

ABOUT THIS JOURNAL

The East African Journal of Social and Applied Sciences (EAJ-SAS) is a multidisciplinary and biannual double-blinded peer-reviewed Journal that publishes articles both online and in print media twice a year. Since its establishment in 2019, the Journal has provided a platform for researchers and academics to share their research findings, knowledge and experiences through research/scholarly articles, book reviews, article reviews and case commentaries. The EAJ-SAS publishes high quality manuscripts in the areas of cultural issues, gender studies, laws, management science, information science and information technology, knowledge management, education and economics. Hence, the EAJ-SAS is a platform for discussion and debate in social and applied sciences. The publications by the EAJ-SAS are open access and freely available to copy, distribute, transmit and adapt, provided the original work and source is appropriately acknowledged and cited.

CHIEF-EDITOR'S NOTE

Dear readers,

The Editorial Office of the East Africa Journal of Social and Applied Sciences (EAJ-SAS) is thrilled to present Volume 5, Issue 1 for the year 2023. In this edition, we uphold our steadfast commitment to advancing knowledge and championing insightful research across the diverse spectrum of social and applied sciences. Our primary aim is to spotlight critical issues and significant developments within these fields.

Within the pages of this volume, you will find ten compelling articles, each shedding light on pivotal topics that bear relevance not only to our region but also to the broader global context. Our dedicated authors have conducted rigorous research, contributing their expertise across a wide range of disciplines encompassing law, economics, agriculture, linguistics, and beyond. The diversity of subjects explored in this volume underscores the multifaceted challenges and opportunities confronting many developing nations today.

Allow us provide you with an overview of the highlights from this exceptional collection in Volume 5, Issue 1. One of our articles meticulously examines the legal aspects and consequences of child marriage, scrutinising the Tanzania Law of Marriage Act No. 5 of 1971 and shedding light on its impact not only within Tanzania but also across the broader East African region. Another article delves into the strategies employed by self-employed vocational and non-vocational graduates, dissecting their influence on the economic landscape in Arusha and Dar es Salaam. Our authors have also explored the effectiveness of microcredits provided by the Women Development Fund, illuminating the pivotal role of microcredit in enhancing household well-being, with a particular emphasis on women's empowerment in Tanga City. Additionally, another author explored the consequences of regulatory reviews on the financial performance of commercial banks in Tanzania. They have also investigate the pivotal role played by irrigation systems in ensuring food security and navigate the intricate realm of agricultural commodity price fluctuations and their far-reaching implications for household welfare in Tanzania. Moreover, our authors delve into the effects of organisational culture on lecturers' turnover intentions in Tanzania's public universities, as well as the traits exhibited by cooperative members and their participation in health insurance schemes within the country. In this volume, you will also find a thorough exploration of emerging principles guiding personal naming practices in the Sukuma language, alongside an assessment of innovative models designed to enhance the quality of primary education.

The Editorial Office extend the heartfelt gratitude to the authors, reviewers, and our dedicated editorial team whose unwavering efforts have made this publication possible. Our aspiration is that the knowledge shared in this volume will not only enrich academic discourse but also serve as a catalyst for informed policies and practices capable of driving positive transformation across East Africa and beyond. As always, we encourage our readers to actively engage with these articles and share their invaluable thoughts and feedback. Together, we can continue to advance scholarly pursuits, foster critical thinking, and confront the pressing challenges facing our region.

The Editorial Office sincerely appreciate your continued support of the East Africa Journal of Social and Applied Sciences (EAJSAS). We eagerly look forward to your insightful contributions and readership. In case you wish to publish with us please read the instructions and guidelines for authors prior to submitting your manuscript(s) through the EAJ-SAS Open Journal System at: <https://journals.mocu.ac.tz/index.php/eaj-sas>.

Warm regards,



John Jackson Iwata
Editor-in-Chief

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GENDER IMPLICATIONS OF CHILD MARRIAGE: REFLECTION FROM SECTION 13 OF THE LAW OF MARRIAGE ACT NO. 5 OF 1971

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ABSTRACT

This study examines the gender implications of the Law of Marriage Act, No. 5 of 1971, specifically in the context of Section 13. It also explores girls' attitudes towards child marriage and examines gender implications in the practise of child marriage due to the growth of gender disparity. The study employs a longitudinal research design whereby the life stories of married girls were randomly collected and analysed. Data were divided into themes and subthemes to respond to the research questions. The findings show that Section 13 of the Law of Marriage Act No. 5 of 1971 allows girls to get married as early as the age of 15 years with the assumption that, at that age, girls would be old enough to possess knowledge on how to take care of babies and their home. It was discovered that girls' attitudes about child marriage were negatively influenced by the presence of secondary schools in every ward, which raised awareness on the importance of education in their lives. The study also concludes that the gap in marriage eligibility between boys and girls serves as a vehicle for gender inequality as it contributes to women's underdevelopment and lowers their status to realise their full potential in all developmental activities. The article recommends that the government should open more secondary schools in every village to increase girls' enrollment. Also, the government should immediately amend Section 13 of the Law of Marriage Act, No. 5 of 1971, to comply with International Human Rights Instruments which protect a girl child. It is advised that politicians should consider gender perspectives and effects when enacting legislation.

Keywords: Child Marriage, Gender Implication, Law of Marriage Act, Life stories, Tanzania

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

Child marriage is a social malady affecting developed and developing countries (Malhotra, 2010; Hassan, 2014; Chenge and Maunganidze, 2017). A girl below 18 years is a minor, so she cannot understand the nature of a contract she entered, as indicated in Section 11 of the Law of Contract Act CAP 345. Child marriage, also known as early marriage, is any union before the girl is emotionally and physically prepared to take on the responsibilities of marriage and parenthood (Nour, 2009; Walker, 2012; UNICEF, 2019). In this study, early marriage and child marriage were used interchangeably to refer to a female who marries before 18 years. Prevalence of the practise is high worldwide, as approximately 650 million girls and women alive today were married off before they reached the age of 18 years (UNICEF, 2020). About 88% come from developing countries, including South Asia, Sub-Saharan Africa, North Africa, the Middle East, Latin America, and the Caribbean (Nour, 2009; Montazeri et al., 2016). It is prevalent in the United States of America at 55%, Bangladesh at 66.2%, Nepal at 51.4%, Eritrea at 47%, and India at 44.5% (Walker, 2012). From the above premises, discrimination against the girl child has been an ongoing debate worldwide (CEDAW, 1995). Notwithstanding the commitment of Sustainable Development Goals to end child marriage by 2030, the practise has still not received enough consideration from different governments to raise the minimum age of marriage.



Despite decades of campaigns to eliminate it through legislation, child marriage under 18 years is still widespread in Africa, and the region is established to have the largest global share of child marriage practise (UNICEF, 2015). In Africa, it is customary to find men of 50 years and above marrying girls as young as nine (LHRC, 2015). The practise of child marriage in some African countries is reported as follows: Niger (76%), Chad (71.5%), Mali (70.5%), Guinea (63.1%), Burkina Faso (51.9%), Cameroon (47.2%), Malawi (48.1%), Uganda (47%), Zambia (41.6%), and Tanzania (41%) (Walker, 2012; Montazeri et al., 2016). These data show that the percentage of girl-child marriages in Tanzania is low compared to the rest of the world. Still, it is not well-known how child marriage affects the girl child below 18 years (Walker, 2012; LHRC, 2018).

In Tanzania, various explanations have been put forward to justify the practise of girl-child marriage. Marriage is perceived as a means of securing girls have a better life and increasing the family's economic status (Walker, 2012; Hassan, 2014). Others have alleged that early marriage is meant to control fertility, protect young girls from out-of-marriage pregnancy, the need for labour, and a submissive wife to care for the husband in old age and desirability of virginity (Montezeri et al., 2016). The practise is prevalent in different regions, including Shinyanga (59%), Tabora (58%), Mara (55%), Dodoma (51%), Lindi (48%), Mbeya (45%), Morogoro (42%), and Singida (42%) (LHRC, 2014). Notwithstanding, girl-child marriage reinforces the state of poverty and powerlessness, causes lower physical, mental, and intellectual ability, and hinders girl-child development. Unfortunately, these gender consequences of child marriage for girls have been ignored by the government, which has not made legal reforms to protect children from early marriage (LHRC, 2018). Unfortunately, legislators take years to amend such discriminatory provisions in the Law of Marriage Act, which lowers the status of women in Tanzania. Specifically, the present study is guided by three research questions:

- (i) How has the problem of child marriage evolved in Tanzania?
- (ii) What are girls' attitudes towards child marriage?
- (iii) What are the gender implications of child marriage?

2. Literature Review

The review of the related literatures is organised under the following sub-heading:

2.1 Age of Marriage

A child is defined by several international treaties, including Article 2 of the African Charter on the Rights and Welfare of the Child of 1990; a child means every human being below the age of 18 years. While the Convention on the Rights of the Child (CRC) of 1989 under Article 1 also defines, a child as every human being below the age of eighteen years. All Conventions defined a child as every human being under eighteen (18) years. However, CRC indicated that unless the majority is attained earlier under the law applicable to the child, this means that the majority age in some countries or states may be younger than 18 years. The Convention on Elimination of All Forms of Discrimination against Women (CEDAW) under Article 16(2) emphasises that marriage of a child has no legal effect, and the government is required to take appropriate action to amend law related to child marriage to specify a minimum age for marriage.

Moreover, Article 5 (1) of the Constitution of the United Republic of Tanzania (URT) 1977 directs that every citizen who has attained the age of eighteen is entitled to vote in any public election held in Tanzania. It is suggested that a person under 18 is considered a child in Tanzania. This suggests that the legal marriage age for men and women should be above 18 years, as reflected under international human rights instruments. Unfortunately, the Law of Marriage Act (LMA), which governs and regulates the whole institution of marriage, has, through the leave of court, allowed girls to enter into a contract of marriage at the age of 14 or 15 years, while a boy's marriage age is 18 years, as stipulated under section 13 of the Law. The same Act in Section 17(1) has further stated that a female who has not attained the age of eighteen years shall be required to obtain the consent of her parents (father/mother) or guardian in the absence of the parents.

The contradiction continues under the Sexual Offences Special Provision Act 1998 (SOSPA) Section 5, amended by Section 130 (2) (e) of the Penal Code. The provision provides that the consent for sexual activities is 18 years and above. It has been stated that a male person is said to have raped a girl or woman if he has carnal knowledge with or without her consent when she is under 18 years of age unless the woman is his wife who is 15 or more years of age and is not separated from the man. From these premises, there is a legal discrepancy as far as the treatment of a girl and boy child, marriage, and sexual activities are concerned.

Through the Education Act of 2002, the government has taken considerable efforts to protect the girl child. The law penalises individuals impregnating primary or secondary school students. Further, the Education Act in 2016 was amended to provide a stiff penalty of 30 years for any person who marries or impregnates a primary and secondary school girl. However, the majority of girls in rural areas are out of the education system; hence, they are unprotected by this legislation (Warioba, 2019). On the other hand, in the landmark case of Rebeca Z. Gyumi v. Attorney General (Tanzania Civil Cause No 5 of 2016). In this case, Rebeca Gyumi challenged the constitutionality of child marriage in Tanzania. As a result, the Tanzania High Court ruled that sections 13 and 17 of the Law of Marriage Act, which mandated differing minimum marriage ages for boys and girls, were discriminatory and unconstitutional. This means that the High Court of Tanzania ruled that marriage under 18 years contravenes the Constitution and accordingly advised the government to raise the minimum age of marriage to 18 years within one year. Upon Appeal in the Court of Appeal in civil Appeal no 204 of 2017. The court concluded that the entire case lacked merit. The appellant Attorney General was supposed to follow the High Court's ruling and have the LMA amended as directed. We entirely dismiss the Appeal with no order as to costs. Thus, child marriage persists in Tanzania despite the above-cited High Court and Court of Appeal of Tanzania's decisions that Section 13 of the LMA Act No. 5 of 1971 is unconstitutional as it contravenes articles 12, 13, and 18 of the Constitution of the United Republic of Tanzania of 1977. However, Tanzania has yet to make legal reforms to grant equal protection to girls and boys under the law. Hence, the existing law allows girls to get married at early ages in different ways.

2.2 Patterns of Marriage

The pattern of child marriage in Tanzania differs among ethnic groups as influenced by socio-economic characteristics (Torabi and Baschieri, 2014). Usually, the head of the family (father) arranges and forces girls into marriage, and only puberty is enough for girls to get married (World Bank, 2010; Polavarapu, 2006; Montazeri et al., 2016). Some girls are taken out of primary school to get married to ensure it is carried out. Later, the parents report the girl's absence from school as though she has been moved to another school, or they purposefully declare that their daughter has passed away. In the Kondo District, this approach is persistent. In the Maasai ethnic group, girls can be married off whether they attend school (although most do not). In Mbeya Region, Tunduru, and Tarime Districts, early marriage is common, contrary to Kilimanjaro Region, where girls usually get married only if there is no opportunity for further education (LHRC, 2014; Erulkar et al., 2020).

Among the Zigua, Kwere, and Zaramo ethnic groups, child marriage is done immediately after puberty and between the ages of 10 and 14 (LHRC, 2014; Mnubi, 2020). Girls undergo initiations (transition from childhood to adulthood) that prepare them to take full responsibility for being wives. They are taught about body hygiene, gender roles, responsibilities of parenthood, how to conduct themselves while in bed, and techniques to satisfy a man during sexual intercourse. During the initiation ceremonies, girls are given gifts such as wrappers, 'khanga', kitchen tools, a bed, gold, and money. This process of awarding the girls is known in Kiswahili as '*kutunza*'. This process makes a girl child feel rich and discouraged from continuing schooling. On the other hand, men feel proud to have a fresh girl from initiation; some men start marriage arrangements by promising or paying a higher bride price, locally known as *mahari/lobola*. Consequently, they end up having their own families while still minors (Mwakyoma, 1996; Stark, 2018; Stark, 2020). Another kind of girl-child marriage pattern is elopement marriage. An elopement marriage is a kind of marriage in which a man runs off secretly or disappears with a girl(s) to be taken as wife without her will (Mwakyoma, 1996; Wamoyi et al., 2015). This culture of elopement is prevalent in Tunduru District and

Mbeya Region, Tanzania, and the practise is commonly known as '*kutokomela/kunyaka*'. Elopement is usually accompanied by force, which in most cases negates the essential principle of free will, but in a few instances, involves an agreement between prospective spouses (Shadle, 2003; Wamoyi et al., 2015).

Another practise of girl-child marriage is known as betrothal. Parents enter into a marriage contract on their children's behalf. In this practise, the prospective husband gives the potential girl's parents a gift. It commonly takes place before the girl is nubile, and during the interval, he works on her father's land and may also cultivate the field near his village, which her mother will plant and reap. The work is considered part of the bride price (UNICEF, 1995). The child may not have attained the age of puberty and is just told of being the fiancé of somebody and not given a chance to exercise their free will to choose partners.

Unfortunately, Section 25 of the LMA recognises marriage contracted according to the customary rites, including elopement and betrothal. However, Judicature and Application of Law (JALO) section 9A (3) Cap 453 declares that Customary laws are valid if they do not contravene the express requirement of statutory law. It has been argued in the case of John Kirakwa Vs. Idd Siko, High Court of Tanzania (1989)45 Mwalusanya J (as he then was), among other things, held that "in my view, elopement and betrothal are done without the girls' free and voluntary consent; hence it is unlawful". The court decision concluded that the law does not recognise marriage contracted in these customary rites. It is, however, undisputed that most of the stated customs are still practised. Despite the high prevalence rate of child marriage in Tanzania, it is surprising to realise the limited availability of academic research on this area (Backlund and Blomqvist, 2014). Substantial research has been conducted to examine the causes of child marriage and its consequences; among such studies are ones done by Mwakyoma (1996), Ezer et al. (2006), McAlpine (2016), Stark (2018), and Schaffnit et al. (2019). However, little research has been done to explore the gender implications of Section 13 of LMA. This entails investigating the role of gender relations in allocating marriage rights and duties, benefits and disadvantages, and legal protection and punishment in Tanzania. To provide insight into the practise's long-term social, economic, and political impact; data collection was based on the life histories of married girls. This placed a girl child at the center of the research. The methods allowed for the exploration of complexity and interrelationship between the practise of early marriage, gender, and law. The life stories were grounded to reveal culture and experience as sources of information and justification of knowledge on the nature and truth of how child marriage was practised. This provided an opportunity to explain gender inequality and the events uniquely based on patriarchy to allow a better vision of reality (Marjorie, 1990; Thomson, 1992).

3. Methodology

The study centred on reported life stories from married girls in Tanzania. Life stories as a research tool remain on the margins of academic work, but during this study it was valuable for a researcher to pay close attention to the diversity of human experience (Pinnergar and Dayness, 2007). Life stories were used as sources of information about reality outside the text (Gabriele, 1993; Vähäsantanen and Arvaja, 2022). Also, they were used to unmask male bias and the kinds of discrimination that girls experience during child marriage.

This study employed a longitudinal research design whereby the life stories of married girls were randomly collected from different areas to detect any changes that might occur over time in the practise of child marriage. The longitudinal study took place between 20th March and 27th October 2020. The unit of analysis recorded the life stories of married girls between 9 and 18 years. The inclusion criteria for the study were reported life stories of married girls who had run away or were saved from the practise in rural and urban areas by different organisations. In total, 15 married girls' stories were collected from other parts of Tanzania. However, five potential participants' stories were excluded from this study because not all stories used by researchers constructed a narrative account to report the analysis results; rather, they involved literary elements and represented the participants' experiences. Ten life stories were considered sufficient for the longitudinal research analysis in this study, as similar studies by McAlpine (2016) and Vähäsantanen and Arvaja (2022) also found.

Triangulation of information was based on the information given by key informants, including Government Officers, such as Ward Executive Officers and District Commissioners, who also made follow-ups in a given story. In this manner, personal details that might reveal identities like name, family name, village, name of husband, and children were removed for ethical consideration (Standard and Prusak, 2005).

About fifteen life stories were collected in the electronic form of narrative stories from television, YouTube, and radio. Radio programmes visited centres such as Children Living in Difficulty Conditions (CWLDC) and *Alama za Nyakati*. Reported testimonies were received from Shinyanga, Mbeya, Mara, Arusha, and Dodoma. Themes and sub-themes were assigned to narrative stories to reflect the goals of uncovering the reality regarding the age of girls and men, regarding the presence of consent, violence, dignity issues, and practise. Issues derived from the stories were used to show the consequences of child marriage in their life (Gabriele, 1993). Collected life stories established gender implications of the practise, factors which influence child marriage, engage the audience, actors and structure relationship, powers and insights were managed, despite its difficulties in sampling (Rwebagira, 1996, Moezz and Mann, 2017).

On the other hand, newspapers, case law, and international and domestic legislation were purposively selected to support analysis and to understand gender violence and inequalities that girls experienced in the practise of child marriage (Walker, 2012, and Elliot, 2005). In this study, case law was utilised to demonstrate the inconsistency between customary practise and the law, while international laws and domestic legislation were explored to substantiate the violation of girls' rights (Hellum, 1999). The findings were supported by international law in demonstrating the ways in which the practise of child marriage is discriminatory and the extent to which courts protect a girl child by using the international legal framework (Rwezaura and Wanitzek, 2006).

4. Findings and Discussion

4.1 Development of the practise of child marriage in Tanzania

Evidence in records indicates that the practise of child marriage began to be formalised in 1969 through a government proposal that was tabled in the Parliament. The bill was dubbed a Government's Proposals on the Uniform Law of the Marriage of 1969 (White Paper). The proposal was plural and attempted to capture the diversity of Tanzanians regarding marriage practises. Hence, the proposal was drafted considering the religions, civil, and customary practises of people in Tanzania. The legal age of marriage was among the topics discussed in the Parliament. Section 13 of the proposal suggested that a man should be allowed to marry when he attains the age of 18 years. The justification was that a man aged 18 would have completed his primary school education. If he had not gone to school, he would have already acquired the necessary skills or knowledge to be self-reliant. The proposal articulated that a boy of 18 could vote, become a political party member (TANU), and enter into a contract.

Conversely, a girl can get married when she attains the age of 15 because at that age she is considered to be old enough and know how to care for her children and look after her home correctly (White Paper, 1969). It was suggested that setting different marriage ages for boys and girls justifies sexism (Bowman and Kuenyehia, 2003). This revelation is similar to Backlund and Blomqvist (2014), who claimed that the impression of female child sexuality in the legislative debate was a key element that allows for the reproduction of gender inequity. In contrast to boys, sexuality was seen as a possible criterion that may oppress girls by normalising oppressive behaviour and shielding them from unfavourable outside influences. (Pilcher and Whelehan 2004).

This further implies that in 1971, Tanzania's legislature enacted the Law of Marriage Act to consolidate gender inequalities in marriage and expose girls to multiple discriminations in their life (Polavarapu, 2006). The arguments for the legal marriage age decreased a girl's ability to live in the private realm and perform various domestic tasks while placing men in the public sphere to have access to education and participate in politics. Hence, men are expected to be breadwinners in the family. This finding supports the claims made by Pilcher and Whelehan (2004), Walker (2012), and LHRC (2015) that in girls' lives, sexuality is managed and formed by cultural norms and values; and that a girl's key life goals are believed to be getting

married, having children, and taking care of the family. Girls in this kind of marriage often experience worse developmental outcomes than boys their age, as they have less power and autonomy. Henceforth, the legal age of marriage lacked gender equity by assigning discriminatory gender roles and gender-based minimum ages that hindered the total advancement of a girl child in her life and left a packed room for protecting a girl child. Backlund and Blomqvist (2014) claimed that to address law enforcement adequately, and there must first be a statute outlawing child marriage in Tanzania.

4.2 Girl's Attitude towards Child Marriage Practise

Observation from collected stories revealed that all girls showed efforts to reject the practise of early marriage, or any indicator towards that practise tended to resist getting married at a young age by running away from home, reporting such incidents to the nearby government office, or escaping marriage soon or after a few years in marriage. This finding is in line to Crichton's, et al. (2018) report that girls who resisted child marriage often did so by arguing that they want to complete their education and achieve their personal goals before getting married. The girls also highlighted the negative consequences of early marriage, such as health risks, domestic violence, and limited opportunities for personal and professional growth. This indicates that young girls changed their attitude towards child marriage in Tanzania as previous girls could not resist this practise. This is probably due to the coming of ward secondary schools, whereby in 2004 and 2005, about 1050 schools were built. This has influenced girls' aspirations to acquire an education; hence, elopement and betrothal are dying out slowly because the girls may refuse to get married and opt for education, equipping girls with the skills, knowledge, and credentials to participate fully in society (UNESCO, 2010). This finding is in line with WiLDAF (2016) that increased awareness of the importance of education influences girls to change their attitude towards marriage as advocated in community radio stations, mainstream media, social media, interaction with other people, and positive feedback from educated girls. This implies that young girls challenge their parents' belief that older men can care for women in all spheres because the practise exposes girls to multiple forms of violence.

4.3 Gender Implications in the Practise of Child Marriage

4.3.1 Girls' age of marriage

This study comprised 10 girls who were involved in early marriage with their ages ranging from 12 to 15 years, of which among them 50% were married off at 12 years as shown in Figure 1. The findings further indicate that one-fifth (20%) of girls were married at 14 years, and a small proportion (10%) were married off at 15. This implies that girls were married at tender ages and giving them adult responsibilities, which infringes on their right to the enjoyment of childhood, including the right to rest and leisure, to engage in playing, and other recreational activities is breached due to early marriage. This further implies that there is a possibility for girls who are married at a tender age to suffer from abuse, as they are powerless. In this way, we can see that the Law of Marriage Act contains discriminatory provisions against women, which expose women to multiple discriminations.

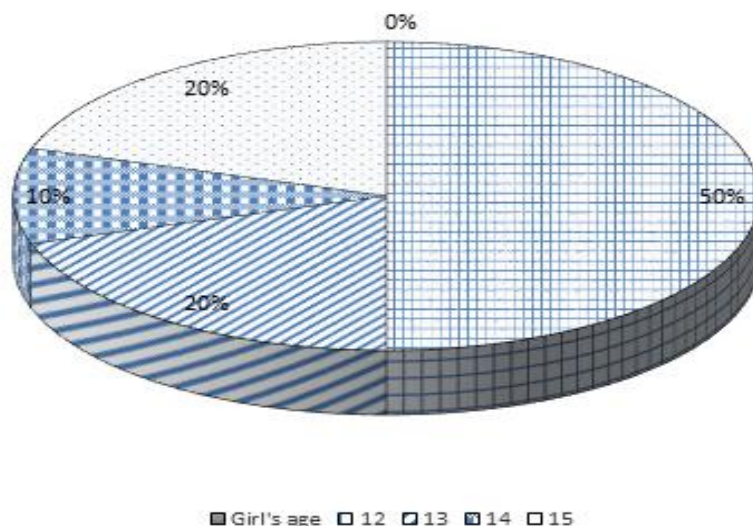


Figure 1. Age distribution of girls involved in early marriage (n =10)

4.3.2 Men's age of marriage

The study revealed that 50% of men with the age ranging between 26 to 30 years got married to girls of 12 years of age. On average, 30% of men ranging from 32 to 56 years married girls of 15 years of age, while 20% of men married 27 to 31 years old girls, and others married two girls with 13 to 14 years. This confirms that the age difference tends to reinforce the powerlessness of the girls, which places girls at higher risk of being abused. These findings tally with the information presented by LHRC (2015) that young girls are exposed to gender-based violence because they are often married to men who are much older than them. The CRC's Article 19, which forbids all types of violence against children, has also acknowledged the susceptibility of children in marriages to violence. One girl from Arusha narrated her story:

"I got circumcised when I was 13 and married a 36-year-old man soon after. My husband's family treated me like a maid and an orphan from a low-income household. I had my first child when I was 15 while caring for many livestock and other children in a forest."

These findings align with Bowman and Kuenyehia (2003) who stated that according to customary law, married women must also help males with farm work, carry out other tasks, and infringe on other women's rights.

