements to use fish during teaching and learning, and for the formative and summative assessments. These results concurred with the study findings by Shava and Gunihidzirai (2017) in Zimbabwe that although fish farming was instrumental in regenerating employment, some participants failed to participate in fish farming because of laziness and ignorance of skills of rearing fish farming.

These findings coincide with the study by Patrick and Kagiri (2016) in Kenya which revealed that despite the managers receiving enough training on fish farming, it remains dormant due to several factors such as complaints of inputs costs, which require funds, and technology to produce large scale projects, skills, and training that will assist in better management of fish farming. These findings differ from the findings by Jha et al. (2016) in rural Nepal, where the fish ponds established in public schools were centers for study for students and the community's training on fish farming. The study also reported that there were consequences of the dramatic increase in awareness of fish farming, fish consumption rate, increase in revenue, and entrepreneurial skills among the participating students and the rural households. This indicates that Asian countries like Nepal use fish farming in schools for training students and communities surrounding the schools and as sources of income-generating activities for the schools. This is contrary to Tanzania, particularly in Kilimanjaro region where HOSs in public secondary schools have not understood that fish farming in the schools could be a demonstration for the students' future employment and a center for the community to learn and gain fish farming skills for both domestic and commercial use.

Moreover, data in table 1 indicate that 27.8% of HOSs, 47.9% of the teachers, and 83.85 of the students' responses show that, the vegetable garden is among the types of IGAs in public secondary schools. This finding implies that the vegetable garden is among the type of income-generating activities in the public secondary schools in Kilimanjaro region. There is a big gap between the head of schools and students' responses. This implies that students are the ones who engaged in the schools' small gardens hence they have the notion that those vegetable gardens generate income for the schools. It might be that teachers and heads of schools quantify the garden products in terms of cash when consumed by teachers or students. However, the minority of the schools have vegetable gardens for school consumption and commercial usage. This finding is contrary to the study by Urioh (2017) in Tanzania, who reported that there is a successful vegetable garden production where the participants gained entrepreneurial skills and vegetable production techniques. The findings concurred with the views given by the DEO from district "F" who said that:

Some public secondary schools have vegetable gardens, where students benefit by getting nutritious lunch meals and gain skills and knowledge in handling vegetable gardens in their families. During my visit to such schools, HOSs confirmed to generate some funds from the school vegetable gardens which they use to support teaching and learning facilities aiming to improve the academic performance of the school in the external examination by 10%. Also, they manage to provide physical support to needy students from poor families which reduces truancy and dropout. (Personal interview with DEO "F" on 29/04/2022).

The response from DEO implies that schools with vegetable gardens as income-generating activities gain extra funds for improving academic performance and the students acquire entrepreneurial skills. This finding concurred with the study by Van Lier (2017) in New Zealand which revealed that two-thirds (2/3) of the students had a vegetable garden at home, and one-quarter (1/4) of all students participated in home vegetable gardening due to the skills they obtained from the schools. The study by Van Lier (2017) also revealed that the presence of vegetable gardens both in the school and at home has improved tremendously the physical health, mental health, and the well-being of students. This indicates that in developed countries such as New-Zealand students are involved in vegetable gardening in schools. This is different from

Tanzania as a minority of public secondary schools participate in vegetable gardening, particularly in Kilimanjaro region.

Statistical data from table 1 show that 63.9% of the HOSs, 52.4% of teachers, and 75.7% of students' responses indicate that shops are among the types of income-generating activities in public secondary schools. This implies there are shop services as part of income-generating activities in public secondary schools in Kilimanjaro region. These results concurred with the study findings by Living (2022), Mbozu (2018), and Lasway (2019), in Tanzania and Kabaillah (2018) in Kenya; which support the idea that school shops are given higher priorities in public secondary schools because they need small initial capital. These study findings admitted that school retail shops are the preferences for school income-generating activities. These findings are supported by the principle of Resources dependent theory (RDT) which states that an organization can obtain resources from its environment or, more simply, from other organizations to support its actions and ambitions.

Public secondary schools mobilized the initial capital from the school resources for establishing school shops and reimburse the funds because the shop project has a constant flow of cash. For the purpose of triangulating data through observation, it was noted that all public secondary schools have school shop services. This implies that almost all the public secondary schools in Kilimanjaro region have school shop services as an income-generating activity to supplement school financial requirements.

Correspondingly the DEO from the district "E" during face - to - face interview commented that:

During the physical visit, it was proposed to the head of school to establish a school shop service to allow teachers and students to have access to the basic needs of the school campus and making it as a source of school income and lastly for helping students to get entrepreneurial skills (Personal interview with DEO "E" on 02/05/2022). The responses from the DEO imply that most public secondary schools in Kilimanjaro region invested in the school shops; because investment in the shop business is affordable and manageable. There is a cash flow, and constant customers such as the students, teachers, school visitors, and the neighboring communities.