Table 1. The Pattern of Marriage ages between Men and Girls

No.	Region/ District	Bride age	Husband age	Summary of marriage age		
1.	Dodoma	12	36	Men age	%	Married girl age
2.	Longido	12	60			
3.	Arusha	12	40	27 - 31	30	15
4.	Shinyanga	12	28	32 – 56	20	13-14
5.	Mbeya	12	26			
6.	Dar es Salaam	13	31			
7.	Dodoma	13	27			
8.	Shinyanga	14	36			
9.	Mbozi	15	56			
10.	Shinyanga	15	31			

4.3.3 Gender disparity in consent to marriage

Under this aspect, girls were married off without their consent due to different reasons. As shown in Table 2 that there were significant categories of marriage arrangement, 80% of girls' parents arranged their girl-child's marriage to justify their willingness for the wedding. At the same time, 20% of girls eloped. The observations show that in the Maasai ethnic group, girl children are married off before they even reach puberty and without their consent, regardless of whether they are schooling or not. The findings align with Bowman and Kuenyehia (2003) and Mohammadi (2016) that fathers consented on their daughters' behalf in most cases of child marriage.

Despite section 17(1) of the Law of Marriage Act, require girls between fifteen and eighteen before marrying to obtain their father's consent, or if he is dead, their mother's and no similar provision applies to boys. Findings further show that in the cases as earlier reported, girls were not part of seeking consent from their fathers. Instead, their parents took the responsibility of marrying off their daughters and consented on their behalf. This deprives them of their right to express their opinions, as Article 12 of the CRC provides. Also, Article 6 of the Universal Declaration of Human Rights provides for free and full consent from both parties in contracting marriage. This implies that if girls are engaged in marriage only with the consent of their parents, such marriage is a forced marriage since girls are not allowed or given a chance to express their views; hence they are enslaved in the husband's houses to save different roles under physical force or physical threats. Anitha and Gill (2009) argues that in the absence of consent, girls were not allowed to

express their views; hence they are enslaved, and significant imbalances in power in marital relations arise and create injustice between the parties, which entertain different forms of domestic violence.

Table 2: Consent Status in the practise of child marriage

Type of marriage	Consent status %	
	Yes	No
Arranged marriage by parents	-	80
Eloped/ Convinced by parents	10	20

4.3.4 Humiliation of a girl child's dignity

The study unearthed that in the majority (80%) of recorded stories, parents/fathers have consented on behalf of their children (Table 2). In comparison, a small proportion of 20% of girls entered into a marriage contract through elopement. This shows that child marriages are not always consensual and that a girl's identity as a human being with the ability to think is lost. This shows that permission was not given voluntarily in all instances of child marriage; as a result, a girl child loses her identity as a human being with no right to think. Parents and in-laws see the girls as a piece of property to be used for their ends through the payment of the dowry price. Hence, girls are subjected to a source of economic gain. This confirms Polavarapu's (2006) and Ezer et al. (2006) argument that the right to enter into marriage willingly or voluntarily is inherent to a woman's dignity; hence, denying the right to consent reduces women's status to slavery. A girl from Shinyanga Region narrated that:

"I was married at a tender age to a man aged 36 years after he paid 13 cows as dowry price. I was used as a domestic servant, and early in the morning, I was required to fetch water for his parents and put them in front of their door. My husband used to beat me when I was pregnant after giving birth, and for every mistake I made."

This points out that husbands and in-laws see the girl as a source of cheap labour and an object of pleasure. Thus, girls are reduced to a thing and an object rather than a subject, leading to gender inequality. The study disclosed that parents in Loliondo District killed their girls who refused to consent to marriage. The parents feared losing around 40 herds of cattle already paid as bride dowry. This finding tallies with the decision in the case of Ahmed Said Kidevu Vs. Sharifa Shamte (1989 TLR 148). Maina, J. held that marriage is the voluntary union of a man and a woman and is contracted with the parties' consent. Moreover, the High Court of Tanzania insisted in the case of Jonathan Vs. Republic (2001, Tanzania Law Report TLR 5) and Mallya Vs. Republic (2001 TLR 88) that marriage without consent is invalid and a violation of dignity.

4.3.5 Gender disparity in education

The study revealed that all girls (100%) involved in early marriage had no opportunity for further schooling. This is whether to continue with primary or secondary education. Among them, 60% of girls dropped out of schooling at standard three, and a small proportion (10%) dropped it at standard five (Table 3). In her story, one girl from Shinyanga region stated that "... My parents advised me to prioritise marriage over academics."

This connotes that child marriage denies girls opportunities for education and to build life skills. This revelation is similar to Walker (2012), who found out that girls who married before 18 are likelier to have dropped out of schooling, undermining the development rights of the girl child and women in general. Polavarapu (2006) also argues that child marriage compromises their overall development. This leaves them socially isolated with little education, skills, and opportunities for employment and self-realisation, contrary to Tanzania's commitment to poverty reduction by achieving gender equality. They do not participate and benefit equally like boys from economic activities and decision-making in their community.

Table 3: Education status of girls

No	Dropout	Girls %
1	Standard 3	60
2	Form 1	30
3	Standard 5	10

4.3.6 Gender inequality in health

4.3.6.1 Girls' marriage and premature death

This study confirmed that violence was used to force girls to get married. It was reported in a local newspaper, namely Kulikoni, that a Maasai girl was killed when she refused to get married at the age of 12 years:

"...A 12-year-old girl from Loliondo District was forced to wed a 60-year-old man in return for 30 cows. Her spouse coerced her into having sex with him before raping her. The girl tried to complain about the incident to her parents the next day, but her father advised her to return to her husband or risk being harmed. On the first day of intercourse, the girl chose to be assaulted rather than experience the pain. Her father chose to make a call to Morans. Her father stood away and watched as the Morans tied the girl with a rope and beat her with sticks called Njibi-Njibi all over her body. Following a brief period of bleeding, the girl's body was covered in cattle urine, which one Moran applied to the wounds to stop the bleeding. Meanwhile, other Morans were preparing soup for the girl to drink so she might gain energy. Sadly, when the girl's ties were cut, she asked for water but passed away before receiving any."

This implies that child marriage increases the risks of violence and abuse because all rights of a girl are violated at once, including rape, battering, and the right to life. This further connotes slight differences between funeral and wedding ceremonies in the community because all traditions dominated cries from girls compared to men. The findings agree with those of Heise (1994) that child marriage is among gender violence practices in the girl child during her childhood as the practices expose young girls to rape, battering, and health complications. This finding also agrees with those of Singh and Samara, 1996; Walker, 2012 and Montazeri et al. 2016 that child marriage curtails girls' rights to education, health, living an adequate standard of life, enjoying childhood, and protection. They are at risk of physical and sexual violence in marital relations. From the preceding argument, we can see that the law is a vehicle for gender inequality.

4.3.6.2 Early marriage exposed the girl's child to disability

The discoveries show that all married girls were immature in handling reproductive activities. This implies that through child marriages, young girls were exposed to different health complications. One of the victims of child marriage from Dodoma, in her testimony, supports this by saying:

"When I was 12, my parents convinced me that marriage was preferable to education. As a result, I was pushed to marry. I developed a fistula because I was too young to have children. My doctor advised me that because my pelvic girdles were weak, I frequently let faeces flow from my bladder into my vagina."

These findings comply with the observation by Polavarapu (2006) who discovered a married girl child with a fistula problem; she has no control over urine as well as faeces, and it causes much distress to the poor girl because of the foul smell, which leads to discrimination and self-rejection. Nour (2009) and Warioba (2009) support these findings that the practice increases the risk for obstetric fistulas, depression, sexually transmitted infections, cervical cancer, malaria, and maternal mortality or infant death and discourage early pregnancy among young women, which can be preventable and treatable for fistulae. This finding contradicts what is stated in Article 24 of the CRC, which shows that a girl child with health issues is denied the right to the maximum degree of reasonably feasible development.

4.3.7 Gender inequality in accessing justice

This study revealed that all girls married at a tender age did not bring any action before the court to challenge the practice. This is probably because Section 13 of LMA states that the minimum age for marriage is 14 years under the leave of the court and 15 years for girls, while for boys, it is 18 years. The age limit signifies applications of other laws concerning who should bring a case before the court. The Civil Procedure Code of 1966 requires anyone not to bring an action in a court below 18 years old. Consequently, section 2 of the Age of Majority Act of Tanzania emphasises the age of the majority at eighteen years. This implies that this status prohibits a girl's right to vote as indicated in the Tanzanian Constitution, enter into a contract as indicated in Section 11 of the Law of Contract Act CAP 345, and own property contrary to the Convention on the Rights of the Child. This implies that child marriage denying a girl child brings an action to court due to the age limit. This position contradicts article 15 (1) of CEDAW of 1979, which calls upon women's equality with men before the Law and the Maputo Protocol of 2003, which directed that women's access to justice is right. However, Order XXXI, Section 1 of the Civil Procedure Code of 1966 gives an exception to the general rule that a child can bring a case to court through the next friend or the child's guardian. The principle under Order XXXI, Section 4 of the Civil Procedure Code, requires that any person who is of sound mind and has attained 18 majorities may bring a suit on behalf of a minor when there were violations Bill of Rights included in the Tanzanian Constitution as well as the Law of the Child Act. This means a child must have an adult representative to file a suit under the Law of the Child Act and the Bill of Rights. According to Order XXXI, Section 4 of the Civil Procedure Code, any person who is of sound mind and has attained the age of majority may bring a suit on behalf of a minor as long as their interests are not adverse to the minority. In this regard, the practice of child marriage is unconstitutional and infringes the law of the child, but the age limit to bring a case to court does not favour young girls to access justice unless she uses their next friend or guardian.

4.3.8 Gender inequality in getting to justice

This study revealed that the legal construction of the age of marriage invites the application of other laws; hence offenders use the same law to escape liability. According to the Sexual Offence Special Provision of 1998 (SOSPA), it is an offence for a man to have sexual intercourse with a girl below 18 years with or without her consent unless the woman is his wife. In this premise, men use SOSPA to defend themselves when they marry a young girl 14 years; hence, she is his wife. This suggests that the contested clauses allow marriage for those considered to be children while also giving offenders a haven to escape responsibility.

A similar view was seen in the case of DDP vs Waziri, Criminal Appeal (2001) 71 in the High Court of Tanzania at Moshi. In this case, the Appellant appealed against the District Court's decision to acquit the Respondent accused of raping her when she was 15. The Respondent contended that the sexual relations were consensual; the Appellant filed the complaint because she became pregnant, and he married another woman. According to Justice Munuo, a child is someone under 18 years of age, as the CRC defines. The CRC further requires that States Parties take protective measures to prevent and address child abuse. Section 130 (2)(1) of the Penal Code Cap 16 RE of 2022 clause establishes the crime known as "statutory rape" today. It is called that because it is illegal to have sexual contact with anyone who is under 18 years, regardless of their consent. Age plays a significant role in proving such an offence in that sense. According to the Penal Code, having sex with a minor, with or without her agreement, is illegal and a crime. Accordingly, the justice found the Appellant guilty of rape and imposed a mandatory sentence of 30 years imprisonment.

On the other hand, the court has tried to overcome this problem by using articles from the Constitution of the United Republic of Tanzania and International Human Rights instruments. As it was observed in the case of Mallya vs R, High Court of Tanzania (2002)88 Criminal Appeal, where Joseph Mallya relied on the LMA of 1971, Sec. 9(1) that provides that a customary marriage must be voluntary between the parties, he appealed his rape conviction. He alleged that he did not commit rape but married the victim under customary law. Justice Munuo held that the Appellant's Act was an abuse of custom and dismissed the Appeal. In support of this conclusion, the justice also cited Article 16 and Article 2 of the Universal

Declaration of Human Rights and CEDAW, respectively, requiring state parties to take appropriate measures to abolish customs and practises that discriminate against women.

It was further observed from Justice Mwesiumo (as he then was) in the case of Joseph Kivuyo and Regional Police Commanders and Others when he described the court's position in society as a "Temple of Justice and nobody should fear to enter it to battle his legal redress ". In this regard, the court opens the door for feminists to protect the rights of a girl child, as in the case of Rebeca Gyumi vs the Attorney General. In response to this call, a lady called Miss Gyumi submitted a petition for all minors, arguing that the Tanzanian Law of Marriage Act's lawful marriage age was unconstitutional. The Petitioner sought a declaration that sections 13 and 17 of the Law of Marriage Act No 5 are unconstitutional for offending the provisions of Articles 12, 13, and 18 of the Constitution of the United Republic of Tanzania of 1977. It was held that laws relating to marriage in Tanzania are generally not only unconstitutional and discriminatory but also violate the rights of the girl child. However, a declaration was not enough without the amendment of specific laws.

5. Conclusion and Recommendations

This paper concludes that the development of gender disparity in section 13 of the Law Marriage Act No.5 of 1971 stemmed from the Government's Proposals on Uniform Law of Marriage (Government Paper No. 1 of 1969), in which a girl child's adolescence was regarded as the basis for the legal age of marriage. It was also shown that girls under 18 years are not effectively protected since they are subjected to various forms of discrimination. As a result, the age of marriage is merely a theoretical safeguard for girls' rights. Members of Parliament are advised to evaluate concerns affecting gender groupings while adopting legislation by considering equal opportunity for boys and girls in their lives. Girls' opinions toward child marriage were found to be negative due to the cautions they received when they reached secondary school, which helped transform their viewpoints and raise their understanding of the value of education. It is recommended that the government open secondary schools in every village to promote girls' enrollment. The study also suggests that the difference in the minimum age of marriage between boys and girls serves as a conduit for gender effects such as violence, inequality, and human rights violations. As a result, child marriage is inextricably tied to women's underdevelopment and the lowering of women's standing. It is recommended that the government take immediate action to amend Section 13 of the LMA of 1971, as suggested by the High Court of Tanzania, to raise the minimum marriage age for girls and boys to 18 years to reduce the prevalence of the practise in Tanzania, protect and promote the rights of girls meaningfully. Amendment of Section 13 of the LMA of 1971 will ensure that national laws comply with regional and international human rights instruments on child rights.

References

- Amani, Mwakyoma. (1996). *The validity of Nyakyusa customary law*. Dar es Salaam: University of Dar es Salaam.
- Anita, Raj. (2010). When the mother is a child: the impact of child marriage on health and human rights. *Archives of Disease in Childhood*, 95(11): 931- 935.
- Aparna Polavarapu. (2006). Child marriage and guardianship in Tanzania: robbing girls of their childhood and infantilizing women, *The Georgetown Journal of Gender and the Law*, 7(357): 357- 439.
- Assembly, U. G. (1989). Convention on the rights of the child. *United Nations, Treaty Series*, 1577(3): 1-23.
- Bart, R., and Ulke, W (2006). The constitutionalisation of family law in Tanzania. *The International Survey of Family Law*.
- Brett L. Shadle. (2003). Bridewealth and female consent: marriage disputes in African Courts. *The Journal of African History* 44(2): 241-262
- Carmichael, S, Tine De Moor, and Jan Luiten van Zanden. (2011). When the heart is baked, do not try to knead it: Marriage age and spousal age gap as a measure of female' agency. *Working Paper No. 19* <http://www.cgeh.nl/working-paper-series/>
- Centre for Reproductive Rights. (2013). Tanzania forces girls to undergo invasive pregnancy tests, expels pregnant students. <https://www.reproductiverights.org/pressroom/new-report-tanzania-forces->

- girls-to-undergo-invasive-pregnancy-tests-expels-pregnantstudyCharter, A. (1990). *African Charter on the Rights and Welfare of the Child*. Addis Ababa: African Union.
- Civil Procedure Code (1966), Order XXXI, Section 1.
http://www.tanzania.go.tz/egov_uploads/documents/CIVIL%20PROCEDURE%20CODE.pdf.
- Crichton, J., Theobald, S., Zulu, E. M., & Abuya, T. (2018). 'I just think that money is a big issue': a qualitative exploration of child marriage drivers and barriers to girls' education in seven regions of Tanzania. *BMC International Health and Human Rights*, 18(1): 1-16
- Cyathia, G. Bowman, and Akua, Kuenyehia. (2003). *Women and Law in Sub-Saharan Africa*. Accra: Sedco Enterprise.
- Dahl, G. B. (2010). Early teen marriage and future poverty. *Demography*, 47(3): 689 -718.
- Elliott, J. (2005). *Using narrative in social research qualitative and quantitative approach*. London: Sage.
- Erulkar, A., Medhin, G., Weissman, E., Kabore, G., & Ouedraogo, J. (2020). Designing and evaluating scalable child marriage prevention programs in Burkina Faso and Tanzania: A quasi-experiment and costing study. *Global Health, Science and Practise*, 8(1), 68-81.
- F. Torabi, and A. Baschieri. (2010). Ethnic differences in the transition to first marriage in Iran: the role of the marriage market, women's socio-economic status, and development process. *Demographic Research* (22): 29 – 62.
- Ghodha. D., Hotchkiss D. R., and Gage A. J. (2013). Association between child marriage and reproductive health outcomes and services utilisation: a multi-country study from South Asia. *Journal of Adolescent Health*, 52(5): 552- 558
- Kathree, F. (1995). Convention on the Elimination of All Forms of Discrimination against Women. *South African Journal on Human Rights*, 11(3): 421-437.
- Legal and Human Rights Centre. (2014). *Tanzania Human Rights Report*. Dar es Salaam: Legal and Human Rights Centre.
- Legal and Human Rights Centre (2018). *Sexual violence at threat to children rights and welfare in Tanzania report*. Dar es Salaam: Legal and Human Rights Centre.
- Legal and Human Rights Report. (2018). *Sexual violence a threat to child rights and welfare in Tanzania*. Dar es Salaam: Legal and Human Rights Centre.
- Linda, Thomson. (1992). Feminist for Family Studies. *Journal of Marriage and Family*, 54(1): 3-18.
- Lori L. Heise. (1994). *Violence against Women: the Hidden Burden*. Washington D.C: World Bank publication.
- Rwebangira. M. K. (1996). *Proceedings of a national workshop on women and law in Eastern Africa*. Dar es Salaam: Dar es Salaam University Press.
- Malhotra, A. (2010). *The causes, consequences, and solutions to forced child marriage in the developing world*. Washington, DC: International Center for Research on Women.
- Marjorie, De Vault. (1990). Talking and listening from women's standpoint: feminist strategies for interviewing and analysis. *Social Problems*, 37(1): 96-116.
- McAlpine, L. (2016). Becoming of PI: story from doing managing research. *Teaching in Higher Education*, 21(1): 49-63.
- McArthur, L. Z, and Resko, B. G. (1975). The portrayal of men and women in American television commercials. *The Journal of Social Psychology* 97: 209-220.
- Mnubi, G. M. (2020). Re-writing stories of child, early and forced marriages through vocational and entrepreneurship skills: experience from the " girls inspire project" in Tanzania. *Journal of Learning for Development*, 7(2): 246-260.
- Nawal. M, Nour (2009). Child marriage: a silent health and human rights issue. *Rev Obstet Gynecol. Winter*; 2(1): 51–56.
- Pilcher, J., and Whelehan, I. (2004). *Fifty key concepts in gender studies*. London: Sage.
- Pinnegar, S., and Dayness, J.G. (2007). Locating narrative inquiring historically: The matics in the turn narrative. In D. J. Claninin (ed). *Narrative inquiry: mapping a methodologically*. Thousand Oaks: Sage. DOI: <http://dx.doi.org/10.4/35/9781452226552.n>Radio Tanzania. (2006). Monday 12th June, morning. Watoto Wanaoishi kwenye Mazingira Magumu.
- Rights, C. (1948). Universal Declaration of Human Rights. General Assembly Resolution 217A III.
- Rosenthal, Gabriele. (1993). Reconstruction of life stories: principles of selection in generating stories for narrative biographical interviews. *The Journal of the Narrative Study of Lives* 1(1): 59- 91.

- Simini Montazer, Maryam, Gjaracheh, Nooredin Mohammadi, Java Alaghband Rad, and Hassan Eftekhari Ardili. (2016). Determinant of early marriage from married girl's perspective in Iranian setting: a qualitative study. *Journal of Environmental and Public Health*. DOI: <http://dx.doi.org/10.1155/2016/861592>.
- Stark, L. (2018). Early marriage and cultural constructions of adulthood in two slums in Dar es Salaam. *Culture, Health & Sexuality*, 20(8): 888-901.
- Stark, L. (2020). Motives and agency in forced marriage among the urban poor in Tanzania. *Ethnos*, 85(1):124-144.
- Sundari Anitha and Aisha Gill. (2009). Coercion, consent and the forced marriage debate in the United Kingdom. *Feminism Legal Study* 17:165–184
- Tamar Ezer, Kate Kerr, Kara Major, Aparna Polavarapu and Tina Tolentino. (2006). Child marriage and guardianship in Tanzania: robbing girls of their childhood and infantilizing women. *The Georgetown Journal of Gender and the Law*, 7:357- 439.
- Tanzania. (1977). The Constitution of the United Republic of Tanzania, 1977. Dar es Salaam: Government Press
- The United Republic of Tanzania, Government's Proposals on Uniform Law of Marriage (Government Paper No. 1 of 1969), para. 28 (Dar es Salaam, 1969) [starting now White Paper]. The White Paper recognises that "there is no valid reason why a woman should not have the same rights as a man." para. 20.
- The United Republic of Tanzania. (1971). Law of Marriage Acts No 5. Dar es Salaam: Government Press.
- The United Republic of Tanzania. (1995). Tanzania Citizenship Act. Dar es Salaam: Government Press
- The United Republic of Tanzania. (1995). Tanzania Citizenship Act, 1995. Dar es Salaam: Government Press
- The United Republic of Tanzania. (1998). Sexual Offence Special Provision of (SOSPA) Act. Dar es Salaam: Government Press
- The United Republic of Tanzania. (2019). The Judicature and Application of Laws Act (JALO) Cap 453. Dar es Salaam: Government Press
- The United Republic of Tanzania. Law of Contract Ordinance, Cap 345. Dar es Salaam: Government Press
- UNICEF. (1995). The Girl Child in Tanzania. Today's Girls Tomorrow Women.
- UNESCO. (1995). The girl child in Tanzania: Today's girls tomorrow women. A research Report.
- Vähäsantanen, K., & Arvaja, M. (2022). The narrative approach to professional research identity: Relational, temporal, and dialogical perspectives. In *Methods for Researching Professional Learning and Development: Challenges, Applications and Empirical Illustrations* (pp. 373-395). Cham: Springer International Publishing.
- Walker, N. (2012). Engineering identities. *British Journal of Sociology of Education*. 22(1): 75–89.
- Wamoyi, J., Wight, D., & Remes, P. (2015). The structural influence of family and parenting on young people's sexual and reproductive health in rural northern Tanzania. *Culture, Health & Sexuality*, 17(6): 718-732.
- Warioba, I. (2019). Child marriage in Tanzania: A human rights perspective. *Journal of Law, Social Justice and Global Development*, 2(1): 1467-0437.
- WilDAF (2016). *Tanzania women rights situation*. Dar es Salaam: WilDAF Tanzania.
- World Bank. (2010). *Fertility decline in the Islamic Republic of Iran 1980– 2006: A case study*. Washington, DC: World Bank.



FIRMS' COMPETITIVE STRATEGIES AND PROFITABILITY AMONG SELF-EMPLOYED VOCATIONAL AND NON-VOCATIONAL GRADUATES IN ARUSHA AND DAR ES SALAAM CITIES, TANZANIA

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ABSTRACT

The implementation of one or more competitive strategies promises higher profitability for small firms. However, it remains unclear whether self-employed vocational and non-vocational graduates adopt any particular strategies to achieve increased profitability. This study aimed at examining the influence of competitive strategies on firm profitability among self-employed graduates. In order to achieve this, a descriptive cross-sectional survey design was adopted, involving a sample of 384 respondents. Quantitative data were analysed using independent samples t-test and multiple linear regression, while qualitative data underwent constant comparison content analysis. The results of the independent samples t-test indicate a significant difference in gross profit and net earnings between the two groups ($p < 0.05$). Specifically, self-employed vocational graduates' gross profit and net earnings were higher than those of their counterparts. Furthermore, the findings on competitive strategies reveal that both categories of graduates' businesses' overall profitability performance were positively influenced by both cost-leadership and differentiation strategies ($p < 0.05$). Based on the outcomes of the independent samples t-test, it can be concluded that profitability between vocational and non-vocational graduates differs due to inadequate price control among non-vocational graduates. As a result, efforts to improve competitive price setting are necessary among non-vocational graduates. Moreover, this study concludes that self-employed graduates can achieve higher profitability by simultaneously pursuing both cost-leadership and differentiation competitive strategies. To enhance firm profitability among self-employed graduates, it is recommended that interventions focus on strengthening cost-leadership and differentiation strategies for both categories of graduates' businesses. By shedding light on the influence of competitive strategies on profitability performance among firms owned by self-employed vocational and non-vocational graduates, this study significantly contributes to the body of knowledge on profitability performance in the academic literature.

Keywords: Competitive strategy, Non-vocational graduates, Profitability performance, Self-employed graduates, Vocational graduates.

Paper type: Research paper

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1. Introduction

In a world of growing global competitive pressure, the formulation of firms' strategies plays a pivotal role in shaping their decision-making processes (Owolabi and Obida, 2012; Drahokoupil, 2014). Previous studies contend that firms' competitive strategies are closely tied to their profitability performance (Kang and Montoya, 2014; Chatzoglou et al., 2018). As a result, to attain planned profitability, firms must continuously refine their strategies to adapt to the ever-changing external environment (Bayraktar et al. 2017; Rothaermel, 2017). Debates surrounding firms' competitive strategies and profitability have been prevalent among Micro, Small, and Medium Enterprises (MSMEs) in many developed countries (Spanos et al., 2004). It is



argued that each business possesses unique strategies that differentiate them from their competitors (Gupta et al., 2010; Toledo et al., 2010; Uçmak and Arslan, 2012).

According to Porter (1980), for a firm to secure long-term profitability, it must choose one or more strategies. For instance, a business employing a differentiation strategy must invest in expertise, specialised equipment, and highly knowledgeable employees to distinguish its products from those of its rivals (Allen and Helms, 2016; Widuri and Sutanto, 2018). This strategy is expected to enhance the firm's profitability through higher profit margins achieved by selling its products at premium prices to customers (Henandez-Perlines et al., 2016). Additionally, the differentiation strategy empowers the firm to command premium prices that compensate for the cost of differentiation, resulting in higher profit margins (Wu, Gao, and Gu, 2015; Allen and Helms, 2016).

On the other hand, firms implementing the cost-leadership strategy focus on attaining competitive advantage by reducing costs in the industry (Hoskission, Ireland, and Hitt, 2011). This strategy can be achieved through various means, such as bulk manufacturing, bulk delivery, economies of scale, know-how, product or service design, input costs, full capacity deployment of assets, and access to raw materials (Malburg, 2007; Hoskinsson et al., 2011; Acquaah, 2011; Banker, Mashruwala, and Tripathy, 2014). As a low-cost leader, the firm can create barriers against new market entrants who would require substantial funds to enter the market (Hyatt, 2008). However, the cost-leadership strategy has disadvantages in that it fosters limited consumer loyalty, and if the firm decreases prices too much, it may experience reduced revenues (Kanyagia, 2015).

In Sub-Saharan African (SSA) countries, competitive strategies and profitability have emerged as a consequence of economic transformations adopted by many developing economies over the past two decades (Amoako-Gyampah and Acquaah, 2008). These economic policies removed protective barriers, adopted free trade policies, established market-friendly institutions, and integrated their economies with international markets, consequently intensifying domestic market competition (Acquaah and Yasi-Ardekani, 2008). As a result, businesses face increased transaction costs, business risks, and competition due to consumers being exposed to a wide range of choices. This necessitates the adoption of different strategies to achieve higher profitability among MSMEs in developing economies (London and Hart, 2004; Ingenbleek et al., 2013). Consequently, the focus on product quality, cost reduction, and efficiency improvement becomes a deliberate priority among MSMEs in developing economies (Acquaah and Yasi-Ardekani, 2008).

In Tanzania, as in many other developing economies, competition among firms intensified after the government implemented market liberalisation policies, which involved considerable reduction of the government's role in doing business (Kanaan, 2000; URT, 2003). Additionally, the government privatised state-owned businesses and allowed private entrepreneurs to establish their own firms in the economy (Mkubwa et al., 2008; Diao et al., 2020). The economic liberalisation policies increased the exposure of domestic firms that were formerly protected to competition from international businesses (Mkubwa et al., 2008). Therefore, it is imperative for domestic firms to develop viable competitive strategies in order to become competitive and profitable in the liberalised market environment (Anand et al., 2006).

Existing studies including the study by Tabari et al. (2013), Dahmen and Rodriguez (2014) and Myšková and Hájek (2017) indicate that linking firms' competitive strategies with profitability measures provides crucial insights into firms' profitability performance. According to Li's et al. (2009) viewpoint on the competitive advantage, the positive outcomes arise when a firm positions itself appropriately in the market based on its analysis of opportunities and threats in the competitive environment. Studies such as Voola et al. (2004), Allen and Helms (2006), Granados et al. (2019) and Diao et al. (2020) support the notion that low-cost and differentiation strategies lead to improved profitability performance. Given the significance of competitive strategies in enhancing firms' profitability in most developed countries' economies, the adoption of one or more of these strategies among VET and non-VET graduates would likely increase the

chances of improving businesses' profit levels and contribute to a country's economic development and self-employment creation.

Understanding a firm's profitability measures requires basic knowledge of financial statements, such as the statement of financial position and statement of comprehensive income (Dahmen and Rodriguez, 2014). Key elements of financial statements, such as sales levels, cost of sales, and expenses, are vital inputs in assessing firms' profitability and their relationship with competitive strategies using various methods of financial analysis (Ross et al., 2019). Ratio analysis stands out as a powerful tool for financial analysis, enabling the evaluation of firms' profitability based on product/service pricing and cost control strategies (Pandey, 2010). However, evaluating firms using ratios necessitates comparison with relevant standards, which may include past ratios from previous financial statements of the same business and competitors' ratios from selected similar businesses at a specific point in time (Pandey, 2010; Myšková and Hájek, 2017). Ratio analysis overcomes the difficulties associated with comparing businesses of different sizes, as it presents financial numbers in percentages, multiples, or time periods for meaningful comparisons (Berman et al., 2008; Ross et al., 2019).

The role of financial analysis in evaluating the financial strength and profitability strategies of businesses has garnered considerable attention in recent studies (Kotane and Kuzmna-Merlino, 2012; Brendea, 2014; Kubenka, 2016). Firms that evaluate their competitive strategies, profitability, and returns are more likely to outperform firms that do not engage in such evaluations (Dahmen and Rodríguez, 2014). However, financial figures alone may lack informative value in assessing firms' profitability (Hitz, 2007). Moreover, it has been argued that subjectivity in the narrative assessment of a firm's strategies can bias profitability evaluations. Consequently, financial data are often combined with narrative aspects of financial analysis to provide a highly accurate evaluation of a firm's competitive strategies and profitability, which is essential for managerial decision-making (Achim et al., 2016; Deaconu et al., 2016). Therefore, this study adopts a combination of both ratios and narrative elements to provide better insights into assessing businesses' profitability among VET and non-VET graduates, serving as a benchmark for comparing firms' performance.

Based on the factors identified to be constraining profitability performance of MSMEs, there is a pressing need for graduates to focus on a coherent competitive strategic orientation aimed at improving business profitability for their enterprises. As a result, this study aimed at assessing competitive strategies that influence profitability performance among VET and non-VET graduates in Arusha and Dar es Salaam cities, Tanzania. The study's objectives are to determine firms' profitability variables, compare firms' profitability variables, and analyse competitive strategies' influence on firms' profitability among VET and non-VET graduates in the study areas. Based on these objectives, the hypothesis posits that competitive strategies have no significant influence on firms' profitability between VET and non-VET graduates in the study areas.

2. Methodology

This study was conducted in the cities of Dar es Salaam and Arusha in Tanzania. These cities were chosen due to their distinct characteristics, including differences in population size, individuals' income levels, economic activities, and human development between the regions, among other factors (UNDP, URT, and ESRF, 2018). Furthermore, Dar es Salaam, being the largest city, has the oldest VET centers, while Arusha follows Dar es Salaam, among other cities, in terms of social services, public infrastructure, and investments in vocational institutions (VETA, 2010; Wenban-Smith, 2015, cited in Andreasen et al., 2017). As of 2015, Dar es Salaam had the highest number of VET centers, with a total of 75, whereas Arusha had 52 VET centers, more than any other major city in Tanzania (URT, 2016). The assumption underlying this selection was that there would be a higher proportion of self-employed graduates in these two cities compared to other cities in Tanzania.

A cross-sectional research design was employed due to its advantage of enabling data collection at the same time, while examining variables once at a single point in time (Bryman and Bell, 2011). Moreover, it allowed determination of relations between competitive strategy and profitability performance among graduates'

businesses. The study population involved VET graduates and non-VET graduates with different skills who were self-employed in Arusha and Dar es Salaam cities. The unit of analysis was an individual owner of a business under self-employment. The VET graduates were vocational education alumni (treatment), and non-VET graduates (control) were those without vocational education training certification. The choice of the two groups was justified in terms of fairly balanced characteristics such as age, types of business activities, business locations, and formal education, which were determined before piloting the research study. The total of 384 respondents involved in the study was determined by using the following formula by Cochran (1977):

$$n = \frac{z^2 p(1-p)}{\ell^2} \dots\dots\dots (1)$$

Where:

- n = sample size
- z = the abscissa of the normal curve
- p = probability that the selected respondent in the population was a VET graduate
- q = (1-p) probability that the selected respondent in the population was a non-VET graduate
- ℓ = the acceptable sampling error.

Therefore, using p = 0.5 (maximum variability), q = 1-0.5 = 0.5, z = 1.96, at the 95% confidence level and $\pm 5\%$ precision, the resulting sample was as follows:

$$n = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.05)^2} = 384 \dots\dots\dots (2)$$

Therefore, 384 participants were involved in the study.

The respondents were distributed into two equal sizes based on maximum variability, where p = 0.5 and q = 0.5, according to Cochran (1977). One half (192) of the respondents were VET graduates, and the other half (192) were non-VET graduates. Cochran (1977) argues that the formula is appropriate in arriving at an adequate sample size if the population is infinite, and its degree of variability is not known.

Snowball sampling procedure was employed to collect data from individual graduates in Arusha and Dar es Salaam cities for interviews. The procedure enabled accessing respondents who were not easily accessible to the researcher through other sampling strategies (Babbie and Mouton, 2001). Nonetheless, the snowball sampling procedure has some critiques such as non-generalisable results due to the lack of a sampling frame (Morgan, 2008 cited by Kirchherr and Charles, 2018), lack of sample diversity and underrepresentation of respondents in the population (Shaghaghi et al., 2011). However, several studies refute the criticisms and some scholars hold it in high regard. For instance, Creswell (2005) and Noy (2009) argue that the intent of research is not only to generalize results to a population but also to develop an in-depth investigation of a central phenomenon, thereby producing a unique type of social knowledge. Therefore, this paper conceptualizes that competitive strategies have an influence on profitability among self-employed graduates in the two cities to gain a better understanding of the self-employment situation and their competitive strategies in achieving higher profitability among them.

In overcoming some of the snowballing weaknesses, the study used three key methodological approaches recommended to reduce the weaknesses (Creswell, 2005; Kirchherr and Charles, 2018). Among the methods, a key contact list of respondents was obtained from the Directorate of Labour Market Planning and Development (DLMPD) Chang'ombe, Dar es Salaam, colleges, and schools which served as the seeds for the snowball sampling method. The seeds sample sufficiently varied in terms of business categories where nine different businesses were included in the pool of seeds obtained from the respective institutions to solve the diversity and underrepresentation problems. Moreover, a face-to-face interview was conducted for it is claimed by many scholars that they generate trust required to gain referrals and decrease sampling bias (Noy, 2009; Sadler et al., 2010; Shaghaghi et al., 2011).

Quantitative data were collected using a survey approach with a structured questionnaire. From the total sample of 384 respondents, the population of Arusha (1,694,310) and of Dar es Salaam (4,364,541) as per Tanzania national census 2012 (URT, 2013), were used to find proportions of respondents that were determined to be approximately 28%, equivalent to 106 respondents from Arusha and 72%, equivalent to 278 respondents from Dar es Salaam. The first respondent from each of the two cities was obtained through referral and recommendations provided by the representative of the DLMPD at VETA Chang'ombe, Dar es Salaam, Colleges, and Schools. Qualitative data were collected using Key Informant Interviews (KIIs) where a total of four KIIs were held. The key informants (technical and administrative personnel) were selected based on their knowledge of vocational education and non-vocational graduates' employment status. For the institutions that were involved, College Principals, Heads of Academic Departments, and representatives of the DLMPD at VETA Head Office, Dar es Salaam, colleges, and schools were interviewed. Qualitative and quantitative methods of data collection complemented each other and thus increased the overall validity of the study findings through verification of respondents' answers, checking responses for uniformity of one method against the other and within methods, triangulation as recommended by Casey and Murphy (2009). The qualitative approach allowed for an in-depth probing and yielded detailed information (Saunders et al., 2009).

In the determination of variables affecting profitability, profitability ratio analysis was used to evaluate business performance in terms of gross profit margin, cost of goods sold (COGS), operating expenses, net profit margin, and return on capital employed (ROCE). The overall profitability ratio analysis involved the appropriate selection of the ratios and their calculations for the reporting period, based on the formulas and description of the ratios provided in Table 1.

Table 1: Profitability performance ratios

Ratio	Formula	Description
Gross profit margin	$\frac{\text{Sales} - \text{Costs of goods sold}}{\text{Sales}}$	A metric measure which reflects the efficiency with which owners produce and sell each unit of a product or service.
Costs of goods sold	$\frac{\text{Costs of goods sold}}{\text{Sales}}$	Provides sales information which have been consumed by the costs of production.
Operating expenses	$\frac{\text{Operating expenses}}{\text{Sales}}$	Provides information on the number of sales consumed by operating costs.
Net profit margin	$\frac{\text{Net earnings}}{\text{Sales}}$	Provides information on business profitability.
Return on capital employed	$\frac{\text{Net earnings}}{\text{Capital employed}}$	Provides information on earnings achieved for each unit of capital employed in the business.

Source: Adapted and modified from Pandey (2010)

To determine whether or not there was any difference in profitability variables among VET and non-VET graduates, an independent samples t-test was conducted on profitability variables (revenue, cost of goods sold, gross profit, expenses, and net profit) between VET and non-VET graduates. The test was appropriate as the two groups were different in terms of one having a VET qualification, while the other did not have such qualification prior to getting into self-employment. The effect size statistics (Eta squared and Cohen's D) were employed to provide a clue of the extent of the differences between the two groups. Eta squared values range from 0 to 1 which represents the proportion of variance (Pallant, 2011). The interpretation of Eta squared value was made using the guidelines proposed by Cohen (1992) that 0.01 equals a small effect; 0.06 equals a moderate effect, and 0.14 is equivalent to a large effect. The computation of Eta squared is indicated in equation 3.

$$\text{Eta squared} = \frac{t^2}{t^2 + (n_1 + n_2 - 2)} \dots\dots\dots (3)$$

Where:

- t^2 = t-test score
- n_1 = VET graduates sample size (treated group)
- n_2 = non-VET graduates sample size (control group)

Lastly, in analysing the influence of competitive strategies on profitability, three variables were examined: firm profitability, differentiation, and cost-leadership strategies. Profitability encompasses earnings attained by a firm over a specific period of time (Mendoza-Ramirez and Toledo-Lopez., 2014). Thus, in this paper, profitability was measured in terms of net earnings attained by each category of self-employed graduates for the year ended 2017. Differentiation strategy for both categories of graduates was measured on a 5-point index summated scale from one, not important, to five, very important. Cost-leadership strategy for both categories of graduates was measured in terms of respective businesses' product price, production costs, and operational costs. Among the competitive strategies, differentiation strategy in the study was used to measure actions taken by each category of business owner with regard to their perception of offering unique and different products as well as services. Then cost-leadership strategy was measured by actions taken to reduce products/services costs and offer lower selling prices than rivals with the overall aim of improving the firms' profitability. Factor analysis was employed to assess whether or not the differentiation strategic practices would load as expected into Porter's (1980, 1985) generic strategies. By using principal component analysis and Kaiser-Meyer-Olkin (KMO) normalization with a varimax rotation, construct validity was assessed for both categories of graduates' businesses. The results indicated a KMO = 0.836 with a significant Bartlett's test of sphericity ($p < 0.001$) for VET and a KMO = 0.737 with a significant Bartlett's test of sphericity ($p < 0.001$) for non-VET graduates (Table 2). The result for VET graduates explained 60.49% of the variance with an Eigenvalue of 3.02 while 55.34% of the variance with an Eigenvalue of 2.77 was observed among non-VET graduates (Table 2). The results of factor analysis presented in Table 2 were found to conceptually correspond with Porter's (1980, 1985) generic strategy.

Table 2: Construct reliability and validity analysis

Differentiation strategies	VET graduates	Differentiation strategies	Non-VET graduates
Better customer service	0.871	Improved advertising	0.847
Innovation marketing	0.852	Better customer service	0.843
Upgrading of products	0.696	Upgrading of products	0.785
New product offering	0.534	Innovation marketing	0.772
Improved advertising	0.403	New product offering	0.760
Cronbach's Alpha	0.786	Cronbach's Alpha	0.862
Kaiser-Meyer-Olkin	0.836	Kaiser-Meyer-Olkin	0.727
Bartlett's test	0.000	Bartlett's test	0.000
Variance explained	60.487	Variance explained	55.338

Note: The variables loadings for both cases were greater than 0.50 and the Alpha values were greater than 0.60 which are considered reasonable.

In determining the influence of the competitive strategies on firms' profitability, a multiple regression model was adapted since the dependent variables were continuous. The model assumptions, among others, included sample size adequacy, normality, linearity, outliers, and multicollinearity (see Pallant, 2011). Sampling adequacy was tested using Tabachnick and Fidell's (2007) formula for the minimum sample size, given by $50 + 8(m)$, where "m" is the number of variables, and at least there should be 20 responses per variable. Therefore, with 3 independent variables for each category of business, the minimum sample size $(50 + 8(3)) = 74$ was needed. The study used a sample with 359 respondents in total after adjusting for outliers.

Variables were checked for normality using the Kolmogorov-Smirnov (K-S) test for normality; they all indicated significant p values ($p < 0.05$) with a positively skewed distribution. Except for profitability performance for VET graduates, which was transformed using a square root function, all other variables were transformed using a base ten logarithm function as recommended by Field (2018) for transforming positively skewed variables to normal distributions. After transformation, all the variables were checked for normality using the same K-S test; all indicated insignificant p values ($p > 0.05$). All independent variables were checked for correlation among themselves to assess whether they met an acceptable level of multicollinearity ($r \leq 0.80$), as recommended by Field (2018). Moreover, multicollinearity was checked during data analysis by computing Variance Inflation Factors (VIFs) and tolerance levels (Table 5). In both

cases, product price indicated a strong correlation with the production costs variable, and thus, one variable (production cost) was removed from the model. The remaining independent variables were all within the acceptable multicollinearity range. Interpretation of regression results was based on group statistics including Beta coefficients, t-values, R square values, adjusted R square values, F statistics, and significance (p-values). The multiple regression formula employed is given as:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + e \dots\dots\dots (4)$$

- Y = earnings attained by each category of graduate
- a = intercept of the equation
- b₁ ... b₃ = regression coefficients
- x₁ = product price variable
- x₂ = operational cost variable
- x₃ = differentiation variables

3. Findings and Discussion

3.1 Profitability measures among VET and non-VET graduates

In determining business profitability variables among businesses owned by VET and non-VET graduates, ratio analysis was employed, while in comparing profitability performance between the two groups inferentially, an independent samples t-test was used. Lastly, multiple linear regression analysis was employed in identifying competitive strategies variables, which had significant influence on profitability among graduates. The results are as detailed in the next sub-sections.

3.2 Profitability variables comparison using ratio analysis among graduates

Profitability variables that were compared included sales revenue, cost of goods sold, gross profit margin, operating business expenses, and capital employed in businesses. The respective ratios presented in Table 3 were all computed with respect to sales.

Table 3: Profitability and ratio analysis between VET and non-VET graduates

Variable/Ratio	VET (n = 192)		Non-VET (n = 192)	
	Mean (TZS)	Ratio (%)	Mean (TZS)	Ratio (%)
Sales/revenue	10 479 093.8		9 798 908.9	
Costs of goods sold	5 048 026.0	48.2	5 461 526.0	55.7
Gross profit margin	5 431 067.7	51.8	4 335 299.5	44.2
Business expenses	1 958 368.9	18.7	1 782 921.9	18.2
Net earnings	3 075 800.9	29.4	2 278 268.2	23.3
Return on capital employed	4 676 776.0	65.8	4 272 270.8	53.3

Results of the profitability variables analysis using ratios assessed the businesses' ability to generate gross profit margin, control production and operational costs, achieve earnings levels, and efficiently utilise assets relative to firms' revenues. The findings, presented in Table 3, indicate that VET graduates achieved a higher gross profit margin ratio of 51.8% compared to the 44.2% attained by non-VET graduates. The relatively higher gross profit margin for VET graduates suggests that they were able to produce products and services at a lower cost, as evidenced by the costs of goods sold ratio of 48.2% compared to 55.7% for non-VET graduates (Table 3). This indicates that VET graduates were more efficient in producing each unit of product or service sold in the market, compared to their counterparts. While other factors may also contribute to this situation, VET skills and entrepreneurship training integrated into the VET system could be among the reasons that led to lower production costs and improved product and service quality.

The operating expenses ratio provides a measure of a business's operating efficiency. The results in Table 3 indicate that 18.7% of sales were consumed by operating expenses for VET graduates, while 18.2% of sales were consumed by operating expenses for non-VET graduates. Non-VET graduates were slightly better at managing business operating expenses than VET graduates. Both types of firms, however, efficiently managed business expenses, leaving them with sufficient net earnings for survival in the market. Furthermore, the net profit/earnings ratio establishes a relationship between profit and sales and indicates

management's efficiency in production, administration, and selling of products or services. The results in Table 3 indicate that 29.4% of each shilling of sales by VET graduates turned into net profit, compared to 23.3% for non-VET graduates.

Despite a small difference in operating expenses (0.5%) in favour of non-VET graduates, there was a more significant difference in production costs (7.5%) in favour of VET graduates. As a result, VET graduates had a higher net profit per cent of each shilling of sales. This suggests that VET graduates are better equipped to withstand adverse economic situations, such as falling selling prices, rising production costs, or declining demand for products or services, compared to their counterparts. Additionally, VET graduates can make better use of favourable economic conditions, such as rising selling prices or falling production costs, as these would enable them to increase profit levels at a higher rate than non-VET graduates with relatively lower profit margin ratios.

The return on capital employed ratio (ROCE) shows how much profit is generated from each shilling of capital invested in the business. Results in Table 3 indicate that VET graduates generated 65.8% profit for each shilling invested in their business, while non-VET graduates generated 53.3% of profit for each shilling of capital employed in their businesses. This implies that VET graduates were more efficient in utilising the capital at their disposal than non-VET graduates. This efficiency can likely be attributed to the vocational skills and entrepreneurship training integrated into the VET curricula, enabling VET graduates to make better use of the assets they own in generating more revenues and, consequently, realising profits for their businesses.

The findings from this study shed light on the role of vocational education and training in wealth creation and poverty reduction as Tanzania continues to implement its industrialisation agenda. The relatively higher mean net income among VET graduates compared to non-VET graduates indicates the importance of technical skills acquired by VET graduates in transforming various sectors of the economy in rural and urban areas through self-employment. This is attributed to the VET technical training and skills acquired, which enhance better production techniques. According to Cedefop (2011), well-established VET and apprenticeship systems lead to higher returns among VET graduates. Given that the results for self-employed VET graduates were better than those of non-VET graduates, it implies that the VET systems in the two cities are fairly well-established to warrant higher returns, as informed by Cedefop (2011).

3.3 Net profit variables comparison among VET and non-VET graduates

In order to compare whether the mean net profits differ or not between VET and non-VET graduates, an independent samples t-test was performed. Moreover, for variables that affect net profits, other independent samples t-tests were conducted on means for sales revenue, costs of goods sold, gross profit margin, and business operating expenses to determine any differences in means of those variables between the two groups and the effects of those variables on business net profits for businesses owned by both graduates' categories. As indicated in Table 4, VET graduates reported numerically slightly higher means for net profit margin, gross profit margin, sales revenue, and operating expenses but lower mean for costs of goods sold than non-VET graduates. A confidence test score for the variables was conducted between both groups conducting different types of businesses in Arusha and Dar es Salaam cities. Table 4 presents the results of the independent samples t-test between the two groups.

Table 4: Independent samples t-test results on profitability variables

Variable	Category of graduates	n	Log of mean profitability variable	Log of Standard deviation	Levine's test for equality of variance		t-test for equality of means		
					F	Sig	t	df	sig
Sales	VET	185	6.794	0.375	0.293	0.588	1.67	367	0.096
	Non-VET	184	6.727	0.396					
Cost of goods sold	VET	185	6.386	0.479	0.035	0.851	-0.539	369	0.590
	Non-VET	186	6.412	0.471					
Gross profit	VET	188	6.542	0.349	0.655	0.419	2.888	373	0.004*
	Non-VET	187	6.434	0.373					
Expenses	VET	186	6.055	0.477	1.199	0.274	1.235	370	0.218
	Non-VET	186	5.993	0.499					
Net profit	VET	183	6.275	0.344	2.631	0.106	2.857	369	0.005*
	Non-VET	183	6.169	0.374					
Return on Capital Employed	VET	186	6.285	0.350	0.427	0.514	2.307	370	0.022*
	Non-VET	186	6.129	0.364					

* Significantly different at the 5% level of significance

Since the distributions of VET and non-VET graduates were positively skewed, a base ten logarithm function was used to transform the variables, as recommended by Field (2018). The resulting distributions were sufficiently normal for the purpose of conducting t-tests, with the skewness and kurtosis falling within the acceptable range ($|skew| < 2.0$ and $|kurtosis| < 9.0$) (Schemider et al., 2010). In addition, the assumption of homogeneity of variance was not violated; the Levine's F-test, $F(369) = 2.631$, $p = 0.106$, for net earnings and other variables used in the computation of net profit, as indicated in Table 4. This shows that the variances of the two populations were approximately equal, and thus, the standard t-test was appropriate.

The results of the independent samples t-test were associated with a significant effect on net profit margin, $t(369) = 2.857$, $p = 0.005$. Thus, VET graduates had higher business earnings ($n = 183$, $M = 6.275$, $SD = 0.334$) in comparison to business earnings observed among non-VET graduates ($n = 183$, $M = 6.169$, $SD = 0.374$) (Table 4). However, Cohen's d was estimated at 0.022, indicating that the group means differed by 0.022 standard deviations, which is considered a small effect size based on Cohen's (1992) guidelines. The independent samples t-test results for variables used in the computation of net profit indicated that there were no significant differences in means for sales revenue, cost of goods sold, and business operating expenses between VET and non-VET graduates, as indicated in Table 4. However, the results of the independent samples t-test on gross profit margin indicated a significant difference, $t(373) = 2.888$, $p = 0.004$ (Table 4), which implies that the mean gross profit margin for VET graduates ($n = 188$, $M = 6.542$, $SD = 0.349$) was significantly higher than the mean gross profit margin observed from non-VET graduates ($n = 187$, $M = 6.434$, $SD = 0.373$). The results provide more information that the observed differences in profitability were partly due to higher gross profit margins attained by VET graduates in comparison to gross profit margin attained by non-VET graduates.

Furthermore, the independent samples t-test results on ROCE show a significant difference, $t(370) = 2.307$, $p = 0.022$ (Table 4), implying that the mean ROCE for VET graduates ($n = 186$, $M = 6.285$, $SD = 0.350$) was significantly higher than the mean ROCE observed from non-VET graduates ($n = 186$, $M = 6.129$, $SD = 0.364$). Based on these results, there is enough evidence that the mean net profits for VET differed significantly from the mean net profits for non-VET graduates.

3.4 Relationships between competitive strategies and firms' profitability

To test the hypothesis that competitive strategies have no significant influence on firms' profitability between VET and non-VET graduates, a multiple linear regression analysis was employed. Among the independent variables, product pricing was highly correlated with production cost beyond the acceptable correlation of 0.80 (Table 5). Thus, the production variable was removed from the list of variables for

multiple regression analysis. Results in Table 5 show that businesses owned by the graduates had an $R = 0.676$ (67.6%), an $R^2 = 0.457$ (45.7%), an adjusted $R^2 = 0.452$ (45.2%), and $p = 0.000$. The results show that the overall fit of the models was statistically significant ($p = 0.000$), indicating that the model had enough explanatory power to predict the influence of competitive strategies on profitability performance for businesses owned by VET and non-VET graduates. The coefficient of determination ($R^2 = 0.452$) implies that the variables entered into the model accounted for 45.2% of the influence of competitive strategies on firms' profitability.