Data in Table 1 show that 52.8% of HOSs, 53.1% of teachers, and 58.3% of students' responses denote that cafeteria services are not among the school's income-generating activities in public secondary schools. This indicates that cafeteria services are not so much carried out in the public secondary schools as an income-generating activity in Kilimanjaro region. This is contrary to the study by Nyamwega (2016) in Kenya who found out that there are canteen services in most public secondary schools as income-generating activities. Another study by Radzuan et al. (2017) in Malaysia indicated that universities provide cafeteria services to the students to generate income. Only 47.2% of the heads of schools' respondents accepted that cafeteria services are among the income-generating activities. Tadei (2014) findings support the presence of a cafeteria as an income-generating activity in public universities. The similarity is that both public secondary schools and higher education institutions rented cafeterias to provide services to the students, teachers, and other people in need.

The responses from the face - to - face interview with the DEO from district 'E' gave out the view that:

The presence of cafeteria services in the public secondary schools as sources of income has merits and demerits. It assists teachers and students in getting food services on the school premises where the school does not provide lunch meals. On the contrary, where the schools lack cafeteria services the school provides lunch meals. I wish every school to have a cafeteria service for the school community's well-being and generate income for the school. During the school visit, I advise the HOS the school to allow students to learn how to prepare snacks and other foodstuffs from those delivering services in the school cafeteria (Personal interview with DEO "E" on 02/05/2022).

Responses from the heads of schools, teachers, and students were quantified to generate the average response on the availability of the ten listed categories of IGAs. The mean scores of heads of schools, teachers' and students' responses on the availability of different categories of IGA are presented in table 2.

Table 2: Mean scores of HOS, teachers and students' responses on the availability of IGAs

Category of Respondents	Number of categories	IGA	Mean Response on the Availability
HOS	10		24.18
Teaches	10		23.34
Students	10		37.51
Total	30		28.34

Source (Field data, 2022)

Results of quantification in table 2 show that the mean response for students on the availability of different categories of IGA (37.51) was higher than those of heads of schools (24.18) and teachers (23.34). However, none of the mean scores was above fifty percent. This indicates that none of the three categories of respondents indicated the presence of at least fifty percent of the income-generating activities assessed in this study as the average mean score for all of them was 28.34. This value implies that most of the schools in Kilimanjaro region have a limited number of income-generating activities. Due to the limited availability of such activities, these schools may not have alternative sources of income to supplement the money sent by the government. Moreover, it may be difficult for students to be engaged in self-reliant activities. To find the differences in the response mean score of the heads of schools, teachers, and students, the researcher tested a null hypothesis using a one-way analysis of variance (ANOVA) at a 95% confidence level. As indicated in table 3:

Null Hypothesis

There is no significant difference in the mean responses of school heads, teachers, and students on the availability of IGAs.

Table 3: ANOVA test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1263.745	2	631.872	1.043	0.366
Within Groups	16356.12	27	605.782		
Total	17619.86	29			

Source (field data, 2022)

Results of statistical testing show that $F(2, 27) = 1.043$, $p\text{-value} = 0.336$. Since the $p\text{-value}$ (0.336) is greater than the significance level (0.05), the null hypothesis is not rejected. This means that there was no significant difference in the mean responses of school heads, teachers, and students on the availability of income-generating activities in public secondary schools in Kilimanjaro region. Thus, both of the three categories of respondents indicated a limited availability of income-generating activities in their respective schools.

Summary of the Findings

The study findings revealed that the most engaged IGAs in public secondary schools were school shops. However, cafeteria and crop cultivation were moderately practiced IGAs. Moreover, the study revealed that animal keeping, poultry keeping, fish farming, vegetable garden, tree nursery, hiring of a school vehicle, and renting school facilities were the least IGAs involved in by public secondary schools in Kilimanjaro region, Tanzania. From the hypothesis tested, it was revealed that there were limited School-based Income Generating Activities in the respective public secondary schools.

CONCLUSIONS OF THE STUDY

Based on the study findings, the study concluded that; public secondary schools were engaged in IGAs with priority on school shops. However, public secondary schools in Kilimanjaro region are rarely involved in cafeteria and crop cultivation as IGAs. Moreover, public secondary schools do not practice IGAs such as animal keeping, poultry keeping, fish farming, vegetable gardening, tree nursery, hiring of school vehicles, and renting school facilities. There was no significant difference in the mean response of school heads, teachers, and students on the availability of income-generating activities in public secondary schools in Kilimanjaro region. The study further concluded that there is limited availability of income-generating activities in public secondary schools in Kilimanjaro region.

Recommendations of the Study

Based on the study conclusions, the researcher recommended: that District Education Officers, Heads of Schools, teachers, and parents, should make sure that all public secondary schools are fully engaged in school-based income-generating activities to supplement the schools' financial requirements. The Ministry of Education, Science, and Technology should develop a clear directive based on the establishment and expansion of IGAs in public secondary schools and other educational institutions.

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