To examine the hypothesis that competitive strategies exert no significant influence on firms' profitability between VET and non-VET graduates, a multiple linear regression analysis was conducted. Due to high correlation beyond the acceptable threshold of 0.80 (Table 5) between product pricing and production cost, the production variable was excluded from the list of independent variables for the multiple regression analysis. The results presented in Table 5 indicate that businesses owned by the graduates yielded an R of 0.676 (67.6%), an R^2 of 0.457 (45.7%), an adjusted R^2 of 0.452 (45.2%), and $p = 0.000$. These findings demonstrate that the overall fit of the models was statistically significant ($p = 0.000$), indicating that the model possessed sufficient explanatory power to predict the influence of competitive strategies on the profitability performance of businesses owned by VET and non-VET graduates. The coefficient of determination ($R^2 = 0.452$) implies that 45.2% of the variation in firms' profitability can be explained by the variables included in the model.

Table 5: Influence of Competitive Strategies on Profitability Performance

Independent Variables	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	β	S. E	β	t	Sig.	VIF	Tolerance
Constant	2.320	0.240		9.669	0.000		
Product price	0.524	0.050	0.579	10.441	0.000	2.008	0.498
Operation costs	0.085	0.040	0.118	2.132	0.034	2.008	0.498
Differentiation	0.077	0.028	0.106	2.714	0.007	1.000	1.000

Dependent variable = firm profit; $R = 0.676$; adjusted $R^2 = 0.452$; ANOVA: MD = 6.239; $F = 99.567$; $p = 0.000$

The multiple linear regression results revealed that a combination of both cost-leadership (product pricing and operational costs) and differentiation scale (existing product upgrade, new product offering, improved advertising, innovation marketing, and customer service) strategies significantly and favourably contributed to the profitability performance of firms owned by graduates ($p < 0.05$). Product competitive pricing exhibited the highest influence on firm profitability performance ($\beta = 0.579$), followed by operational costs ($\beta = 0.118$) and differentiation strategy scale ($\beta = 0.106$). These findings imply that as both categories of graduates increased product price by one unit, business profitability increased by 0.579 units, while a unit increase in brand differentiation scale resulted in a 0.106 unit increase in firm profitability, with the respective other predictor variables held constant. However, a decrease of one unit in operational expenses led to a 0.118 decrease in firm profitability performance. Thus, achieving optimal firm profitability performance necessitates striking a balance between individual strategic practices and the required profitability levels for both graduates' businesses.

In this section the influence of firms' competitive strategies on profitability were examined. Several notable findings provide evidence of the influence of competitive strategies (cost-leadership and brand differentiation) on profitability performance. Both categories of businesses indicated a greater emphasis on cost-leadership strategy by managing product pricing and operational costs to achieve the desired level of profitability. As indicated in the findings presented in Tables 5, product pricing strategy exhibited a strong link with firms' profitability. It is not surprising that graduates strived to use low-cost operational facilities and low-cost labour to reduce operating costs while charging competitive prices to ensure their products were sold to the final consumers. These findings are consistent with the narratives provided by a key informant who was a VET student on practical training at a welding workshop at Chang'ombe in Dar es Salaam City, who pointed out that:

"During my practical training programme at the workshop, despite working from morning to the evening, I am not paid anything by the owner. Rather, it is covered in the VET training fee structure paid by my parents during the whole period of my practical training..." (VET student-Chang'ombe, March, 2018).

Previous studies such as Allen and Helms (2006), Amoako-Gyampah and Acquah (2008), Li et al. (2009), Granados et al. (2019), Tavalaei and Santalo (2019) and Sandberg et al. (2023) have reported similar findings, indicating that combining cost-leadership and differentiation strategic practices positively influence firms' performance in terms of sales, production, and profitability growth. This combination of strategies is known as the hybrid strategy, an evolving method that integrates cost-leadership and differentiation for improved firm performance that cannot be achieved by using a single strategy alone. This approach allows firms owned by graduates to be more flexible and respond appropriately and timely to ever-changing market conditions, gaining competitive advantage in the marketplace (Almeida et al., 2022; Angeles et al., 2022).

The firm's competitive strategy concerning brand differentiation showed a significant influence on firms' profitability among firms owned by the graduates. The probable reasons for this could be related to the fact that both VET and non-VET graduates consider product differentiation an essential aspect for their products to succeed in the market. Aspects related to upgrading existing product quality, offering new products based on market demand, ensuring product visibility to customers, and providing excellent customer services are among the critical aspects of differentiation strategy that influence firms' profitability. Additionally, obtaining quality certifications from authorities such as the Tanzania Bureau of Standards (TBS) or other available standards is of paramount importance for profitability performance of both graduates. Consistent product quality is expected to make their products more attractive to final consumers and differentiate them better compared to firms without such certifications. This is likely to create brand loyalty among customers and, consequently, repeated purchases, further increasing business profitability performance.

3.5 Theoretical results

As expected from Porter's (1980, 1985) theory of competitive strategy, a strong association existed between competitive strategies and firms' profitability for both categories of graduates' businesses. Both cost-leadership and differentiation strategies influenced profitability for firms owned by both graduates. Among the cost-leadership strategies, product price was observed to have the highest influence on profitability, followed by business operational costs. On the other hand, differentiation strategy had the lowest contribution to profitability, possibly because non-VET graduates lack entrepreneurship training, while VET graduates acquire aspects of differentiation strategies and integrate them into their businesses more effectively compared to non-VET graduates, who have little knowledge in this area.

4. Conclusion and Recommendations

Based on the results of the ratio analysis, it can be concluded that firms owned by VET graduates perform better than firms owned by non-VET graduates in terms of profitability variables, except for operational costs. Therefore, it is recommended that interventions aimed at improving firms' profitability for graduates' businesses should focus more on enhancing the variables that yield maximum profitability for each category of graduates' businesses. Given that the gross profit and net profit of VET graduates are significantly higher than those of non-VET graduates, it is suggested that VET graduates are better able to manage product prices and control production costs compared to non-VET graduates. Therefore, efforts to improve competitive product pricing and cost control among graduates should be strengthened. This can be achieved by conducting basic marketing research in the market to compare prices and costs with those of competitors, in order to strike a balance that leads to optimal profitability.

Furthermore, it can be concluded that both categories of graduates implement both cost-leadership and differentiation strategies to influence their firms' profitability levels. Thus, it is recommended that more efforts should be invested in improving the necessary requirements for setting competitive prices and reducing operational costs across all areas of their business operations. Additionally, both categories of

graduates should focus on managing differentiation strategy variables, such as ensuring better product quality and implementing effective marketing activities, among others. Building appropriate capabilities in these areas should be given priority consideration. Moreover, stakeholders like the Tanzania Bureau of Standards (TBS) should play a role by providing product quality certifications for graduates' products, as this can differentiate them in the market and lead to increased profitability compared to firms without such certifications.

References

- Achim, M., Borlea, S. & Gaban, L. (2016). Failure prediction from the investors view by using financial ratios. Lesson from Romania. *Economics and Management*, 19(4): 117-133. DOI: 10/15240/tul/2016-4-009.
- Acquaah, M. (2011). Business strategy and competitive advantage in family business in Ghana: The role of social networking relationships. *Journal of Development Entrepreneurship*, 16(1): 103-126.
- Acquaah, M., & Yasai-Ardekani, M. (2008). Does the implementation of a combination competitive strategy yield incremental performance benefits? A new perspective from a transition economy in Sub-Saharan Africa. *Journal of Business Research*, 61(4): 346–354. DOI: 10.1016/j.jbusres.2007.06.021
- Allen, R.S & Helms, M.M. (2006). Linking strategic practices and organizational performance to Porter's generic strategies. *Business process Management Journal*, 12(4): 433-454. DOI: 10.1108/14637150610678069.
- Almeida, M. C., Yoshikuni, A. C., Dwivedi, R., & Larieira, C. L. C. (2022). Do leadership styles influence employee information systems security intention? A study of the banking industry. *Global Journal of Flexible Systems Management*, 23(4): 535-550.
- Amoako-Gyampah, K & Acquaah, M. (2008). Manufacturing strategy, competitive strategy and firm performance: An empirical study in a developing environment. *International Journal of Production Economics*, 111(2): 575-592. DOI: 10.1016/j.ijpe.2007.02.030
- Anand, J., Brenes, E., Karnani, A., & Rodriguez, A. (2006). Strategic responses to economic liberalisation in emerging economies: lessons from experience. *Strategic Management Journal*, 59: 365–371.
- Andreasen, M. H., Agergaard, J., Kiunsi, R. B., & Namangaya, A. H. (2017) Urban transformations, migration and residential mobility patterns in African secondary cities. *Geografisk Tidsskrift-Danish Journal of Geography*, 117(2): 93-104. DOI: 10.1080/00167223.2017.1326159.
- Angeles, A., Perez-Encinas, A., & Villanueva, C. E. (2022). Characterizing organizational lifecycle through strategic and structural flexibility: insights from MSMEs in Mexico. *Global Journal of Flexible Systems Management*, 23(2): 271–290.
- Babbie, E., & Mouton, J. (2001). *The practice of social research*. Cape Town: Oxford University Press.
- Banker, R., Mashruwala, R., & Tripathy, A. (2014). Does a differentiation strategy lead to more sustainable financial performance than a cost-leadership strategy? *Management Decision*, 52(5): 872-896. DOI: 10.1108/08876049110035459.
- Bayraktar, C., Hancerliogullari, G., Centinguc, B., & Calisir, F. (2017): Competitive strategies, innovation and firm performance: an empirical study in developing economy environment. *Technology Analysis and Strategic Management*, 29 (1): 38-52.
- Berman, K., Joe Knight., & John C. (2008). *Financial intelligence for entrepreneurs: What you really need to know about the numbers*. Boston: Harvard Business Press.
- Brendea, G. (2014). Financing Behaviour of Romanian Listed Firms in Adjusting to the Target Capital Structure, *Czech Journal of Economics and Finance*, 64 (4): 312-329.
- Bryman, A., & Bell, E. (2011). *Business research methods* (3rd ed.). New York: Oxford University Press Inc.
- Casey, D., & Murphy, K. (2009). Issues in using methodological triangulation in research. *Nurse Researcher*, 16(4): 40-55. DOI: 10.7748/nr/2009.07.16.4.40.c7160.
- Cedefop. (2011). The benefits of vocational education and training. http://www.cedefop.europa.eu/files/5510_en.pdf
- Chatzoglou, P., Chatzoudes, D., Sarigiannidis, L. & Theriou, G. (2018). The role of firm-specific factors in strategy-performance relationship: revisiting the resource-based view of firm and the VRIO framework. *Management Research Review*, 41(1): 46-73. DOI: 10.1108/MRR-10-2016-0243.
- Cochran, W. (1977). *Sampling techniques* (3rd ed.). New York: Wiley.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112: 155-159.

- Creswell, J. (2005). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River: Pearson Publication.
- Dahmen, P., & Rodríguez, E. (2014). Financial Literacy and the Success of Small Businesses: An Observation from a Small Business Development Centre, *Numeracy*, 7(1): 1-12.
- Deaconu, A., Crisan, S. & Buiga, A. (2016). Value allocation – contribution and risk to the reliability of financial reporting. *Economics and Management*, 19(2): 105-119. DOI: 10.15240/tul/001/2016-2-007.
- Diao, X., Kweka, J., McMillan, M & Qureshi, Z. (2020). Economic transformation in Africa from bottom up: new evidence from Tanzania. *The World Bank Economic Review*, 34: S58-S62. DOI: 10.1093/wber/lhz035
- Drahokoupil, J. (2014). Decision-making in multinational corporations: Key issues in international business strategy, transfer. *European Review of Labour and Research*, 20(2): 199-215.
- Field, F. (2018). *Discovering statistics using IBM SPSS (5th ed.)*. London: SAGE Publications.
- Granados, H.; Coronado S., & Toledo, A. (2019). Market forces, competitive strategies and small business performance: Evidence from Mexico's low-income market. *Contaduría y Administración*, 64(4): 1-27. DOI: 10.22201/fca.24488410e.2018.2037
- Gupta, S., Polonsky, M., Woodside, A., & Webster, C. M. (2010). The impact of external forces on cartel network dynamics: Direct research in the diamond industry. *Industrial Marketing Management*, 39(2): 202–210. DOI: 10.1016/j.indmarman.2008.11.009.
- Hernandez-Perlines, F., Moreno-Garcia, J & Yanez-Araque, B. (2016). The mediating role of competitive strategy in international entrepreneurial orientation. *Journal of Business Research*, 69(11): 5383-5389.
- Hitz, J.M. (2007). The decision usefulness of fair value accounting – A theoretical perspective. *European Accounting Review*, 16(2): 323-362.
- Hoskisson, R.E., Ireland, R.D., & Hitt, M.A. (2011). *Strategic management: competitiveness and globalization*, (9th ed.). Mason, OH: South-Western Cengage Learning.
- Hyatt, L. (2008). A simple guide to strategy, nursing homes. *Nursing Journal*, 50(1): 12-13
- Ingenbleek, P., Tessema, W., & Van Trijp, H. (2013). Conducting field research in subsistence markets, with an application to market orientation in the context of Ethiopian pastoralists. *International Journal of Research in Marketing*, 30(1): 83–97. DOI: doi.org/10.1016/j.ijresmar.2012.11.003
- Kanaan, O. (2000). Tanzania's experience with trade liberalisation, finance and development. International Monetary Fund. https://www.elibrary.imf.org/view/IMF022/14228-9781451952827/14228-9781451952827/14228-9781451952827_A008.xml?redirect=true
- Kang, W., & Montoya, M. (2014). The impact of product portfolio strategy on financial performance: The role of product development and market entry decisions. *Journal of Product Innovation Management*, 31(3): 20-39.
- Kanyagia, K.R. (2015). Competitive positioning strategies in response to changing rice demand patterns in Kenya. *International Journal of Scientific and Research Publication*, 5(10): 1-16.
- Kirchherr, J. & Charles, K. (2018). Enhancing the sample diversity of snowball samples: Recommendations from research project on anti-dam movements in Southeast Asia. *PLoS ONE*, 13(8): e0201710. DOI: 10.1371/journal.pone.0201710.
- Kotane, I., & Kuzmina-Merlino, I. (2012). Assessment of financial indicators for evaluation of business performance. *European Integration Studies*, 6: 216-224. DOI: 10.5755/j01.eis.0.6.1554
- Kubenka, M. (2016). *The strictness of traditional indicators for creditworthiness measuring: international days of statistics and economics 2016*. Prague: University of Economics, 985-995.
- Li, J., Zheng, K., & Shao, A. (2009). Competitive position, managerial ties, and profitability of foreign firms in China: an interactive perspective. *Journal of International Business Studies*, 40: 339-352. DOI: 10.157/jibs.2008.76.
- London, T., & Hart, S. (2004). Reinventing strategies for emerging markets: beyond the transnational model. *Journal of International Business Studies*, 35(5): 350–370. DOI: 10.1057/palgrave.jibs.8400099
- Malburg, C. (2007). Competing on costs. *Industry week*, 249(17): 31-35.
- Mendoza-Remirez., & Toledo-Lopez, A. (2014). Strategic orientation in handicraft subsistence businesses in Oaxaca, Mexico. *Journal of Marketing Management*, 30(5-6): 476-500.

- Mkubwa, H., Mtengwa, B., & Babiker, S. (2014). The impact of trade liberalisation on economic growth in Tanzania. *International Journal of Academic Research in Business and Social Sciences*, 4(5): 514-532. DOI: 10.6007/IJARBS/v4-i5/879.
- Myšková, R., & Hájek, P. (2017). Comprehensive assessment of firm financial performance using financial ratios and linguistic analysis of annual reports. *Journal of International Studies*. 10(4): 96-108.
- Noy, C. (2009). Sampling knowledge: the hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology*, 11(1): 327-344.
- Owolabi, S., & Obida, S. (2012). Liquidity management and corporate profitability: case study of selected manufacturing companies listed on the Nigerian Stock Exchange. *Business Management Dynamics*, 2(2): 10-25.
- Pallant, J. (2011). *SPSS survival manual: A step by step guide to data analysis using SPSS*, Crow's Nest: Allen & Unwin.
- Pandey, I. (2010). *Financial Management* (10th ed.). Delhi: Vikas Publishing.
- Porter, M.E. (1980). *Competitive strategy: techniques for analysing industries and competitors*. New York: Free Press.
- Porter, M.E. (1985). *Competitive advantage: creating and sustaining superior performance*. New York: Free Press.
- Ross, S., Westerfield, R., & Jordan, B. (2019). *Fundamentals of Corporate Finance* (12th ed.). New York: McGraw-Hill.
- Rothaermel, F. T. (2017). *Strategic management*. New York: McGraw-Hill.
- Sadler, G., Lee, H., Lim, R., & Fullerton, J. (2010). Recruitment of hard-to-reach population subgroups via adaptations of the snowball sampling strategy. *Nurse Health Science*, 12(3): 369-374.
- Sandberg, H., Alnoor, A., & Tiberius, V. (2023). Environmental, social, and governance ratings and financial performance: evidence from the European food industry. *Business Strategy and the Environment*, 32(4): 2471-2489.
- Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students* (5th ed). New York: Pearson.
- Schemider, E., Ziegler, M., Danay, E., Beyer, L., & Buhner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumptions and methodology. *European Journal of Research Methods for behavioural and Social Sciences*, 6: 147-151.
- Shaghghi, A., Bhopal, R.S., & Sheikh, A. (2011). Approaches to recruiting "hard-to-reach" populations into research: a review of literature. *Heal Promote Perspective*, 1(2): 355-366.
- Spanos, Y. E., Zaralis, G., & Lioukas, S. (2004). Strategy and industry effects on profitability: evidence from Greece. *Strategic Management Journal*, 25(2): 139-165. DOI: 10.1002/smj.369.
- Tabachnick, G., & Fidell, S. (2007). *Using multivariate statistics*. New York: Allyn and Bocon.
- Tabari, N., Ahmadi, M. & Emami M. (2013). The effect of liquidity risk in the performance of Commercial banks. *International Research Journal of Applied and Basic Sciences*, 4(6): 1624-1631.
- Tavalaei, M. M., & Santalo, J. (2019). Pure versus hybrid competitive strategies in the airport industry. *Transportation Research Part a: Policy and Practice*, 124: 444-455.
- Toledo, A., Hernández, J., & Griffin, D. (2010). Incentives and the growth of Oaxacan subsistence businesses. *Journal of Business Research*, 63(6): 630-638. DOI: 10.1016/j.jbusres.2009.03.021.
- Uçmak, F., & Arslan, C. (2012). The impact of competition conditions on new market entrants in Istanbul hotel industry: an analysis by using five forces of competitive position model of M. Porter. *Procedia-Social and Behavioral Sciences*, 58: 1037-1046. DOI: 10.1016/j.sbspro.2012.09.1084.
- UNDP, URT & ESRF (2018). *Tanzania human development report 2017: social policy in the context of economic transformation*. Dar es Salaam: Economic and Social Research Foundation.
- URT (2003). *Small, and medium enterprises development policy*. Dar es Salaam: Ministry of Industry and Trade.
- URT (2013). *2012 Population and housing census*. Dar es Salaam: National Bureau of Statistics.
- URT (2016). Number of graduates from vocational training centres and folk development colleges. <http://opendata.go.tz/dataset/idadi-ya-wahitimu-katika-vyuo-vya-ufundi-stadi-na-vyuo-vya-maendeleo-ya-wananchi>.
- VETA (2010). *Report of the tracer study for 2004-2009 graduates of vocational education and training of Tanzania mainland*. Dar es Salaam: VETA.

- Voola, R., Carlson, J., & West, A. (2004). Emotional intelligence and competitive advantage: examining the relationship from a resource-based view. *Journal of Strategic Change*, 13: 83-93. DOI: 10.1002/jsc.667.
- Widuri, R., & Sutanto, J. (2018). Differentiation strategy and market competition as determinants of earnings management. *Advances in Economics, Business and Management Research*, 69: 1-6. <https://download.atlantis-press.com/article/55911637.pdf>.
- Wu, P., Gao, L. & Gu, T. T. (2015). Business strategy, market competition and earnings management: evidence from China. *Chinese Management Studies*, 9(3): 401-424.



EFFECTIVENESS OF MICROCREDITS PROVISION BY WOMEN DEVELOPMENT FUND ON ENHANCING HOUSEHOLD WELLBEING IN TANGA CITY, TANZANIA

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ABSTRACT

The Women Development Fund, like other microcredit models, aims to uplift women who lack adequate access to financial services for the enhancement of their well-being. Its objective is to break the vicious cycle of poverty by facilitating income-generating activities, thereby increasing household income and expenditure. However, the actual effectiveness of WDF microcredits on enhancing well-being remains inadequately analysed. This study aimed at evaluating the effectiveness of the Women Development Fund microcredits on household well-being in Tanga City. The analysis was guided by the null operational hypothesis that the microcredits provided by WDF have no significant positive effect on household well-being in the City. A cross-sectional design was employed, and 100 female beneficiaries were selected as the sample size. Questionnaires, interviews, and focus group discussions were utilised as data collection tools. Results indicate that the percentage of Women Development Fund microcredits explains 56% of the variation in income and 61% in expenditure. It is concluded that Women Development Fund microcredits have a significant positive impact on household well-being, particularly with respect to settlement and children's education. However, the impact on medication and health was found to be insignificant (Wald Chi2 (09) = 11.0 for medication/health, Wald Chi2 (09) = 10.03 for settlement, and Wald Chi2 (09) = 10.03 for children's education). Therefore, it is recommended that the government and other stakeholders strengthen the WDF, increasing access to microcredits and implementing single-digit interest rates.

Keywords: Financial services, Microcredits, Microcredits provision, Women Development Fund, Household wellbeing.

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

Microcredit programs is a vital facet of the global development landscape, emerged in the mid-1970s as a means to empower marginalised communities. Notably, the Grameen model in Bangladesh, devised by Dr. Mohamed Yunus in 1976, exemplifies this initiative. With its focus on providing loans to landless individuals, the Grameen model has proven successful, currently serving over 2.4 million clients, with 94% being women (Ledgerwood, 1999). Following its triumph in Bangladesh, this approach has been replicated in diverse developing nations, particularly in uplifting women. Furthermore, Banco Solidario (Bancosol) in Bolivia, a private bank established in 1992 from the NGO PRODEM, stands as another effective microcredit model (Robinson, 1996; Zeller et al., 2000).

However, despite such success stories, many African countries continue to witness women's marginalisation in terms of access to capital and credit facilities. Yet, exceptions exist, such as the Kenya Rural Enterprise Programme (K-Rep), which has witnessed remarkable achievements including decreased



loan cost per shilling, increased repayment rates, and substantial revenue generation. Tanzania too boasts a triumphant microfinance endeavours, PRIDE Tanzania, which has tripled loan volume and maintains a loan repayment performance of 99% (Paschal, 1988 cited in Makombe et al., 1999).

In Tanzania, government-backed initiatives like the Women's Development Fund (WDF) strive to foster women's economic empowerment. Established in 1993 through the Exchequer and Audit Ordinance of 1961, the WDF aims to provide low-interest loans to women, facilitated by the government and local authorities (URT, 2000). This initiative aligns with broader policies and strategies addressing gender equity and poverty eradication (Lumid, 2012; URT, 2013). While microcredit initiatives worldwide, including those from the WDF, aim to enhance household well-being, a comprehensive assessment of the WDF's effectiveness in this regard remains a significant research gap.

This study addressed this gap by analysing the effectiveness of credit provision by the Women's Development Fund in enhancing household well-being in Tanga City, Tanzania. Drawing on Sen's (1993) notion of "well-being freedom," the study investigated how microcredit influences household well-being through increased income, improved living conditions, better health, and enhanced education opportunities. Through an in-depth examination of the WDF's credit model, this research aims to contribute to the understanding of microcredit's impact on household well-being. The subsequent sections delve into the theoretical framework, methodology, results, and implications of this investigation.

2. Theoretical Framework

The theoretical framework underpinning this study is the Solidarity Circle Theory, conceptualised by Muhammad Yunus, a pioneering figure in microcredit, and epitomised by the Grameen Bank's success in the 1970s within Bangladesh. This theory is highly relevant to the investigation of the effectiveness of microcredit provision by the Women Development Fund (WDF) in enhancing household well-being in Tanga City, Tanzania. Yunus recognised the challenges faced by impoverished individuals in accessing credit, and in response, devised a credit program based on group lending, a departure from traditional financial institutions' collateral-based approach (Ledgerwood, 1999). The WDF too, adopted a group lending model, whereby women were organised into small entrepreneurial circles of 5 to 7 members, collectively accessing loans from the fund. The essence of this theory hinges on the idea that group lending fosters a sense of solidarity and mutual responsibility among borrowers, significantly curbing the likelihood of loan default.

In the context of this study, the Solidarity Circle Theory holds several implications, each bearing relevance to the investigation's objectives. Firstly, the theory emphasis on group dynamics and mutual support aligns with the WDF's aim to serve women who lack access to mainstream financial institutions. The collective nature of the model resonates with the WDF's focus on fostering empowerment through women's collaborative efforts, in contrast to profit-driven motives. Secondly, the theory's proposition of minimising loan delinquency underscores the potential impact on household well-being. By investigating the application of this theory within the WDF's microcredit approach, the study delves into whether this mechanism indeed leads to enhanced household well-being, as loans granted under a collective framework are postulated to have a lower risk of default. Furthermore, the Solidarity Circle Theory's premise of using social assets to cover defaults instead of physical collateral is pertinent to the context of marginalised women beneficiaries in Tanga City. It provides a lens through which to explore how social support networks within these circles influence loan repayment behaviours and subsequently contribute to the well-being of not just individual households but the collective unit as well.

Therefore, the Solidarity Circle Theory constitutes an essential foundation for understanding the mechanisms at play in the WDF's microcredit provision. Its emphasis on collective responsibility, mutual support, and risk-sharing aligns with the study's objectives of assessing the effectiveness of microcredits in enhancing household well-being. Through the lens of this theory, the study examines how the WDF's approach resonates with Yunus's pioneering concepts and whether its application leads to positive outcomes for marginalised women in Tanga City.

3. Methodology

This study was conducted in Tanga City, which is one of the 11 councils in Tanga Region. It is located along the Indian Ocean approximately 350 km by road to the north of the commercial capital city of Dar es Salaam. The city was selected because it has economically active women involved in income-generating activities and the city is involved in microcredits provision. Furthermore, the choice is due to the cultural, customary, and religious factors in the coastal areas where societies do not readily support women's efforts to be involved in microcredit services. The study adopted a cross-sectional research design. This design allowed the researcher to collect data at one point in time from different places (Kothari, 2009). Data were collected from 10 randomly selected wards in Tanga City Council. From each ward, 10 respondents were involved, resulting in a total of 100 respondents as the sample size selected from 6775 borrowers of WDF in the city. The sample size was computed using Yamane's formula of 1967.

Sample size of respondents from WDF borrowers.

$$S = \frac{N}{1 + N(e)^2}$$

$$\text{Thus, } S = \frac{6775}{1 + 6775(0.1)^2} = 98.7 \quad S=99$$

Where S=Sample size, N=women population receiving loans from WDF and e= level of precision or error.

The survey method using a questionnaire was employed as the data collection tool. A quasi-experiment control group approach with a pretest-posttest design was selected to evaluate the effectiveness of WDF microcredits on socioeconomic indicators reflecting household wellbeing. The data collected through questionnaire were organised, coded, and analysed using SPSS. Descriptive statistics such as percentages and frequencies, as well as inferential statistics such as ordinary least regression (specified in equation (1)) and binary logistic regression (given in equation (2)), were used for analysis.

Regarding ordinary least square (OLS) regression the model was as written in equation 1.

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_9 X_9 \dots\dots\dots (1)$$

Where: \hat{Y} = Income (TZS) (dependent variables).

Where: \hat{Y} = Expenditure (TZS) (dependent variables).

β_0 = Constant; β_1 to β_9 = regression coefficients of the predictor variables (independent variable)

$X_1, X_2, X_3 \dots\dots\dots X_n$ = Factors affecting effectiveness of microcredit to enhance income or expenditure women beneficiary of microcredits (independent variables).

n = numbers (any factors/all factors).

The factors are X_1 = loan holder, X_2 =Age, X_3 = Marital status, X_4 = Women education, X_5 = Household size, X_6 = Other sources of income, X_7 =Times received loan, X_8 =Amount of loan received, X_9 =Years since loan received.

Regarding binary logistic regression the model was as written in equation 2. In practice, both the logit and probit models yield estimated choice probabilities that differ by less than 0.02, making them statistically indistinguishable with small sample sizes (Aldrich and Nelson, 1990). Consequently, there is little to guide the choice between the two (logit model and probit model). Therefore, the selection of the model specification remains fairly arbitrary, taking into consideration practical concerns such as the availability and flexibility of computer programs and personal preference and experience (Aldrich and Nelson, 1990). According to Madalla (1983, 1989) the choice between probit and logit models often comes down to convenience. As a result, both models have been widely used in various studies, but for this study, the logit regression was employed as we found it convenient.

The null operational hypothesis, which was that each of hypothesised determinants of the credit provided by WDF has no significant effectiveness for enhancing positively or negatively the household wellbeing in the Tanga city, was tested using binary logistic regression model since such a model is ideal for such

variables. According to Hosmer and Lamesow (2000); Powers and Xie (2000) the model was specified as follows:

$$\text{Logit}(\pi) = \log(P/1-P) = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_k X_k \quad (2)$$

Where:

Logit(π) = In (odds/event), that is the natural log of the odds of an event occurring.

π = Prob (event), that is the probability that the event will occur

$1-\pi$ = Prob (event), that is the probability that the event will not occur

b_0 = constant of the equation

b_1 to b_k = Coefficients of independent/predictor/response variables

k = Number of independent variables

X_1 to X_k = independent variables entered in the model are as shown in Table 1

The dependent variable in this study was a dummy variable representing the effectiveness of enhancing household wellbeing in terms of settlement, children's education, and health/medical aspects. A value of 1 was assigned if the household wellbeing was positively enhanced, and a value of 0 was assigned if the household wellbeing was not enhanced or had a negative impact. The regression analysis aimed to examine the contribution of nine independent variables on the dependent variable. The dependent variable encompassed three wellbeing aspects: settlement, health/medical, and education. These aspects were considered as key indicators of household wellbeing.

Table 1: Independent variables entered in Binary Logistic regression model

Independent variable	Types of variable	Explanation of variables
X_1 loan holder	Dummy	Experienced (old) = 1, New = 0
X_2 Age	Continuous	Active 31 -44 years= 1, Other ages = 0
X_3 Marital status	Dummy	Married =1, Other status= 0
X_4 Women Education	Dummy	Formal education = 1, No formal education= 0
X_5 Household size	Continuous	$\geq 9 = 1$, Less than 9 = 0
X_6 Other sources of income	Dummy	Possess = 1, Not possess = 0
X_7 Times received loan	Dummy	Times $\geq 3 = 1$, $3 >$ Times = 0
X_8 Amount of loan received	Dummy	Three or more offered =1, Less than three offered = 0
X_9 Years since loan received	Dummy	More than 1= 1, 1 or less = 0

4. Results and Discussion

4.1 Socio-Demographic Characteristics of the Respondents

The majority of the respondents had an average borrowing history of four years from WDF, with 46% borrowing for less than one year, 19% borrowing for two to three years, and 35% borrowing for four to five years. This finding indicates that women frequently take loans from WDF multiple times, suggesting their active participation in various socioeconomic activities in the study area. In terms of age, the majority of the respondents fell into the age category of 34–44 years old, accounting for 44% of the total respondents. This suggests that women within this age group are more likely to borrow funds for socioeconomic production activities, as they are in the energetic and active phase of life. This observation is consistent with the findings of Anne (2012), who noted that women actively involved in socioeconomic activities are typically between the ages of 31 to 44. The details of the findings are presented in Figure 1.

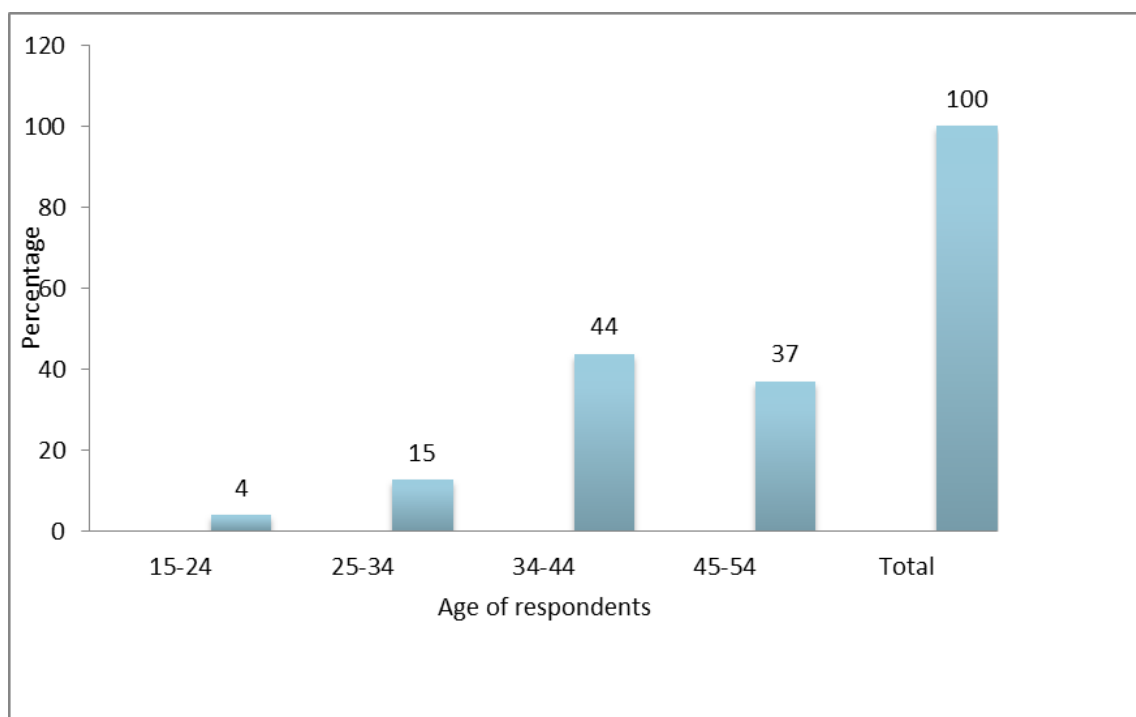


Figure 1: The age of respondent

Regarding the respondents' education level, literacy has always been seen as a door opening for undertaking business ventures, especially through the supply and application of loans. In this study, four categories of education levels were established and assessed. Approximately 8% of the respondents had no formal education, 37% had primary school education, 47% had secondary school education, and the remaining 6% had post-secondary education. In some cases, illiteracy has been identified as an obstacle to accessing loans, primarily due to the perception of illiteracy toward loans. However, in the case of WDF beneficiaries in Tanga, the prevalence of illiteracy is very unlikely to hinder loan access, as there are sufficient literate people. This finding is supported by other studies that suggest more educated individuals have a better ability to reduce risks in business ventures, and it is in line with Mohammad et al.'s (2016) findings that households with a more educated labour force generate more income. In this study, the researcher established that WDF borrowers can be categorised into two groups. The findings indicate that among the older borrowers, only 8% had informal education, while 37% had primary education, 47% had secondary education, and 6% had education beyond the secondary level. This suggests that those with up to secondary education have a greater chance to access loans provided by WDF. Another reason for this pattern is their higher understanding and awareness regarding loans compared to informal and primary loan beneficiaries.

Regarding the marital status of respondents, the study findings revealed significant differences between marital status and borrowing from WDF. The majority of borrowers, 35.9%, were married women, followed closely by separated respondents at 23.3%. Divorced respondents comprised 19.4% of the borrowers, while single individuals made up 18.4%. The research could not establish any reason for why widows were not part of this trend. This implies that the married group is driven by push and pull factors to involve in WDF loans to meet their financial requirements. Furthermore, regarding household size, the findings revealed its role in improving the income status of the household, depending on the structure and size of the household, particularly the size and age of its members. Most of the borrowers' households (41%) had between 9-10 members, and 31% had household membership ranging from 5 to 8 members. Households with one to four members comprised 28% of the respondents. One may speculate that in order to support larger households and achieve their wellbeing, external support through borrowing becomes essential.

4.2 Effectiveness of WDF Microcredits on Enhancing Household Wellbeing

The effectiveness of WDF microcredits on the wellbeing of women beneficiaries and their households was initially analysed using descriptive statistics and subsequently through inferential analysis.

4.2.1 Effects of WDF microcredits on medication expenditure

Figure 2 shows that 20% of the women who benefited from WDF have improved their access to health services. Providing microcredit financial services to the active poor has been recognised as a means of changing their status through improved access to financial services and one of the indicators of its benefits is improved healthcare, as observed by Danang (2016). On the other side of the coin, some studies reject the idea of providing credit to poor women, as Khatun (2013) does, based on the assumption of increased burden on women.

4.2.2 Effects of WDF microcredits on paying for children's education at the household level

The findings revealed that 39% of the respondents agreed that they have benefited in terms of education as a result of the loans. The main focus of this study was on the contribution of WDF to the wellbeing of households in Tanga City. From the foregoing, it has been revealed that WDF has uplifted the standards of living in the study area. This result is similar to the findings from Paulo (2014), whose study revealed that microcredit facilitated children's education, attendance at school, and enrolment. Loans provided by WDF made important needs for children affordable and available, reducing insufficient resources for women. However, the study's findings contradict those of Brannen (2010), conducted in Zanzibar, where no relationship was found between microcredit and household education expenditure.

4.2.3 Effects of WDF microcredits on the improvement of better housing:

The findings observed that 39% of the respondents revealed that WDF assisted them in improving their housing conditions. This finding is similar to the findings by Tshuma and Selome (2014) in a study of microfinance and women empowerment through WDF in Umguza district, Zimbabwe. The findings depicted that WDF, as a strategy, made a difference in the livelihoods of the recipients by enabling ownership of assets. However, in Tanzania and other countries, ownership of assets by women is still a problem, possibly due to cultural factors, low income, and other constraints. These findings contradict those of Koech (2011), whose study indicated that the loans failed to improve settlement conditions and instead increased burdens on people. A study conducted by Anne (2012) revealed that the utilisation of microfinance loans resulted in improved education standards, enhanced healthcare, improved sanitation, enhanced consumption and living standards, increased income, as well as a reduction in unemployment by providing an avenue for self-employment. In that study, the research aimed to find out from rural households in Bungoma County whether access to microfinance loans enabled them to access improved healthcare.

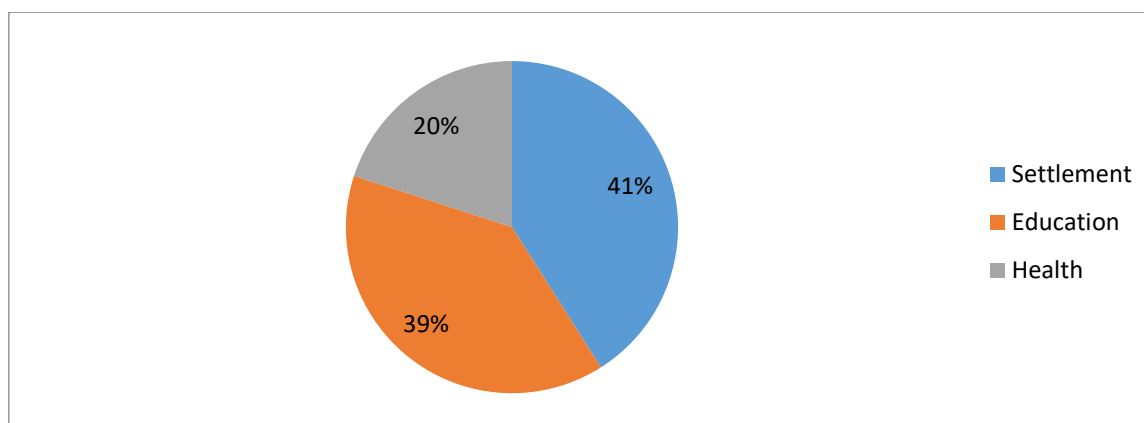


Figure 2: WDF microcredit enhancement to household level

It is evident that the findings in Tanga city align with Figure 2, where 41% of the households reported that WDF loans have contributed to improving their housing conditions. Additionally, 39% of the respondents

stated that they used the loans for their children's education, while 20% utilised the funds for health-related expenses. Health expenses seem to be more unpredictable and sudden, which might explain the relatively smaller proportion allocated to this category compared to other needs. The effect of each independent variable on the dependent variable (effectiveness of WDF microcredits on household wellbeing) can be either positive or negative, as indicated by the sign (positive or negative) of the individual logistic regression coefficients (B values) and their corresponding Wald statistics. A negative sign associated with a B coefficient indicates that the particular variable decreases the probability of the dependent variable (enhanced household wellbeing) being realized, while a positive sign indicates an increase in the probability of the event. For instance, in Table 2 variables such as marital status and household size both have negative values. This implies that these variables decrease the likelihood of WDF microcredits leading to enhanced household wellbeing. On the other hand, variables with positive B values increase the probability of successful household wellbeing due to WDF microcredits.

If there were any variables with B values equal to 0, it would indicate that those variables have no effect on the characteristics of successful WDF microcredits. However, in this study, all fourteen hypothesized variables were found to contribute as success characteristics of WDF microcredits leading to enhanced household wellbeing. Therefore, the second null hypothesis of this study was rejected, indicating that all independent variables in the model have a significant contribution to the success of WDF microcredits in improving household wellbeing.

4.3 Inferential Analysis and Presentation of Income and Expenditure Findings

The effectiveness of WDF microcredits in enhancing women households' wellbeing was also assessed through inferential statistics. The regression model shown in equation (1) was employed using Ordinary Least Square (OLS) regression to test the impact of microcredits on income and expenditure of women beneficiaries of WDF. Logistic Regression models were used to determine the effectiveness of microcredits in enhancing household expenditure, with the dependent variables being settlement enhancement, health/ability to pay for medicine, and children's education payment, as shown in equation (2). Heteroskedasticity-robust standard errors were applied to obtain more efficient estimation results for all regression models.

The findings indicate that the Adjusted R² for income is 0.56, meaning that 56% of the variation in income is explained by WDF microcredit, as shown in Table 2. Similarly, the Adjusted R² for expenditure per capita is 0.61, indicating that 61% of the variation in expenditures per capita is explained by WDF microcredit, as shown in Table 3. Notably, WDF loans have a significantly positive effect on expenditure per capita compared to income per capita, as reflected in the results of the model. However, despite the impact of WDF on income and expenditure, respondents do not perceive any enhancement in their ability to spend on medication and health improvement. The findings reveal that the variable "amount of loan received" positively influences income in household wellbeing. Specifically, as the WDF loan amount received increases by 1.12 units, the household's expenditure increases by 0.037 Tanzanian shillings, assuming other predictor variables remain constant. This implies that an increase in the loan size influences expenditure positively.

Furthermore, the frequency of receiving loans significantly impacts the income and expenditure of loan holders, with predicted income being about 15% higher and the predicted expenditure being 25% higher due to regression results, as shown in Table 3. These findings are consistent with previous studies by Tshuma and Selome (2014), Banzi (2012), and Mgalula (2012), which found that loan services provided by microcredit institutions contribute to sustainable consumption expenditure at the household level and improve households' wellbeing. The Ordinary Least Square (OLS) regression models used in this study demonstrated that the amount of loans has a positive significance in the expenditure of loan holders for production. The results of the first set of OLS regression models, after correcting for heteroskedasticity, are presented in Table 2 and Table 3.

Table 2: Effectiveness of WDF microcredits to income increase enhancement

OLS Regression Results		
	B	Significance
loan holder	0.15	0.01***
Age	0.12	0.01***
Marital status	-0.10	0.05**
Women Education	0.06	0.00***
Household size	-0.16	0.001***
Other sources of income	0.14	0.01***
Times received loan	0.23	0.09*
Amount of loan received	0.48	0.321
Years since loan received	0.024	0.97
Constant		0.001***
Adjusted R2	0.56	
F Probability	0.001	

Note: ***p<0.001, **p<0.05, *p<0.1; p-values in parenthesis

Table 3: Effectiveness of WDF microcredits to expenditure increase enhancement

OLS Regression results		
	B	Significance
loan holder	0.25	0.01***
Age	0.07	0.07*
Marital status	0.01	0.88
Women Education	0.02	0.35
Household size	-0.15	0.001***
Other sources of income	0.25	0.01***
Times received loan	0.88	0.383*
Amount of loan received	1.12	0.037**
Years since loan received	0.84	0.83
Constant	2.13	0.001***
Adjusted R2	0.61	
F Probability	0.004	

Note: ***p<0.001, **p<0.05, *p<0.1; p-values in parenthesis

4.4 Effectiveness of microcredit expenditure on settlement, children education and health (wellbeing) of WDF microcredits beneficiaries

The effectiveness of microcredit expenditure on settlement, children's education, and health (wellbeing) of WDF microcredit beneficiaries was assessed using a logistic regression model as specified in equation (2). The regression was conducted to test the null operational hypothesis that the microcredits provided by WDF have no significant effect on improving household wellbeing in Tanga city. Logistic regression models were employed to test the effectiveness of microcredits on respondent's household wellbeing, specifically in terms of settlement enhancement, health improvement, and education for children enhancement through the ability to meet expenses, as shown in Tables 4, 5, and 6.

Table 4: Effectiveness of microcredit utilisation on settlement enhancement

Logistic Regression results			
	B	Df	Significance
loan holder	1.00	1	0.01***
Age	-0.09	1	0.761
Marital status	0.07	1	0.05**
Women Education	-0.12	1	0.73
Household size	0.22	1	0.004***
Other sources of income	0.41	1	0.09*
Times received loan	0.64	1	0.09*
Amount of loan received	0.63	1	0.0***
Years since loan received	0.04	1	0.35*
Constant	4.20		0.019**
Wald Chi2 (09)	10.34		
Pseudo R2	0.0919		
Chi2 Probability			0.026**

NOTE: ***p<0.001, **p<0.05, *p<0.1; p-values in parenthesis

Table 5: Effectiveness of microcredit use on Spending on medication and Health

Logistic Regression results			
	B	Df	Significance
loan holder	0.35	1	0.12
Age	-0.73	1	0.15
Marital status	-0.28	1	0.09*
Women Education	-0.38	1	0.27
Household size	0.15	1	0.02**
Other sources of income	0.18	1	0.46
Times received loan	-0.75	1	0.16
Amount of loan received	0.01	1	0.97
Years since loan received	0.01	1	0.90
Constant	5.89		0.009***
Wald Chi2 (09)	11.00		
Pseudo R2	0.0955		
Chi2 Probability	0.068*		0.068*

NOTE: ***p<0.001, **p<0.05, *p<0.1; p-values in parenthesis

Table 6: Effectiveness of microcredit use on Children’s Education enhancement

Logistic Regression results			
	B	Df	Significance
loan holder	0.63	1	0.02**
Age	-0.19	1	0.03**
Marital status	-0.04	1	0.85
Women Education	-0.11	1	0.001***
Household size	0.06	1	0.001***
Other sources of income	0.48	1	0.48
Times received loan	0.12	1	0.83*
Amount of loan received	0.17	1	0.04**
Years since loan received	0.01	1	0.83
Constant	2.81	1	0.08*
Wald Chi2 (09)	10.03		
Pseudo R2	0.0830		
Chi2 Probability			0.023**

NOTE: ***p<0.001, **p<0.05, *p<0.1; p-values in parenthesis

4.5 Explanatory variables, B coefficients and correlations

The significance of explanatory variables in affecting the variance of the response variable was assessed by examining both the B coefficients and correlations. This approach helps avoid the problem of logistic regression coefficients being found insignificant when corresponding correlations are significant, and vice versa. The analysis revealed that medication/health had the highest significance (Wald Chi2 (09) = 11.0), followed by settlement (Wald Chi2 (09) = 10.03) and children education (Wald Chi2 (09) = 10.03) as shown in Tables 4, 5, and 6. Additionally, the correlations between these variables and the dependent variable were also significant ($p \leq 0.05$) for settlement and children education, and ($p \leq 0.1$) for medical/health, confirming the importance of the explanatory variables. If the decision to determine the importance of the predictor variables was based only on correlation results, the following variables were found to be important for each case:

- (i) For settlement: amount of loan received, loan holder, household size, marital status, other sources of income, times received loans, and years since loan received.
- (ii) For medication/health: household size and marital status.
- (iii) For children’s education: women education, household size, loan holder, age, amount of loan received, and times received loans.

If we consider the entire household wellbeing, marital status was important for all three cases, and the following variables were important for at least two cases: amount of loan received, loan holder, household size, and times received loans. Other variables, such as years since loan received, education, age, and other sources of income, were important for at least one case.

The analysis also revealed that being a microcredit holder significantly increased the probability of perceiving improvement in settlement by 100%, and the probability of perceiving improvement in children’s education level by 63%, as shown in Tables 4 and 6. However, microcredit had an insignificant effect on the probability of improvement in spending on medication and health by 35%, as shown in Table 5. This indicates that the likelihood of loan holders using loans to improve settlement in the study area is greater than using loans for education and health. The frequency and amount of loans received also had a positive and significant impact on settlement and education. Other studies have also found that participation in microcredit schemes positively influences household expenditure on children’s education, enrolment, and attendance. In summary nutshell, based on these findings, the null hypothesis was rejected, indicating significant effectiveness of WDF microcredits in enhancing household wellbeing. The Wald test showed that all model variables contributed significantly. Given a large sample of 100, and the fact that

there is no variable in question that cannot be removed without harming the model fit, the Wald Chi-Squared Test supported the rejection of the null hypothesis.

5 Conclusion

The objective of this study was to analyse the effectiveness of microcredits provided by WDF in enhancing household wellbeing. The findings revealed that WDF microcredits were effective in increasing the income of female beneficiaries, and the expenditure was higher than the income. Notably, the expenditure showed significant effectiveness in settlement development, children's education, and medical expenses. All of the independent variables were found to contribute significantly to the effectiveness of enhancing household wellbeing (Wald χ^2 (09) ≥ 10.03), leading to the rejection of the null hypothesis. Furthermore, the study concluded that WDF microcredits had a positive impact on various aspects of household wellbeing for women beneficiaries. This included paying school fees for their children, improving housing conditions, and covering medical expenses for their families. It was observed that WDF loans had a relatively greater significance on expenditure per capita compared to income per capita. Based on the effectiveness concluded by this study, it is recommended that the government and other stakeholders take measures to reduce interest rates to single-digit percentages, encouraging more women to participate in the WDF program and access loans for their businesses, thereby improving their household wellbeing. It is crucial to address any conditions or barriers in the program that hinder women's access to microcredit and mainstream the programs to be accessible to all women. In addition, the paper suggests conducting further research to identify and understand the challenges faced by women involved in income-generating activities in Tanga city. This would provide valuable insights for designing targeted interventions to support and empower women in their economic endeavors.

References

- Afrane, S. (2002). Impact assessment of microfinance interventions in Ghana and South Africa: A synthesis of major impacts and lessons. *Journal of Microfinance*, 4(1): 42-57.
- Anne, M. O. (2012). The Relationship between microfinance loans and household welfare in Bungoma County, Kenya. Unpublished Master's dissertation. Nairobi: University of Nairobi.
- Banzi, C. D. (2012). Assessing the impact of village micro financing in poverty reduction among women at Arumeru District. Unpublished Master's dissertation. Morogoro: Mzumbe University.
- Brannen, C. (2010). An impact study of the Village Savings and Loan Association Program in Zanzibar, Tanzania. Unpublished Bachelor's Dissertation. New York: Wesley University, Middletown.
- Cheston, S., & Kuhn, L. (2002). Empowering women through microfinance. Unpublished background paper for the microcredit summit +5, New York. <http://www.microcreditsummit.org/papers/papers.htm>
- Chowdhury, A. (2009). Microcredit as a poverty reduction tool: a critical assessment. *Working Paper No. 89 of the United Nations*. www.un.org/esa/desa/papers2009/wp89-2009.pdf
- Dallimore, A. (2013). Banking on the poor: saving, poverty, and access to financial services in rural South Africa. Unpublished Doctoral thesis. London: London School of Economics and Political Science.
- Danang, B. (2016). Credit accessibility: the impact of microfinance on rural Indonesian. Lincoln: Lincoln University.
- Kasanga, M. E. (2005). Contribution of credit on poverty alleviation: a case study of Rural Women and Credit Agencies in Mvomero District. Unpublished Master's dissertation. Morogoro: Sokoine University of Agriculture.
- Kayunze, A., Urassa, J. K., & Mwakalobo, A. B. S. (2005). Credit enriching or impoverishing? Voices of credit recipients in the southern highland of Tanzania. *Tanzania Journal of Development Studies*, 6(2): 79-93.
- Kayunze, K. A., & Twamala, S. (2000). Does credit have any negative impact on poverty alleviation among the very poor? In: *Proceedings of 4th Scientific Conference of the Agricultural Economics of Tanzania (AGRESET) Morogoro Tanzania*, 50-137.
- Khatun, M. A. Islam, & Majumder, S. (2013). Why some poor women in Bangladesh do not opt for microcredit? *Journal of Bangladesh Agrii. UNIV.* 11(2): 285-292.
- Kothari, C. R. (2009). *Research Methodology Methods and Techniques*. New Delhi: New Age International Publishers.
- Ledgerwood, J. (1999). *Microfinance handbook: an institutional and financial perspective*. Geneva: World Bank publication.

- Lumid, S. (2012). Microfinance and empowerment of rural women: experience from Mbeya Region, Tanzania. Unpublished Master's dissertation. Lund: Lund University.
- Makombe, R., Luvanda, E., & Semu, A. E. (1999). *The paradox of non-governmental organizations in Tanzania*. Dar es Salaam: Dar es Salaam University Press.
- Mgalula, A. C. (2012). Contribution of microfinance institutions on poverty reduction in Tanzania: the case of Dar es Salaam Region. Unpublished Master's dissertation. Morogoro: Mzumbe University.
- Minja, E. B. (2015). The Contribution of microfinance on poverty reduction: a case study of Kinondoni Municipal. Unpublished Master's dissertation. Morogoro: Mzumbe University.
- Mohammad, M. M. B., Rasheda K., & Mohammad, M. R. (2016). Impact of microfinance on household income and consumption in Bangladesh: empirical evidence from a quasi-experimental survey. *Journal of Developing Areas*, 50(3):305-318.
- Mongi, M. J. (2005). The role of women savings and credit groups in the alleviation of poverty: a case study in Arumeru District. Unpublished Master's dissertation. Morogoro: Sokoine University of Agriculture.
- Paulo, J. S. (2014). The effect of microcredit on household welfare: empirical evidence from women micro entrepreneurs in Tanzania. *International Journal of Academic Research in Business and Social Science*, 4(15): 259-279. DOI: 10.6007/IJARBS/v4-15/853.
- Powers, D. A. and Xie, Y. (2000). *Statistical Methods for Categorical Data Analysis*. New York: Academic Press University of Texas.
- Robinson, M. S. (1996). *The microfinance revolution: sustainable finance for the poor*. Geneva: World Bank Publications.
- Sen, A. (1993). Capability and well-Being. In W. Gaertner (Ed.), *The Proceedings of the Aristotelian Society*, 94:62-66. Oxford: Oxford University Press. DOI: 10.1093/0198287976.003.0005
- Tshuma, N., & Selome, J. (2014). Microfinance and women empowerment in Zimbabwe: a case of Women Development Fund in Umguza District. *International Letters of Social and Humanistic Sciences*, 35: 74-85.
- URT. (2000). National Microfinance Policy of Tanzania. Dar es Salaam: Ministry of Finance.
- URT. (2013). Tanzania's Development Vision 2025. Dar es Salaam: United Republic of Tanzania.
- William, A. (2011). Microfinance and socio-economic empowerment of women: a case of Opportunity International Saving and Loans Clients. Unpublished Master's dissertation. Kumasi: Kwame Nkrumah University of Science and Technology.
- Yamane, T. (1967). *Statistics: an introductory analysis*, 2nd ed. New York: Harper and Rows.
- Zeller, M, Gonzatez V, Rodriquez, C. and Meze, J. (2000). Micro credit and the poor: theory and evidence from Bolivia. *World Development*, 28(2): 333-346.



INFLUENCE OF CAPITAL ADEQUACY REQUIREMENT REVIEWS ON COMMERCIAL BANKS' FINANCIAL PERFORMANCE IN TANZANIA

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ABSTRACT

Tanzania has undergone various amendments in capital adequacy regulations and policies at various time periods, such as in 1998, 2008, and 2014. However, despite these reviews, some banks have shown good performance while others have collapsed and merged with other strong banks. This study, therefore, aimed at assessing the influence of reviews of capital adequacy requirements on the financial performance of commercial banks in Tanzania. To achieve the main objective, the study specifically intended to analyse the extent to which commercial banks in Tanzania complied with capital adequacy requirements amendments, and compare the effect of capital adequacy requirements reviews on the financial performance of commercial banks in Tanzania before and after regulatory reviews. Panel secondary data were collected for only 24 sampled commercial banks out of 36 targeted banks. Data obtained from the study were descriptively analysed and inferentially using a random effect regression model. Results from the field reveal that, after regulatory amendments on capital requirements in 2014, Tier I, Tier II, GDP, and SIZE were observed to have a higher significant influence on the financial performance (ROE and saving mobilisation) of selected banks in Tanzania as compared to the period before capital requirements reviews. The study concludes that high compliance with capital adequacy requirements helps banks to improve their financial performance. Therefore, the study recommends that banks should further diversify their income sources to ensure that they hold more capital adequacy.

Keywords: Capital adequacy, Return on equity, Saving mobilisation, Commercial banks, Random effect.

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

In the World over, banks play a significant role in contributing to economic growth by facilitating monetary and fiscal policies through the provision of financial resources to production sectors in the form of deposits, savings, and loans (Okoye, Ikechukwu, Lwonnard, Chinyere and Christian, 2017; Masood and Ansari, 2016). In order to maintain optimal performance, banks need to adhere to capital adequacy requirements (Kale, Eken and Selimler, 2015). The concept of capital adequacy necessitates that financial institutions hold sufficient capital to protect against bank collapse, mitigate unforeseen losses, and instill confidence and trust among stakeholders regarding the banks' operations (Musyoka, 2017). The Basel Committee on Banking Supervision has issued the Banking Supervision Accords, which set a minimum of 4.5% and 8.0%



of core capital and total capital to total weighted risk assets, respectively, along with a minimum liquidity ratio of not less than 20% of its liabilities. These requirements aim to promote stability and prevent banks from insolvency (Basel, 2013). Capital adequacy requirements have become a critical subject of discussion due to their vital role in the banking sector, where banks with sufficient capital can weather periods of insufficient returns.

Banks' performance is commonly measured using various indicators, including qualitative and quantitative measures (Kori et al., 2020). In this study, quantitative measures were preferred as financial indicators offer precise information to facilitate informed decisions by investors (Kijewska, 2016). The study utilises financial return on equity (ROE) and Saving Mobilisation Ratio (SMR) as performance measures for Tanzania's commercial banks. ROE reflects the income generated from ordinary shares invested, while SMR assesses the banks' ability to mobilise deposits. Given the crucial role of banks in the economy, regulatory bodies maintain strict standards to ensure the stability and soundness of banks (Chortareas et al., 2012). Governments closely monitor banks' performance, recognising the potential impact of their failure on the country's economy. As such, capital adequacy regulations are subject to regular scrutiny and enforcement (Chakrabarty, 2013). Banks that fail to comply with these regulations face penalties commensurate with the severity of their non-compliance.

The Bank of Tanzania (BOT) has taken measures to enhance the stability, efficiency, and performance of financial institutions, including commercial banks. Notably, the BOT reviewed capital adequacy regulations in 2008 and 2014, resulting in increased minimum core capital (Tier I) and total capital ratio (Tier II) requirements, as well as enhanced regulatory reserves and minimum required capital amounts. These reviews have had mixed consequences, benefiting some banks while not providing the same advantages to others. For instance, large banks such as CRDB, Exim, NBC, Diamond Trust Bank, Standard Chartered, Barclays, NMB, and Stanbic experienced notable improvements in profitability, total deposits, total assets, number of ATMs, branches, and liquidity value as a result of the reviews (BoT, 2018). On the other hand, some banks in Tanzania have shown unsatisfactory performance, particularly smaller banks, which reported declining profits and losses. For instance, Return on Assets (ROA) declined to 2.49% from 2014 to 2015 and further to 2.09% from 2015 to 2016, while Return on Equity (ROE) declined to 12.16% from 2014 to 2015 and to 9.26% from 2015 to 2016 (BoT, 2016). Moreover, net profit decreased from TZS 438 billion in 2014 to TZS 423 billion in 2015 and further declined to TZS 286 billion in 2016. The capital adequacy amendments in 2014 also had adverse effects on some banks, leading to the closure of five banks for failure to meet the requirements, while others merged their assets and liabilities with stronger existing banks. Twiga Bancorp, for example, was amalgamated with Tanzania Postal Bank, and Bank M merged with Azania Bank (BoT, 2018).

It remains uncertain whether the observed performance of banks, both positive and negative, is a direct result of the BoT's amendments to capital adequacy requirements or if there are other contributing factors. Therefore, this study aims to address this empirical gap by assessing the influence of capital adequacy requirements reviews on the financial performance of commercial banks in Tanzania. To achieve this objective, the study specifically intended to analyse the extent to which commercial banks in Tanzania complied with capital adequacy requirement amendments, and compare the effect of capital adequacy requirements reviews on the financial performance of commercial banks in Tanzania before and after regulatory requirements reviews in Tanzania.

2. Literature Review

The review of the related literatures is organised under the following sub-heading:

2.1 Guiding Theory

This study was guided by the capital buffer theory, as proposed by Rob and Calem (1996). The theory posits that when banks approach the minimum required capital threshold, they should promptly increase their capital to ensure they are on a safe footing and mitigate risks arising from potential violations of statutory capital requirements, which could adversely impact profits. Almazari and Alamri (2017) further support

this theory, suggesting that banks with a high capital buffer (above the minimum required) are better positioned to seize emerging investment opportunities, expand their branch network, and withstand shocks from risks. As a result, such banks may experience fluctuations in their capital adequacy ratios. Therefore, the theory recommends that banks maintain a buffer of capital above the minimum required (Von Thadden, 2004). Additionally, Berger and Udell (1994) observe that banks with ample capital may also invest in shares of other companies, government bonds, and financial institutions. The capital buffer theory is highly relevant to this study because the Bank of Tanzania (BOT) regulates commercial banks, requiring them to hold a minimum prescribed capital to avoid penalties and the risk of bank failure while enhancing bank stability and profitability. Failure to comply with capital requirements may result in more severe consequences, such as higher penalties, suspension of banking operations, or restricted services. By maintaining a capital buffer above the minimum required, banks can instill confidence and trust in their customers.

2.2 Capital Adequacy Requirements and Financial Performance of Commercial Banks

Okoye et al. (2017) and Nyawira et al. (2017) conducted research examining the relationship between capital requirements and the performance of commercial banks in Nigeria and Kenya, respectively. They observed that higher capital requirements significantly contributed to improved profits of the banks in the aforementioned countries. Another study by Siliban (2017) noted that amendments made to capital regulations significantly influenced an increase in bank returns in Indonesia. However, studies by Musyoka (2017) and Ndolo (2017) found that capital requirements positively influenced the performance of banks, but the relationship was not statistically significant. They argued that excessively strict minimum capital requirements exposed banks to a high risk of opportunity cost. According to Almazari and Alamri (2017), higher capital levels enable banks to be more stable and efficient, and explore profitable emerging investment opportunities. Well-capitalised banks can open more branches, agencies, Automatic Teller Machines (ATMs), and are better protected against risk shocks. A study conducted by Olalekan and Adeyinka (2013) on the influence of capital requirements on the performance of deposit-taking banks in Nigeria, using questionnaire distributed to a sample of 518 bank staff, showed that reviews of capital requirements significantly improved banks' profitability in Nigeria. Their findings and arguments are supported by Chan and Vong (2010), Dietrich and Wanzenried (2009), and Athanasoglou et al. (2006), who similarly observed a positive and significant relationship between measures of capital requirements and banks' profitability.

Another study by Igbiosa et al. (2017) aimed to determine the impact of financial regulation on the performance of the banking sector in Nigeria. The study collected time series data from 1993 to 2014 and analysed them using Johansson co-integration and error correction model (ECM) statistical techniques. The study revealed that Nigerian banks had low compliance with financial regulations, evidenced by low capital adequacy and high non-performing loans (NPL). A study by Kale et al. (2015) conducted from 1997 to 2013 in Turkish banks found that having tighter restrictions, policies, regulations, and conditions on banks' operations positively impacted banks' efficiency and stability. A study by Hellmann and Murdock (2000) noted that financial performance of banks improved significantly after banks achieved compliance with capital adequacy regulations. Their study suggested that banks should not overly rely on running their institutional activities, as doing so increases debts in the bank's capital structure and raises the financial risk and the risk of bankruptcy.

Previous literature including Okay et al. (2017), Nyawira et al. (2017), and Olalekan and Adeyinka (2013) show that capital adequacy requirements significantly and positively influence bank financial performance, while on the other hand, studies including the study by Musyoka (2017) and Ndolo (2017) have observed a positive but insignificant relationship between the variables. It is still unclear in Tanzania whether the reviews made have a significant or insignificant contribution to the performance of banks, or if they are simply for compliance purposes. Most of the reviewed studies including the study by Okay et al. (2017) and Musyoka (2017) have focused solely on the effect of capital regulations on bank performance using a single period of time, without examining how capital adequacy requirements affected bank performance before reviews were made. Additionally, the majority of these studies were conducted outside of Tanzania,

and generalising their results to Tanzania might not provide a clear picture due to differences in financial regulations, guidelines, and policies. The few studies conducted in Tanzania on the banking sector, such as those by Pastory and Marobhe (2015), Ally (2014), Tiisekwa (2013), and Pastory and Qin (2012), did not concentrate on capital adequacy requirements. Only a study by Lotto (2018) intended to investigate whether capital requirement regulations improved banks' operating efficiency in Tanzania from 2009 to 2015. Furthermore, with the collapse of some banks in Tanzania and the merger of others with strong banks in 2018 due to failure to fulfill the reviewed capital regulations, the importance of conducting this study was evident. Based on the identified gaps in previous studies, this study was intended to fill these gaps by assessing the influence of capital adequacy requirements reviews on the financial performance of commercial banks in Tanzania before and after regulatory reviews, utilising a panel research design spanning twelve years from 2008 to 2019.

3. Methodology

This research was carried out in Dar es Salaam region in Tanzania, where the headquarters of most banks are located. The region was chosen due to its convenience and guarantee of obtaining relevant data from many registered banks, which may not be available in other regions in the country (BoT, 2018). The study employed a panel research design as the data were in the form of panel data covering 24 commercial banks over a period of 12 years (2008-2019). This design was chosen because of its strengths in analysing trends based on secondary panel data (Alanazi and Liu, 2013). Additionally, the design facilitated the comparison of the influence of capital requirements reviews on commercial banks' performance across the time period. The comparison was necessary to determine whether the performance of banks improved after the reviews, or if the amendments were made solely for compliance purposes.

Secondary data were collected from banks' financial statements and organised into a panel format. The panel secondary data were obtained through individual banks' websites, while other data were sourced from the Bank of Tanzania (BoT) website and through physical visits to individual banks to obtain any missing data. A sample of 24 commercial banks, with a history of more than 12 years of existence from 2008 to 2019, was purposively chosen from a target population of thirty-six banks, resulting in a total of 288 observations. The year 2008 was selected as the base year for obtaining the sample size of banks, as significant amendments in bank regulations, including capital adequacy regulations, were made in Tanzania during this period. Therefore, a sample of 24 commercial banks were purposively selected, based on the criteria of being in existence from 2008 up to the period of this study. Descriptive analysis was used to analyse specific objective one of this article, while specific objective two was analysed using random effect regression, and the p-values were compared across the time period.

3.1 Operationalisation of Research Variables

All the variables in this study, including the dependent, independent and control variables were operationalised as shown on Table 1.

Table 1: Operationalisation of Research Variables

Variable	Nature	Operationalisation	Measurement
CCRW (Tier I)	Independent	The ratio of core capital to risk weighted assets	Ratio
TCRW (Tier II)	Independent	The ratio of total capital to risk weighted assets	Ratio
GLTD	Independent	The ratio of total loan to total deposit;	Ratio
RRTD	Independent	The ratio of regulatory reserve to total deposits	Ratio
Return on Equity (ROE)	Dependent	The ratio of Net Income to total equity	Ratio
Saving Mobilisation Ratio (SMR)	Dependent	The ratio of customers' deposits to total liabilities	Ratio
IFN	Control	Annual inflation rate (%) of a country	Ratio
GDP	Control	Annual GDP growth rate (%) of a country,	Ratio
SIZ	Control	Logarithm of total assets of a bank	Ratio

Source: Author and Literature Review (2020)

3.2 Diagnostic Tests

The study conducted various diagnostic tests including normality, multicollinearity, heteroscedasticity, Hausman test and test for outliers. Kolmogorov-Smirnov test for normality as shown in Table 2 was conducted at a level of 1%, and found that since the p-values are larger than 1% significance level; the result implies that all variables are normally distributed. The normality test was conducted in order to check whether data are normally distributed or not.

Table 2: Kolmogorov-Smirnov test of Normality

Variables	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Observation	Sig.	Statistic	Observation	Sig.
CCRW	0.169	288	0.124	0.931	288	0.107
TCRW	0.194	288	0.236	0.872	288	0.208
GLTD	0.185	288	0.158	0.860	288	0.227
RRTD	0.175	288	0.243	0.971	288	0.312
INF	0.306	288	0.506	0.784	288	0.104
GDP	0.207	288	0.143	0.890	288	0.118
SIZ	0.141	288	0.135	0.920	288	0.156

Source: Survey Data (2020)

Multicollinearity situation was checked using tolerance values and Variance Inflation Factor (VIF) = $\left(\frac{1}{1-r^2}\right)$ whereby r^2 is the coefficient of determination of explanatory variables. VIF and tolerance tests were conducted in order to determine whether there is a problem of multicollinearity among the collected data. In this method, VIF values > 10 and tolerance less than 0.1 signal the presence of multicollinearity as also suggested by Kori et al. (2020). The VIF for all variables in either ROE/SMR were less than 10 while the tolerance for all variables in either ROE/SMR were greater than 0.1 indicating that the study variables did not have the problem of multicollinearity (Table 3). The same approach was also used in the study by Lotto (2018) and Lotto and Mwemezi (2016) who performed the same test and found that the collected data did not have the problem of multicollinearity.

Table 3: Variance Inflation Factor Test of Multicollinearity

Variables	ROE		SMR	
	Tolerance	VIF	Tolerance	VIF
CCRW	0.164	6.078	0.303	3.324
TCRW	0.205	4.917	0.204	3.622
GLTD	0.152	4.581	0.615	5.931
RRTD	0.330	5.492	0.643	6.128
INF	0.408	3.276	0.231	3.886
GDP	0.207	4.297	0.319	6.319
SIZ	0.407	6.704	0.137	4.097

Source: Survey Data (2020)

The heteroscedasticity was tested using the Levene's test, as recommended by Nordstokke and Zumbo (2010). To determine the most appropriate model for the study between fixed and random effect models, the Hausman test was conducted. In the Hausman test, the null hypothesis was that "the preferred model is not random effects," as advocated by Greene (2008). The Hausman test assesses whether the unique errors are correlated with the regressors; the null hypothesis was that they are not correlated. If the probability of the chi-squared value in the Hausman test output was less than 0.05, the fixed effects model was preferred; otherwise, the random effects model was preferable. Upon conducting the Hausman test, the probability for the chi-squared value was as follows: Hausmann test chi2 ROE (12.97; p-value = 0.0729) and for SMR, the results showed: Hausmann test chi2 14.10; p-value = 0.3414). In both cases, the p-value (probability) is greater than 0.05, as shown in Table 4. The results of the Hausman test for ROE and SMR, as seen in Table 4, indicate that the p-values were both larger than 5%. Therefore, there were sufficient grounds to reject the null hypothesis that the preferred model was not random, hence, accepting the alternative hypothesis that the preferred model was the random effects model. Thus, this study employed the random-effects

regression model. The study did not opt for the OLS (Ordinary Least Squares) test because all the requirements for random effects were met at the earlier stage, as also proposed by Lotto (2018) and Lotto and Mwemezi (2016), who also settled on the fixed effects regression model after obtaining a probability of the chi-squared value in the Hausman test output being less than 0.05.

Table 4: Hausman Fixed Random Test Results

Coefficients	ROE			SMR		
	(b) fixed	(B) random	(b-B) Difference	(b) fixed	(B) random	(b-B) Difference
CCRW	-0.0706	-0.3953	0.3247	-0.0355	-0.0431	0.0076
TCRW	0.1975	0.3425	-0.1450	0.9351	2.7961	-1.8610
GLTD	-0.3650	-0.0119	-0.3531	1.3210	-0.0722	1.3932
RRTD	-0.2976	-1.6984	1.4008	-0.4225	-0.4211	-0.0014
INF	0.5642	0.0167	0.5475	0.8093	1.0861	-0.2768
GDP	0.0161	0.1372	-0.1211	1.8765	0.5512	1.3253
SIZ	0.9071	0.1720	0.7351	2.9736	0.8621	2.1115
R-square	0.8425	0.7561		0.8615	0.4292	
adjustedR ²	0.7980	0.7521		0.8268	0.4191	
F-statistic	19.563	54.8		15.32	39.15	
Prob(F-statistic)	0.0016	0.0000		0.0000	0.0000	

b=consistent under HO; and H1; obtained from a regression command (xtreg)

B=inconsistent under (H1), efficient under (HO); obtained from regression command (xtreg)

Ch2 (7) = (b-B) [(V_b-V_B)-1] (b-B)

Chi2 (7) =12.97, P-value=0.0729for ROE and chi2 (7) =14.10, P-value=0.3414 for SMR

Random effect regression model was developed and specified as follows:

$$Y_{ij} = \beta_0 + \sum_{i=1}^n \beta_i X_i + \mu + \mu_j + \epsilon_{ij}.$$

Where:

Y_{ij} = Dependent variables (ROE/SMR), ROE= total net income divides by total equity and SMR= total deposits divide by total liabilities

X_i = whereby ($i = 1, 2, \dots, n$) are independent variables: β_i = whereby ($i= 0, 1, 2, \dots, n$) are regression coefficients

ϵ_{ij} = whereby ($i= 0, 1, 2, \dots, n$ and $j = 1, 2, 3, \dots, m$) error terms with distribution $\epsilon_{ij} | \mu_j \sim (0, \sigma_\epsilon^2)$

β_0 = constant terms: $Y_{ij} = \mu + \mu_j + \epsilon_{ij}$

Whereby μ_j is the random variability with the distribution that follows $\mu_j \sim (0, \sigma_\mu^2)$

4. Findings and Discussion

Descriptive statistics was used to analyse the compliance level of commercial banks on capital adequacy requirements before and after regulatory reviews so as to know in which time periods commercial banks complied well with capital adequacy reviews. This study compared the influence of capital adequacy requirements on financial performance of commercial banks before and after regulatory reviews using random effect regression model. This was done purposely in order establish time period in which capital adequacy reviews had more influence. Tables 5, 6 and 7 illustrate the findings of the study.

4.1 Compliance Level on Capital Adequacy Requirements before and after Regulatory Reviews

In order to know the exactly period in which commercial banks complied well with the regulatory requirements reviews between the period before and/or after, the mean, minimum and maximum values for each time period were computed. Table 5 illustrates the study findings.

Table 5: Capital adequacy requirements before and after regulatory reviews

Var	Before regulatory reviews (2008-2013)					After regulatory reviews (2014-2019)				
	Obs	Mean	Min	Max	BOT std	Obs	Mean	Min	Max	BOT std
CAPA	144	31.85	5.0	421.8	5/=bill	144	56.45	8.9	711.2	15/=bill
CCRW	144	20.95	7.3	64.02	10.0	144	23.16	7.0	50.97	12.5
TCRW	144	24.55	9.37	66.08	12.0	144	25.44	7.5	56.32	14.5
GLTD	144	55.63	23.7	85.16	20.0	144	63.21	24.1	85.24	20.0
RRTD	144	13.74	1.93	48.19	5.0	144	12.80	5.21	46.32	7.0

Source: Survey data (2020)

Key: CAPA- Capitalisation amount in TZS billions; CCRW-core capital divide by risk weighted assets; TCRW- Total capital divide by risk weighted asset ratio, GLTD-The Gross loan divide by total deposit, and RRTD-regulatory reserve divide by total deposits.

The findings presented in Table 5 highlight a difference in the extent to which banks complied with capital requirements before and after the implementation of new capital regulations. The results indicated a rise in the Capital Adequacy Portfolio Amount (CAPA) from TZS 31.85/= billion to TZS 56.45/= billion following regulatory reviews, with some banks reporting a minimum capital amount of Tanzanian shilling 8.9/= billion. Additionally, the findings reveal an improvement in the Capital-to-Credit Risk Weighted (CCRW) ratio by 2.21%, increasing from 20.59% before reviews to 23.16% after regulatory reviews, although some banks reported CCRW ratios of 7.3% and 7.0%, below the required standard.

Considering the Total Capital Ratio (TCRW), the study found an increase of 0.89%, rising from 24.55% to 25.44% after reviewing capital adequacy requirements. As for the Gross Loan-to-Total Deposit Ratio (GLTD), the findings demonstrate that before regulatory reviews, commercial banks had an average GLTD ratio of 55.63%, while after regulatory reviews, the average GLTD ratio increased to 63.21%, surpassing the levels before regulatory reviews. Throughout both periods, all sampled commercial banks demonstrated higher compliance above the BOT's minimum requirement of 20.0%, implying that these banks had sufficient liquid assets to meet short-term financial obligations when due.

Regarding the Regulatory Reserve Ratio (RRTD), the findings indicate a rise of 0.94%, ranging from 13.74% before to 12.80% after capital regulations reviews. However, it is worth noting that in some years, some banks failed to meet the BOT's minimum requirement of 7.0% for the regulatory reserve ratio. Generally, the results show that the new capital adequacy requirements had a notable impact on the compliance of commercial banks, leading to increased capital amounts and improved ratios for key indicators such as CCRW, TCRW, GLTD, and RRTD. These findings indicate the banks' efforts to align with the regulatory changes and ensure financial stability and prudent risk management.

4.2 Influence of Capital Adequacy Requirements on ROE of Commercial Banks in Tanzania across Time Periods

For the purpose of knowing the time period in which the capital adequacy requirements reviews influenced the ROE performance of banks; the coefficients of each capital adequacy ratio were computed and then their p-values were compared between the two periods (before and after regulatory reviews) and then the decision was based on the score of the p-value that the lower the p-value the higher the ROE performance of commercial banks. Table 6 illustrates the findings

Table 6: Panel Data Regression Results (ROE)

Dependent Variable: ROE						
Method: Random Effect						
Total panel (288 balanced) = 144 observations before and after regulatory reviews						
Before regulatory requirements reviews				After regulatory requirements reviews		
Variable	Coefficient	Std error	p-value	Coefficient	Std error	p-value
CCRW	0.0413	0.0211	0.047**	0.0702	0.0131	0.022**
TCRW	0.1072	0.0134	0.033**	0.1121	0.0201	0.001**
GLTD	0.2032	0.0330	0.042**	-0.0066	0.0017	0.181
RRTD	-0.0281	0.0231	0.610	-0.1154	0.0652	0.082
SIZE	0.1256	0.0081	0.021**	0.2039	0.0851	0.010**
INF	-0.4189	0.2741	0.133	-0.0137	0.0046	0.171
GDP	0.2052	0.0859	0.049**	0.3111	0.1053	0.022**
R-squared	0.8327			0.8639		
Adjusted R-squared	0.8033			0.8403		
F-statistic	24.72			31.24		
Prob (F-statistic)	0.0011			0.0001		
Durbin-Watson stat	2.8728			2.9136		

Source: Survey Data (2020)

Note: **significant at 5% level

ROE-Return on Equity; CCRW-core capital to risk weighted assets ratio; TCRW- Total capital to risk weighted asset ratio; GLTD-The loan-to-deposit ratio; RRTD-regulatory reserve to total deposits ratio; INF-Annual inflation rate (%) of a country; GDP- Annual GDP growth rate (%) of a country, and SIZ- Logarithm of total assets of a bank

The random effect regression results presented in Table 6 indicate coefficients of determination (R-squared) equal to 0.8327 and 0.8639 before and after regulatory reviews, respectively. This suggests that before and after regulatory reviews, 83.27% and 86.39% of the changes in ROE were explained by the independent variables, while the remaining 16.73% and 13.61% were attributed to other factors not included in the regression model, respectively. The p-values of 0.0011 and 0.0001 before and after regulatory reviews, respectively, imply that the model was significant at a 5% level of significance. The Durbin-Watson statistics were used to check for autocorrelation in the data. The results show that the data lie within the bounds of $1.5 < d < 2.5$, indicating the absence of linear autocorrelation and validating the reliability of the data. The results in Table 6 reveal that the variable CCRW positively and significantly influenced ROE at a 5% significant level in both periods, aligning with expectations. Before regulatory reviews, the CCRW ratio had a coefficient of 0.0413 in ROE with a p-value of 0.047, while after regulatory reviews, the ratio had a coefficient of 0.0702 in ROE with a p-value of 0.022. Comparing the two periods, the p-values indicate that after capital requirements reviews, the ROE of commercial banks improved more than in the period before reviews. This implies that the increase in reserves, premiums, retained earnings, surplus, and equity shares after bank regulatory amendments facilitated banks to advance their performance.

Considering the other capital adequacy indicator, TCRW, the findings in Table 6 indicate that the TCRW ratio was positively and statistically significant at a 5% level of significance in all periods, in line with expectations. Before regulatory reviews, the TCRW ratio had a coefficient of 0.1072 in ROE with a p-value of 0.033, while after regulatory reviews, the variable had a ratio coefficient of 0.1121 in ROE with a p-value of 0.0001. Comparing the two periods, the p-values indicate that the ROE of commercial banks improved more after capital requirements reviews. This implies that the higher reserves, premiums, retained earnings, surplus, equity shares, and debts capital, and other borrowings raised by banks after regulatory requirements reviews enabled the banks to improve their profitability further. These findings are supported by studies by Osano and Gekara (2018), Eyo and Offiong (2015), and Pastory & Marobhe (2015) who observed similar results at different time periods. The results in Table 6 indicate that before regulatory requirements review, the variable Loan-to-Deposit Ratio (GLTD) had a positive and significant relationship with ROE with a p-value of 0.042, as expected. However, after regulatory reviews, GLTD had a negative

and insignificant relationship with ROE with a p-value of 0.1810, contrary to expectations. This result suggests that as commercial banks hold a high liquidity ratio, their profitability falls. This is because liquid assets are less risky and do not bear high rates of return. These results differ from those of Pastory and Marobhe (2015) who observed a positive relationship between liquidity and bank profitability.

ROE and the Regulatory Reserve Ratio (RRTD) showed negative and insignificant relationships in both periods with p-values of 0.610 and 0.082 before and after regulatory reviews, respectively. The negative relationship between ROE and RRTD implies that when banks have excess cash reserves with BOT, they miss an opportunity to generate additional returns, which lowers the return on assets and increases the cost of capital. This study aligns with findings by Ndolo (2017) who observed a negative relationship between bank financial performance and the cash reserve ratio. By considering control variables, the findings in Table 6 indicate that the size of the bank and GDP had a positive and significant impact on bank performance in both periods, as anticipated. The p-values for bank size were 0.021 and 0.010, and for GDP, the p-values were 0.049 and 0.022 before and after regulatory reviews, respectively. These p-values suggest that after regulatory reviews, most banks increased their total asset value, thereby improving their profits. These results are similar to the findings by Ongore and Kusa (2013) who found a positive and significant relationship between bank size and profitability. Additionally, the findings show that inflation had a negative and insignificant relationship with ROE.

4.3 Influence of Capital Adequacy Requirements on SMR of Commercial Banks in Tanzania across Time Periods

For the purpose of understanding time period in which the capital adequacy requirements reviews influenced the SMR performance of banks, the coefficients of each capital adequacy ratio were computed and then their p-values were compared between the two periods (before and after regulatory reviews) and then the decision was based on the score of the p-value. That, the lower the p-value the higher the influence on SMR performance of commercial banks. Table 7 illustrates the findings

Table 7: Panel Data Regression Results (SMR)

Dependent Variable: Saving mobilisation ratio (SMR)						
Method: Random Effect						
Total panel (288 balanced)= 144 observations before and after regulatory reviews						
Before regulatory requirements reviews				After regulatory requirements reviews		
Variable	Coefficient	Std error	p-value	Coefficient	Std error	p-value
CCRW	0.0386	0.7062	0.072	1.1031	0.2836	0.044**
TCRW	1.1805	1.0061	0.102	1.2311	0.8602	0.023**
GLTD	-0.0166	0.0045	0.071	-0.0110	0.0032	0.068
RRTD	-0.7162	0.0040	0.211	-0.4072	0.1911	0.071
SIZE	0.0814	0.0302	0.019**	1.3961	1.0051	0.011**
INF	-0.5541	0.1172	0.170	-1.6102	1.0041	0.201
GDP	0.4861	0.0721	0.042**	1.3427	1.1120	0.002**
R-squared	0.8116			0.8401		
Adjusted R-squared	0.7982			0.8009		
F-statistic	21.16			22.53		
Prob (F-statistic)	0.0021			0.0001		
Durbin-Watson stat	2.5821			2.7849		

Note: **significant at 5% level.

Source: Survey data (2020)

The results presented in Table 7 indicate that before regulatory reviews, CCRW and TCRW ratios had positive but insignificant relationships with SMR, with p-values of 0.072 and 0.102, respectively. However, after the regulatory reviews, both CCRW and TCRW ratios positively and significantly influenced SMR of banks. This finding implies that after regulatory reviews, most banks increased their capital adequacy ratios, which helped them mobilise more deposits from customers. The increase in capital enabled banks to

invest in opening more branches, agencies, and ATMs, resulting in higher customer deposits. Regarding the control variables, the findings from Table 7 indicate that the size of the bank had a positive and significant impact on the bank's deposit ratio in both periods, as anticipated. Therefore, banks with higher assets, especially larger ones, had a larger number of deposits, driven by an increase in capital adequacy. The p-values were 0.019 and 0.011 before and after regulatory reviews, respectively. These p-values suggest that after regulatory reviews, most commercial banks increased their total asset value, indicating that banks with more assets generally enjoyed economies of scale.

Another finding shown in Table 7 was related to inflation. The results indicate that inflation had a negative and insignificant relationship with the savings mobilisation ratio. This suggests that higher inflation rates led to lower deposit rates, as customers may have been cautious about depositing or saving more money with banks. Moreover, the variable GDP had a positive and statistically significant impact on the deposit ratio in both periods. The variable GDP had p-values of 0.042 and 0.002 before and after regulatory reviews, respectively. These p-values indicate that after regulatory reviews, the country's economy also experienced growth, resulting in an increase in the number of deposits among banks.

4.4 Implications of the Results on the theories and related Studies

The study was guided by the Capital Buffer Theory, which posits that when banks approach the minimum capital amount, they should take immediate action to improve it in order to reduce the risks associated with violating statutory capital requirements, which could negatively impact their profits. According to the theory, banks with a higher capital buffer (above the minimum required) are better positioned to explore emerging investment opportunities, open more branches, and mitigate risks, leading to improved performance. This situation may result in fluctuations in the capital adequacy ratio. Therefore, the theory suggests that maintaining a buffer of capital above the minimum required is crucial for compliance with capital regulations and enhancing banks' performance.

The study's findings confirmed the relevance of the Capital Buffer Theory, as improvements in core capital and total capital ratios led to statistically significant effects on ROE and SMR. These results align with a study by Lotto (2018) on Tanzanian commercial banks, which also found that high ROE is dependent on the amount of capital held by banks. Additionally, the findings of this study support the results of Osano and Gekara (2018), Eyo and Offiong (2015), and Pastory and Marobhe (2015), which demonstrated a positive and significant influence of capital adequacy ratios on ROE and ROA following regulatory amendments at different periods of time. Therefore, the current study provides statistical evidence to support the relevance of the Capital Buffer Theory in Tanzania.

5. Conclusion and Recommendations

The purpose of this study was to compare how amendments to capital requirements improved the performance of commercial banks in Tanzania before and after regulatory reviews. The study concludes that, after the regulatory reviews, most banks managed to comply well with the new capital requirements, with only a few banks reporting low compliance. Furthermore, the findings indicate a significantly higher relationship between capital adequacy requirements (core capital ratio and total capital ratio) and banks' financial performance, as measured by return on equity and saving Mobilisation ratio, after the capital adequacy reviews. Based on the findings and conclusions, the study makes the following recommendations:

- (i) Commercial banks in Tanzania that have failed to comply adequately with capital adequacy requirements should take serious measures to improve their financing sources. This will enable them to fully comply with the stipulated capital adequacy regulations, avoid penalties, and prevent insolvency.
- (ii) All banks should consider holding more capital adequacy far above the minimum statutory requirements of TZS 15 billion. The study observed that, in addition to improving banks' profits, a higher capital buffer provides trust and confidence to bank stakeholders, facilitates advancements in contemporary technology, diversification into viable projects, and the opening of more branches, agency offices, and ATMs.

- (iii) The supervisory body should re-evaluate liquidity and cash reserve ratio requirements and consider improvements to ensure that, apart from compliance purposes, they also enhance banks' profitability.
- (iv) The regulator should continue to assist small banks in improving their capital adequacy by facilitating mergers with other strong banks before they face collapse.

6. Limitations and Policy Implication of the Study

6.1 Limitations of the Study

The main limitation of this paper is the challenge of obtaining secondary data that were not available in the financial statements of some banks. To overcome this issue, the researcher physically visited banks' headquarters to request the missed data. Thus, the future research can explore non-commercial banks, such as Saving and Credit Cooperative Organisations (SACCOs), microfinance institutions, and community banks, which were also affected by the amendments to capital bank regulations in 2014. Additionally, studies on regulatory reviews related to risk management practices, interest rate regulations, and liquidity management requirements can be conducted in the same or different institutions. Other design and methodological approaches can also be adopted in future studies.

6.2 Implications of the findings

The findings of this study have significant implications for various bank stakeholders, including banks themselves and policy makers. Commercial bank management teams can utilise the findings to understand that high compliance with capital adequacy leads to improved performance in terms of profit and the number of deposits, despite the compliance costs they face. Policy makers can use these findings to develop and adjust policies and regulations related to capital and liquidity requirements, ensuring they benefit banks while minimizing burdensome and expensive regulations. Moreover, the study's findings align with Tanzania's Five-Year Development Plan (FYDP III-2021/2022-2025/2026), focusing on an industrialized economy and social development. This study contributes to the development of the financial sector, attracting investors to invest in Tanzania, and aligns with Sustainable Development Goals 8 (SDGs 8) under the National Development Plan of 2025, which aims to improve the wellbeing of people, end poverty, and provide banking services to a large number of people by 2030.

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References

- Ally, Z. (2014). Comparative analysis of financial performance of commercial banks in Tanzania. *Research Journal of Finance and Accounting*, 4(19): 133-143.
- Almazari, A. A., & Alamri, A. A. (2017). The effect of capital adequacy on profitability: A comparative study between SAMBA and SAAB Banks of Saudi Arabia. *International Journal of Economics, Commerce and Management*, 5(11): 86-102.
- Athanasoglou, P., Delis, M. D., & Staikouras, C. K. (2006). Determinants of bank profitability in the South Eastern European Region. *Bank of Greece WP 47*. Athens: Economic Research Department.
- Basel. (2013). Basel committee on banking supervision (BCBS) charter. <http://www.bis.org/bcbs/basel3.htm>
- BOT. (2014). Banking and Financial Institutions (Capital adequacy and liquidity management) regulations, 2014. <http://www.bot.go.tz>.
- BOT. (2016). Bank of Tanzania Annual Report 2016, 20th Edition. Dar es Salaam: Directorate of Banking Supervision. <http://www.bot.go.tz>.
- BoT. (2018). Monetary Policy Statement Report, 2018/2019.
- BOT. (2018). Monetary Policy Statement Report, 2018/2019. <http://www.bot.go.tz>.
- Central Bank of Kenya (CBK). (2015). Bank Supervision Annual Report 2015. Nairobi: Central Bank of Kenya. www.centralbank.go.ke
- David, J., & Muendo, D. (2018). Effect of Central Bank of Kenya: regulations on the financial performance of microfinance banks. *The Strategic Journal of Business and Change Management*, 5(1): 584-623.

- Eyo, I. E., & Offiong, A. I. (2015). Effect of capital adequacy on the performance of Access Bank Plc. *International Journal of Trade, Economics and Finance*, 6(6): 402-412.
- Haris, M., Yong, T., Malik, A., & QuratUl A. (2020). A study on the impact of capitalisation on the profitability of banks in emerging markets: a case of Pakistan. *Journal of Risk and Financial Management*, 13(217): 155-171.
- Kale, S., Eken, M. H., & Selimler, H. (2015). The effects of regulations on the performance of banks: evidence from the Turkish Banking Industry. *The Business and Economics Research Journal*, 8(2): 109-145.
- Lotto, J. (2018). The empirical analysis of the impact of bank capital regulations on operating efficiency. *International Journal of Financial Studies*, 6(2): 34-45.
- Lotto, J., & Mwemezi, J. (2016). Assessing the determinants of bank liquidity with an experience from Tanzanian banks. *The African Journal of Finance and Management*, 2(3): 76-88.
- Masood, U., & Ansari, S. (2016). Determinants of capital adequacy ratio a perspective from Pakistani banking sector. *International Journal of Economics, Commerce and Management*, 4(7): 786-791.
- Musyoka, B. K. (2017). The effect of capital adequacy on the financial performance of commercial banks in Kenya. Unpublished Master's dissertation. Nairobi: University of Nairobi.
- Mwongeli, A. J. (2016). The Effect of regulations on financial performance of commercial banks in Kenya. Unpublished Master's dissertation. Nairobi: University of Nairobi.
- Ndegwa, K. B. (2018). Effect of capital adequacy on the financial performance of microfinance banks in Kenya. Unpublished Master's dissertation. Nairobi: University of Nairobi.
- Ndolo, A. (2017). Effect of Central Bank of Kenya regulations on the financial performance of commercial banks listed at the Nairobi Securities Exchange in Kenya. Unpublished Master's dissertation. Nairobi: KCA University.
- Nordstokke, D. W., & Zumbo, B. D. (2010). A new nonparametric Levene test for equal variances. *Psychological*, 3(1): 401-430.
- Nyawira, M. E., Ambrose, J., & Ndede, F. W. (2017). The relationship between capital requirement and financial performance of Commercial Banks in Kenya. *International Journal of Business and Social Science*, 8(3): 1342-1354.
- Okoye, A. N., Ikechukwu, E., Lwonard, N. C., Chinyere, O. J., & Christian, O. E. (2017). Effect of capital adequacy on financial performance of Quoted Deposit Money Banks in Nigeria. *International Conference on African Entrepreneurship and Innovation for Sustainable Development (AEISD)* <http://www.academicdb.com/risk-management case study>.
- Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1): 237-252.
- Osano, K. L., & Gekara, M. (2018). Effect of government regulations on profitability of commercial banks in Kenya. *Strategic Journal of Business and Change Management*, 5(1): 916-945.
- Pastory, D., & Marobhe, M. (2015). The determinants of the commercial banks profitability in Tanzania; panel evidence. *European Journal of Business and Management*, 7(13): 2222-2839.
- Pastory, D., & Qin, X. (2012). Commercial banks profitability position: the case of Tanzania. *International Journal of Business and Management*, 7(13): 2012-2019.
- Rahman, A. N., & Reja, B. A. (2015). Ownership structure and bank performance. *Journal of Economics, Business and Management*, 3(5): 321-342.
- Silaban, P. (2017). The effect of capital adequacy ratio, net interest margin and non-performing loans on bank profitability: the case of Indonesia. *International Journal of Economics and Business Administration*, 5(3): 132-154.
- Tiisekwa, F. (2013). Determinants of profitability of commercial banks using CAMEL framework: a case of Tanzania. Unpublished Master's dissertation. Morogoro: Mzumbe University.



THE CONTRIBUTION OF IRRIGATION SYSTEMS TO HOUSEHOLD FOOD SECURITY IN RUFJI DISTRICT, TANZANIA

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ABSTRACT

Irrigation is considered a major means of increasing productivity to ensure food security all over the world due to rainfall variability caused by climate change. Different countries, including Tanzania, have been advised to engage in irrigation systems, and various regulatory frameworks have been developed to support this. However, different studies reveal both positive and negative results regarding the contribution of irrigation systems to food security, which has raised concerns and prompted the need for further investigation. This study aimed to determine the awareness on the contribution of irrigation systems to food security, types of crops cultivated through irrigation systems, the number of meals consumed by households practicing irrigation, and the challenges facing smallholder farmers in adopting irrigation systems. The Entitlement to Food Theory guided the conduct of this study, which employed a cross-sectional research design involving surveys, interviews, and documentary reviews. A total of 60 households were selected for the study, and the data were analysed descriptively using the Statistical Package for the Social Sciences (SPSS) and content analysis. The study revealed that farmers had an understanding of the contribution of irrigation systems to food security, although they encountered some challenges including lack of inputs and funds for extensive farming. It was further found that 80% of farmers preferred planting maize over other food crops due to its cost-effectiveness in terms of the required inputs. Additionally, majority of the community members had an understanding of food security in terms of access and availability, rather than utilisation. The study recommends that farmers be educated on the importance of planting other nutrient-rich crops. Furthermore, they should be informed about alternative means of obtaining funds, such as entrepreneurial activities, and using their farms as collateral to access the required agricultural inputs.

Keywords: Climate change, Food crops, Food security, Household food security, Irrigation system, Nutrient-rich crops

Paper type: Research paper

Type of Review: Peer Review

1. Introduction and Background to the Study

Irrigation systems have emerged as a pivotal means of increasing agricultural productivity and ensuring food security on a global scale (Bazin et al., 2017; Jambo et al., 2021). As a viable alternative to rainfall-dependent agriculture, which is susceptible to climate change-induced water scarcity (Gohar et al., 2015; Muluneh et al., 2017). Irrigation plays a crucial role in addressing food security challenges, particularly in developing countries where smallholder farmers heavily rely on rain-fed practices to ensure food availability at the household and national levels. Various studies have underscored the adverse impact of rainfall variability on food security (Kinda and Badolo, 2019; Naheed, 2023). Food security, as defined by the FAO, IFAD, UNICEF, WFP, and WHO (2019), refers to a situation where food is available, accessible, safe, and nutritionally adequate, meeting the dietary needs and preferences for a healthy and active life.



Recognising the significance of irrigation systems in mitigating the impact of rainfall variability on food security, different countries have been advised to adopt irrigation practices to ensure food availability and alleviate the problem of food insecurity (Fanadzo, 2012; URT, 2013; Hanson, 2013; Bazin et al., 2017; Christian et al., 2019). In Ethiopia, farmers were encouraged to adopt irrigation systems to bolster food production, reduce poverty, and enhance the country's GDP (Bacha et al., 2011; Beshir, 2018; Jambo et al., 2021). In Tanzania, the government has implemented various regulatory frameworks to promote irrigation as a means of enhancing productivity and ensuring food security, including the National Irrigation Policy of 2010, the National Agriculture Policy of 2013, and the Agricultural Sector Development Strategy – II 2015/2016–2024/2025. Consequently, public irrigation schemes, such as the Rufiji River Basin Irrigation Scheme, have been established in Tanzania with the assumption that practicing irrigation can effectively address food insecurity at both the household and national levels.

Rufiji District is one such region where irrigation systems are being practiced, thanks to the presence of the Rufiji River Basin. With water abstraction estimated at 12,788 million m³ for existing and planned irrigation and hydropower developments, constituting 45% of the total available 28,382 million m³ of water in the basin (Shughude, 2016), Rufiji District holds the potential to achieve food security through irrigation activities. The availability of water enables the cultivation of diverse food crops, including cereals like maize and paddy, as well as fruits and vegetables. Therefore, water resources within the Rufiji River Basin empower local community members to produce sufficient food for both consumption and commercial purposes. Studies conducted by Oni et al. (2011) and Jambo et al. (2021) have demonstrated that farmers involved in irrigation projects are more likely to achieve food security compared to dryland farmers.

Additionally, in Tanzania, some farmers have adopted irrigation systems in their agricultural practices, leading to improved productivity (Theis et al., 2018; Mgendi, 2022; Bagambilana and Rugumamu, 2023). This improvement is partly attributed to the utilisation of technological advancements, such as water pumps and irrigation services, where people pay for access to water resources (Caretta et al., 2015). However, the studies by Oates et al. (2017) and Kansal and Nyamsha (2021) also highlights that small-scale farmers practicing irrigation in sub-Saharan Africa face challenges, including limited access to technology and insufficient funds to purchase agricultural inputs, perpetuating food insecurity. Given the varied outcomes observed in previous studies regarding irrigation systems' impact on food security, this study was conducted to ascertain the contributions of irrigation systems at the household level in Rufiji District, where the Rufiji River Basin exists. Specifically, the study aimed to determine the awareness on the contribution of irrigation systems to food security, the types of crops cultivated through irrigation systems, and the number of meals consumed by households practicing irrigation in the study area. Additionally, the study sought to identify the challenges faced by smallholder farmers in adopting irrigation systems in the study area. The findings from this study provides valuable insights and strategies for effectively implementing regulatory frameworks, such as the National Irrigation Policy of 2010 and the National Agriculture Policy of 2013, and align with the pursuit of Sustainable Development Goal (SDG) number 2 which is about “Zero Hunger”

2. Theoretical Framework

The Entitlement to Food Theory, developed by Sen (1980), serves as the guiding framework for this study. Sen's theory posits that the issue of food security is not solely about food supply failure but primarily about food access (Kurniawan, 2016). The focus of the Entitlement to Food Theory lies in the possession of wealth and resources that can be exchanged for food or used to acquire it through other means. According to the theory, individuals can access food if they have the financial means to purchase it, access to land for agricultural cultivation, technological knowledge for farming practices, and agricultural inputs to ensure successful harvests. Sen (1980) categorised four types of entitlements or legal ways of acquiring food. The first is trade-based entitlement, which refers to the ability to buy or sell food. The second is produced-based entitlement, which involves the capability to grow and produce food through agricultural practices. The third is own labour-based entitlement, which relates to the ability to sell one's skills or labour power to procure or produce food. The last is inheritance and transfer-based entitlement, which involves obtaining

food from the government, organisations, including Civil Society Organisations (CSOs), or other individuals in the society, such as remittances. This study primarily focuses on the second category, the produced-based entitlement, as it pertains to the ability to grow and produce sufficient food through agricultural practices. This choice is driven by the study's examination of irrigation systems and their impact on food security in the study area. The Entitlement approach concentrates on each individual's access to resources, including water, and views hunger as a result of the failure to access a bundle of resources sufficient to produce enough food for all people at all times (Mende et al., 2015).

The theory is highly applicable to this study as it assesses whether the entitlement to technology (irrigation) could play a significant role in contributing to food security in the study area. Specifically, the study aims to determine whether the water resources available in the Rufiji River Basin, which entitle the community to irrigate their farms, can effectively address food insecurity in the region. Previous research by Mende (2015) indicated that entitlements to food security, such as the number of cattle owned, membership in farmers' groups, and engagement in non-agricultural activities, were critical factors in enhancing food security. Building on this finding, it is reasonable to suggest that providing entitlement to irrigation technology (both traditional and modern) to community members in the study area could alleviate the problem of food insecurity.

3. Methodology

This study was conducted in Rufiji District, due to the presence of the Rufiji River Basin, which enables irrigation systems. This district is known for its significant engagement in irrigation practices among many households involved in agricultural activities. The research design employed for this study was cross-sectional research design which was selected based on the study's objectives. The study aimed at determining community awareness of the contribution of irrigation systems to food security, the types of crops cultivated through irrigation systems in the study area, and whether the number of meals consumed by households practicing irrigation includes all essential food groups (vitamins, carbohydrates, protein, fats, and oils) required by the body. The study also sought to identify the challenges facing farmers practicing irrigation in the Ikwiriri Ward, Rufiji District.

Purposive sampling was utilised to select households practicing irrigation systems in the study area. Subsequently, a simple random sampling technique was employed to select 60 households for the study. This sample size was chosen due to the homogeneity of the collected data, as the population exhibited uniform geographical positions, culture, and practices. Purposive sampling was also employed to select participants for two Focus Group Discussions (FGDs). The first focus group consisted of community development officers, village chairpersons, executive village officers, ward executive officers, extension officers, and hamlet leaders. The second focus group comprised farmers, with 4 to 5 female participants planting different crops through irrigation systems in the study area. Each focus group had 8 and 10 participants, respectively. Triangulation of data was ensured through various sources, including household surveys using questionnaires with closed and open-ended questions for households practicing irrigation, interviews with the FGDs, and documentary review of secondary information from existing literature (Talakvadze, 2013).

The documentary review method involved examining different research works related to crops planted in other irrigation schemes. This information was used to assess whether the crops planted by farmers enable them to achieve food security, either through consumption or through the sale of produce to acquire other necessary food substances or not. Additionally, the review of literature aimed to determine the number of meals per day in societies practicing irrigation systems and the challenges faced by farmers in irrigation schemes. The relevant literature was sourced through platforms like Google and Google Scholar, using search terms such as "irrigation system and food security," "number of meals per day for farmers practicing irrigation agriculture," "food consumed by smallholder farmers in irrigation schemes," and "challenges facing farmers in irrigation schemes." The information collected through household surveys was descriptively analysed using the Statistical Package for Social Sciences (SPSS) to obtain frequencies and percentages. The qualitative data collected from the FGDs were thematically analysed through content

analysis. Transcribed information from the FGDs was coded based on the points agreed upon during the discussions, and these coded points were used to develop themes for the discussion in this paper.

4. Findings and Discussion

This section highlights the ways in which the irrigation system contributed to food security in the study area. It addresses various aspects, including the awareness of small-scale farmers regarding the contribution of irrigation systems to food security, the types of food crops cultivated through irrigation, the number of meals consumed per day to assess the adequacy of essential nutrients, and the challenges faced by farmers practicing irrigation systems in the study area. Data presented in this section were subjected to both descriptive and thematic analyses.

Firstly, the study explored the level of awareness among small-scale farmers about how irrigation systems contribute to food security. The descriptive analysis of the data revealed the extent to which farmers were informed about the benefits of irrigation in ensuring food availability and accessibility. Secondly, the study examined the kinds of food crops that were cultivated through irrigation systems in the study area. Through both descriptive and thematic analyses, the study elucidated the variety of crops grown using irrigation practices, contributing to food diversity and potential nutritional benefits. Thirdly, the number of meals and the types of food consumed per day by households practicing irrigation were assessed to determine whether the food provided essential nutrients or not. Descriptive analysis allowed an understanding of the dietary patterns and potential nutrition gaps among the farming communities. Lastly, the study identified and explored the challenges faced by farmers who practiced irrigation systems in the study area. Thematic analysis was employed to categorise and analyse the common obstacles encountered, and shedding light on the factors hindering the optimal utilisation of irrigation for food security. The combination of descriptive and thematic analyses facilitated a comprehensive understanding of how the irrigation system impacts food security in the study area. The findings contribute to enhancing knowledge and devising strategies to further improve the effectiveness of irrigation practices in ensuring food availability, access, and nutritional adequacy for the local communities.

4.1 Awareness of the contribution of irrigation system to food security

Information on the awareness of the contribution of irrigation systems to food security was collected through Focus Group Discussions (FGDs) with the households practicing irrigation in the study area. The findings revealed that community members indeed understood the significance of irrigation systems for food security in their locality. However, they faced various challenges, primarily related to the lack of essential inputs. During the FGDs, participants expressed their experiences and viewpoints as one stated that:

"...Irrigation system contributes to food security in this community because most farmers are getting food by irrigating their planted crops. The problem is that they cannot plant large farms because they use canes and buckets to irrigate their farms. Only a few households can buy pumps for irrigating their farms." (Focus Group Discussion 1, Ikwiriri Ward, March 2021)

Furthermore, a respondent added:

"I am planting different types of vegetables on my farm because it is very close to the river, so it is easier to fetch water by bucket and irrigate my plants mostly in the morning and evening. This activity enables me to earn money, which help me to take care of my family by buying food, paying school fees, and fulfilling other family needs." (Respondent 34, Ikwiriri Ward, March 2021)

These quotes indicate that while the community members are aware of irrigation's role in food security, many farmers lack access to proper equipment, such as pumps, to irrigate larger farms. As a result, most farmers engaged in subsistence farming, while only a few used advanced technology for irrigation, leading to food production for both consumption and commercial purposes. These findings are consistent with the study conducted by Bont et al. (2019) in Kilimanjaro, who identified the emergence of different classes of farmers based on their use of groundwater irrigation technologies, with some engaging in subsistence

farming and others in commercial agriculture. The reliance on poor technology, such as canes and buckets for irrigation, negatively impacted food security as it limited farmers' ability to produce enough food throughout the year. One respondent highlighted this issue, stating:

"...the food we produce in our farms cannot sustain us until another harvesting season. We use hand hoes for digging and buckets for irrigating, so we can't plant big farms. So, to survive, we are forced to buy food until we harvest again in the next season." (Respondent 16, Ikwiriri Ward, March 2021)

These findings align with the Entitlement to Food Theory, which emphasises the possession of wealth materials as a means to acquire food. The failure to possess essential agricultural inputs, such as water pumps and tractors, hinders farmers from producing enough food throughout the year, leading to food insecurity. To address these challenges, interventions are necessary, such as empowering community members through entrepreneurial activities that provide them with the funds to purchase required equipment, including pumps, fertilisers, and seeds, ultimately leading to increased harvests. Moreover, providing education on effective farming practices is crucial in empowering farmers and reduce the problem of food insecurity in the long term.

4.2 Crops cultivated through the irrigation system and their contribution to food security

The study gathered information on the types of crops grown in the study area through responses from individual respondents and participants in the Focus Group Discussions (FGDs). The respondents were asked to specify the crops they planted using irrigation systems, while the FGD participants were asked to identify the common crops cultivated through irrigation in the study area. The findings regarding the types of crops grown through irrigation systems are presented in Table 1.

Table 1: Types of crops planted in the study area

Types of crops	Per cent
Maize	80
Watermelon	8.3
Paddy	6.7
Okra	3.3
Tomatoes	1.7
Total	100

The Table 1 provides a comprehensive overview of the different crops that are cultivated using irrigation systems in the study area. The data collected from both individual respondents and FGDs participants were analysed and compiled to offer a detailed account of the crop diversity fostered by irrigation practices in the region. The variety of crops grown plays a significant role in enhancing food security by providing a diverse range of food options for consumption and potential commercial purposes. Furthermore, results in Table 1 demonstrate the agricultural richness and potential of the study area, which benefits from the availability of irrigation systems facilitated by the presence of the Rufiji River Basin. The cultivation of various crops, including cereals such as maize and paddy, as well as fruits and vegetables, signifies the utilisation of water resources to enable the production of sufficient food for both household consumption and commercial purposes.

It is worth noting that this crop diversity is made possible due to the proximity of farms to the river, which allows for easier access to water using buckets and other manual irrigation methods. However, the lack of advanced technology, such as water pumps, hampers some farmers' ability to cultivate larger farms and achieve higher levels of food security. The findings further highlight the need for interventions to empower farmers by introducing entrepreneurial activities to generate income for purchasing necessary equipment and inputs, ultimately leading to increased agricultural productivity and food security in the study area. Furthermore, the study findings presented in Table 1 indicate that the majority of farmers in the study area are primarily focused on planting maize as their main crop through irrigation systems. This preference for maize cultivation is attributed to its relative resistance to insect attacks compared to other crops.

Respondents cited that maize cultivation is less expensive than planting other crops like tomatoes, which require significant investments in terms of inputs and care.

The study's FGDs participants also echoed the popularity of maize cultivation, highlighting that it is a staple food that can be consumed even before full maturity. This makes maize a versatile crop that can be used for both food and business purposes. However, it was observed that only a few farmers with sufficient financial resources opt to plant watermelons and tomatoes, which are primarily bought by middlemen and transported to other regions for commercial purposes. While maize remains a prominent crop due to its affordability and versatility, the findings suggest that there is potential for cultivating other types of food crops, such as vegetables and fruits, in the study area. Farmers, especially those with access to local technology and assistance from extension officers, can diversify their crops to include watermelon, tomatoes, and other nutritious foods. This diversification can not only improve food security at the household level but also create business opportunities by satisfying the needs of the local and external markets. Regarding the consumed food substances and the number of meals per day, the study reveals that the most common foods in the study area are *ugali* (maize porridge) or rice, often accompanied by beans. The lack of variety in food consumption is attributed to its affordability and accessibility to most households. While maize and beans are staple foods, it is essential for farmers to understand the importance of consuming a balanced diet that includes all the required nutrients for human health.

The study findings emphasises the need for farmer education on balanced diets and the significance of consuming diverse food groups to achieve food security. Proper nutrition is crucial to prevent diseases and ensure the overall well-being of the community. Encouraging farmers to grow a wider range of crops, rich in essential vitamins, proteins, carbohydrates, fats, and oils, can be facilitated through economic empowerment initiatives. To support this, farmers should be educated on accessing credit from financial institutions, using their farmland as collateral, and formalising land ownership to secure funds for agricultural inputs. The findings underscore the importance of implementing the National Irrigation Policy of 2010, which can lead to increased food production and improved livelihoods in the study area and the nation as a whole. Hence, this study highlighted the significance of irrigation systems in contributing to food security in the study area. However, the challenges faced by farmers, such as the lack of modern equipment and limited access to inputs, hinder their ability to maximise crop diversity and achieve higher levels of food security. Implementing strategies to empower farmers economically, diversifying crop cultivation, and promoting nutrition education can pave the way for sustainable food security in the study area.

4.3 The consumed food substances and number of meals per day

The study collected information on the number of meals and the consumed food substances per day from various sources, including respondents, participants in the FGDs, and documentary reviews. The aim was to determine whether the consumed food contained all the required nutrients for a balanced diet, which is essential for food security. According to Dansinger (2019), a balanced diet should include foods rich in protein, such as fish, meat, poultry, dairy products, eggs, nuts, and beans; fats found in dairy products, nuts, and oils; carbohydrates from fruits, vegetables, whole grains, and beans; vitamins, including A, B, C, D, E, and K; essential minerals, and water.

The study findings reveal that in the study area, the most commonly consumed food items are *ugali* or rice, often paired with beans. However, few households consumed vegetables. The preference for *ugali* or rice with beans is attributed to its affordability and accessibility to most families. The FGDs corroborate this information, indicating that the majority of families in the study area opt for *ugali* or rice with either beans or vegetables due to their affordability. The presence of vegetables and other types of food in the market indicates that there are opportunities for farmers to diversify their crops to meet the nutritional needs of the community. However, the limited financial capacity of most farmers hinders them from exploring this potential. The documentary review indicates that in other irrigation schemes like Kinyope and Kitere, paddy, maize, and vegetables are cultivated on a small scale by only a few farmers. This suggests the possibility of cultivating crops that provide essential nutrients while also increasing food availability. The

findings highlight a gap in the understanding of food security in the study area. Many community members viewed food security as merely having enough food, irrespective of its nutritional value. This misconception poses a risk to their health and well-being, as it can lead to malnutrition and related health problems. Addressing this knowledge gap was very crucial for promoting food security in the study area. Educating farmers on the importance of consuming a balanced diet and diversifying their crops to include nutritionally-rich foods can significantly improve food security.

Maximising the utilisation of the Rufiji River Basin, provides farmers with an opportunity to grow a variety of crops that provide the necessary nutrients for a balanced diet. This approach not only ensures food security for the community but also creates opportunities for income generation through commercial sales of surplus produce. Implementing the National Irrigation Policy of 2010 is key to achieving these goals. By empowering farmers with knowledge, resources, and access to credit, the study area can improve agricultural productivity and enhance food security for its residents. Therefore, addressing food security in the study area required a multi-faceted approach that includes diversifying crop cultivation, promoting nutrition education, and empowering farmers economically. With the proper utilisation of the Rufiji River Basin and the implementation of the National Irrigation Policy, the study area can achieve sustainable food security and improved livelihoods for its residents. Table 2 presents the findings on the number of meals per day in the study area. The majority of households (61.7%) reported having three meals per day, while 38.3% could manage only two meals per day. These findings align with the recommendations of Mattson et al. (2014), who suggest that people should have three meals daily, along with snacks, to meet their nutritional needs. However, the content of the meals is a concern, as many respondents reported consuming primarily *ugali* or rice with beans, indicating a lack of dietary diversity.

Table 2: Number of meals consumed per day

Number of meals	Per cent
Once	0.0
Twice	38.3
Thrice	61.7
Total	100

The documentary review highlights that the number of meals and the kinds of food consumed can vary depending on the availability of food, resources, and the health status of individuals in different regions and countries. This emphasises the importance of promoting a balanced diet that meets nutritional needs for good health. The study reveals that many community members lack awareness of the importance of consuming a balanced diet and fail to access a variety of food items, such as vegetables and other nutrient-rich foods. This knowledge gap presents an opportunity for education and interventions to encourage farmers to diversify their crops and improve dietary diversity for better nutrition.

Moving on to the challenges facing farmers in the irrigation scheme at Ikwiriri Ward, respondents mentioned several significant issues, including lack of capital, crop diseases, limited education in agricultural practices, and crop theft. Lack of access to funds for purchasing agricultural inputs, such as manure, is a common problem, leading to the use of local alternatives like animal dung, which may not provide optimal results. The reliance on traditional tools like cane and buckets for irrigation also limits the scale of farming operations. Education emerges as a key factor in addressing these challenges. Equipping farmers with knowledge and skills in agricultural practices can help them improve productivity and make better use of available resources. Additionally, proper education on the importance of a balanced diet can influence farming choices and promote the cultivation of diverse crops.

The documentary review supports the findings from the FGDs, indicating that issues like inadequate water supply, lack of market access, livestock damaging crops, and shortages of agricultural inputs are common challenges faced by farmers in irrigation schemes. These challenges need to be addressed to maximise the

potential benefits of irrigation systems in reducing food insecurity. Also, this study findings highlighted the need for agricultural and nutritional education in the study area to improve food security. Encouraging farmers to diversify their crops, adopt better irrigation practices, and make use of available water resources effectively can contribute to enhanced productivity and reduced food insecurity. Addressing the challenges facing farmers through supportive policies and interventions aligned with the National Irrigation Policy of 2013 will play a crucial role in achieving sustainable food security in the study area and beyond.

4.4 Challenges facing farmers in the irrigation scheme at Ikwiriri Ward

The challenges facing farmers who practiced irrigation systems in the study area have been clearly identified through data collected from respondents and FGD participants, as well as the information from the documentary review. These challenges include:

- (i) **Lack of Capital:** Many smallholder farmers struggle with limited financial resources to invest in their agricultural activities. This lack of capital hampers their ability to purchase essential inputs like seeds, fertilisers, and pesticides, as well as modern irrigation equipment, such as water pumps.
- (ii) **Crop Diseases:** Farmers face the risk of crop diseases, which can significantly reduce yields and income. Without proper knowledge and access to pest and disease management techniques, farmers may lose a substantial portion of their harvest.
- (iii) **Lack of Education in Agricultural Practices:** Limited knowledge and skills in modern and sustainable agricultural practices can lead to suboptimal farming methods. Proper education and training are essential to improve agricultural productivity and resource management.
- (iv) **Theft of Crops:** Crop theft is a common problem in many rural areas, and it poses a significant threat to farmers' livelihoods. Without adequate protection measures, farmers may suffer losses due to theft of their produce.
- (v) **Busting of Pipes and Inadequate Water Supply:** The irrigation infrastructure may suffer from technical issues such as pipe bursts, leading to water wastage and inefficient water distribution. Inadequate water supply can hinder the success of irrigation systems.
- (vi) **Lack of Market Access:** Access to reliable markets is crucial for farmers to sell their produce at fair prices. Without proper market linkages, farmers may struggle to find buyers for their crops, leading to reduced income.
- (vii) **Livestock Destroying Corps:** Conflicts between farmers and livestock can result in damage to crops, affecting agricultural productivity.
- (viii) **Shortage of Inputs:** Farmers may face difficulties in accessing quality seeds, fertilisers, and other agricultural inputs, limiting their ability to achieve higher yields.

Addressing these challenges requires a multi-faceted approach. The government and relevant stakeholders need to invest in agricultural extension services to provide farmers with knowledge and skills in modern agricultural practices. Providing access to credit and financial services can help farmers overcome the capital constraints. Strengthening irrigation infrastructure and water management can enhance water efficiency and address water-related challenges. Furthermore, creating market linkages and value chains can help farmers connect with potential buyers and improve their income. Implementing measures to prevent crop theft and addressing livestock-farmer conflicts can also contribute to improved food security and farmer well-being. Therefore, the findings emphasise the importance of comprehensive interventions to empower smallholder farmers and maximise the potential benefits of irrigation systems in ensuring food security and poverty reduction in the study area and beyond. The National Irrigation Policy of 2013 needs to be effectively implemented with a focus on addressing these challenges to achieve sustainable agricultural development and food security.

5. Conclusion and Recommendations

The conclusions drawn from the study are well-supported by the data and findings presented. It is evident that being aware of the contribution of irrigation systems to food security is crucial, but it is not sufficient on its own. To achieve food security, it is essential to empower smallholder farmers with the knowledge and resources needed to improve agricultural practices and access necessary inputs. The study rightly

emphasises the importance of empowering farmers to adopt good agricultural practices and use improved technologies such as water pumps, fertilisers, and tractors. These interventions can lead to increased productivity, which is a key factor in ensuring food security. By improving productivity, farmers can not only meet their own food needs but also have surplus produce to sell in the market, contributing to food security at both the household and regional levels.

Moreover, the study's emphasis on educating the community about the importance of consuming a balanced diet is crucial. Many farmers in the study area may not be fully aware of the significance of having a diverse and nutritious diet. By understanding the importance of consuming all the required food substances, farmers may be motivated to plant a variety of crops to meet their nutritional needs. This can lead to increased production of fruits, vegetables, and other nutritious crops in the study area, making them potential suppliers to other regions with limited access to such food items. Hence, the study provides valuable insights into the complexities of achieving food security through irrigation systems. It highlights the need for a holistic approach that combines awareness, empowerment, education, and technological support to ensure sustainable agricultural development and food security in the study area and beyond. The study's recommendations can serve as a basis for policymakers and development agencies to design targeted interventions and policies to address the challenges faced by smallholder farmers and promote food security in the region. Hence, it is recommended that:

- (i) Existing extension officers at the local government level, farmers can receive essential guidance on good agricultural practices. Such knowledge-sharing initiatives can lead to increased productivity, reduced crop losses, and overall improved agricultural outcomes.
- (ii) Empowering farmers to use their assets, particularly land, as collateral for loans from financial institutions is an important step in addressing the challenge of access to agricultural inputs. Many smallholder farmers face financial constraints, and providing them with the means to access credit can enable them to invest in improved technologies and inputs, ultimately leading to enhanced food production.
- (iii) Furthermore, streamlining the process for obtaining title deeds from the environmental department is crucial in securing farmers' land rights. Clear land ownership can provide farmers with greater confidence and security, leading to more long-term investments in their farming practices.
- (iv) The recommendation to educate the community on the importance of consuming a balanced diet is vital in improving nutrition and overall health. Through various channels, including writings, mass media, and nutritionists, the government and relevant organisations can raise awareness about the significance of diverse and nutritious food consumption. Additionally, utilising community development workers can be an effective way to disseminate this information at the local level.
- (v) Lastly, encouraging farmers to plant different types of food, beyond just maize, can diversify their diet and improve food security. By promoting the cultivation of a wide range of crops, including fruits, vegetables, and legumes, the community can have access to a variety of nutrients, contributing to better health and wellbeing.

Implementing these recommendations will require coordinated efforts between various stakeholders, including the government, local authorities, development organisations, and community leaders. By taking these steps, the study area can work towards achieving food security and contributing to the larger national goal of poverty reduction and improved agricultural development as outlined in the National Irrigation Policy.

References

- Bacha, D., Namara, R., Bogale, A., & Tesfaye, A. (2015). Impact of small-scale irrigation on household poverty: empirical evidence from the Ambo district in Ethiopia. *Irrigation and Drainage*, 32(1): 1-10. DOI: 10.1002/ird.550.

- Bagambilana, F. R., & Rugumamu, W. M. (2023). Determinants of farmers' adaptation intent and adoption of adaptation strategies to climate change and variability in Mwanza District, Tanzania. *Environmental Management*. DOI: 10.1007/s00267-023-01792-2.
- Bazin, F., Hathie, I., Skinner, J., & Koundouno, J. (2017). *Irrigation, food security and poverty lessons from three large dams in West Africa*. London: International Institute for Environment and Development, UK and the International Union for Conservation of Nature, Ouagadougou, Burkina Faso. <https://www.iied.org/sites/default/files/pdfs/migrate/17610IIED.pdf>.
- Beatus, S. (2011). Economics of irrigated crops in Kinyope and Kitere Irrigation Schemes in Lindi and Mtwara Districts. <http://www.suaire.suanet.ac.tz:8080/xmlui/bitstream/handle/123456789/173/STANSLAUS%20BEATUS%202011.pdf?sequence=1&isAllowed=y>.
- Beshir, H. (2018). The impact of irrigation on poverty reduction and food security at the household level in South Wollo, Ethiopia. *Eastern Africa Social Science Research Review*, 34(1): 65-107. <https://muse.jhu.edu/article/699302/pdf>.
- Bont, C., Komakech, H., & Veldwisch, G. J. (2019). Neither modern nor traditional: Farmer-led irrigation development in Kilimanjaro Region, Tanzania. *World Development*, 116: 15-27. DOI: 10.1016/j.worlddev.2018.11.018.
- Christian, M., Obi, A., & Agbugba, I. (2019). Adoption of irrigation technology to combat household food insecurity in the resource-constrained farming systems of the Eastern Cape Province, South Africa. *South African Journal of Agricultural Extension*, 47(2): 94-104. DOI: 10.17159/2413-3221/2019/v47n2a506.
- Dansinger, M. (2019). What does a healthy diet include? <https://www.webmd.com/diet/qa/what-does-a-healthy-diet-include>.
- Fanadzo, M. (2012). Revitalizing smallholder irrigation schemes for poverty alleviation and household food security in South Africa: A review. *African Journal of Agricultural Research*, 6(10): 2188-2197. DOI: 10.5897/AJARX11.051.
- FAO, IFAD, UNICEF, WFP, & WHO. (2019). The state of food security and nutrition in the World 2019: Safeguarding against economic slowdowns and downturns. Rome, FAO. <https://www.unicef.org/media/55921/file/SOFI-2019-full-report.pdf>.
- Food and Agriculture Organisation of the United Nations (FAO) (2019). Nutrition guidelines and standards for school meals: a report from 33 low and middle-income countries. Rome. <http://www.fao.org/3/CA2773EN/ca2773en.pdf>.
- Food and Agriculture Organisation of the United Nations (FAO). (2011). Eating well for good health. http://www.fao.org/fileadmin/templates/feedingminds/pdf_nu/EW_intro.pdf.
- Gohar, A. A., Amer, S. A., & Ward, F. A. (2015). Irrigation infrastructure and water appropriation rules for food security. *Journal of Hydrology*, 520: 85-100. DOI: 10.1016/j.jhydrol.2014.11.036.
- Jambo, Y., Alemu, A., & Tasew, W. (2021). Impact of small-scale irrigation on household food security: evidence from Ethiopia. *Agriculture & Food Security*, 10(21): 1-16. <https://agricultureandfoodsecurity.biomedcentral.com/articles/10.1186/s40066-021-00294-w>.
- Kansal, M. L., & Nyamsha, D. (2021). Challenges of food security in Tanzania: need for precise irrigation. In *Hydrological Extremes*, 363-380. DOI: 10.1007/978-3-030-59148-9_25.
- Kurniawan, B. (2016). Food security and entitlement: a critical analyses. https://www.researchgate.net/publication/297879694_Food_Security_and_entitlement_a_critical_analysis.
- Mattson, M. P., Allison, D. B., Fontana, L., & Harvie, M. (2014). Meal frequency and timing in health and disease. Proceedings of the National Academy of Sciences. <https://agricultureandfoodsecurity.biomedcentral.com/>.
- Mende, D. H., Mwatawala, M. W., & Kayunze, K. A. (2015). Entitlement to the food security approach explains food security in the southern highlands of Tanzania more than other theories. *Asian Journal of Agriculture and Rural Development*, 5(3): 64-76. <http://aessweb.com/journal-detail.php?id=5005>.
- Mgendi, G., Mao, S., & Qiao, F. (2022). Does agricultural training and demonstration matter in technology adoption? The empirical evidence from small rice farmers in Tanzania. <https://www.sciencedirect.com/>.

- Muluneh, A., Stroosnijder, L., Keensstra, S., & Biazin, B. (2017). Adapting to climate change for food security in Ethiopia's Rift Valley dry lands: supplemental irrigation, plant density and sowing date. *The Journal of Agricultural Science*, 155(5): 703-724. DOI: 10.1017/S0021859616000897.
- Naheed, S. (2023). An overview of the influence of climate change on food security and human health. *Achieve on Food Nutritional Science*, 7(2023): 1-11. DOI: 10.29328/journal.afns.1001044.
- Oates, N., Mosello, B., & Jobbins, G. (2017). Pathways for irrigation development: policies and irrigation performance in Tanzania. <https://creativecommons.org/licenses/by-nc/2.0/legalcode>
- Oni, S. A. Maliwichi, L. L., & Obadire, O. H. (2011). Assessing the contribution of smallholder irrigation to household food security compared to dryland farming in Vhembe district of Limpopo province, South Africa. *African Journal of Agricultural Research*, 6(10): 2188-2197. <http://www.academicjournals.org/AJAR>
- Shughude, Y. W. (2016). Estuarine environmental and socio-economic impacts associated with upland agricultural irrigation and hydropower developments: the case of Rufiji and Pangani Estuaries, Tanzania. https://link.springer.com/chapter/10.1007/978-3-319-25370-1_11
- Talakovadze, A. (2013). Cross-border cooperation for HIV/AIDS prevention and impact mitigation in the Southern Caucasus and Russian Federation. https://www.wvi.org/sites/default/files/DESK%20REVIEW%20REPORT_HIV-MIGRATION_WV%202013_0.pdf.
- Theis, S., Lefore, N., Meinzen-Dick, R., & Bryan, E. (2018). What happens after technology adoption? Gendered aspects of small-scale irrigation technologies in Ethiopia, Ghana, and Tanzania. *Agriculture and Human Values*, 35: 671–684. <https://link.springer.com/article/10.1007/s10460-018-9862-8>.
- URT. (2010). *The National Irrigation Policy*. Dar es Salaam: Ministry of Water and Irrigation <https://www.nirc.go.tz/uploads/publications/sw1528369803-National%20Irrigation%20Policy.pdf>.
- URT. (2013). National Agriculture Policy. Dar es Salaam: Ministry of Agriculture Food Security and Cooperatives. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.kilimo.go.tz%2Fuploads%2Fregulations%2FNational_Agricultural_Policy_of_2013.doc&wdOrigin=BROWSELINK.
- URT. (2013). *Tanzania in figures 2012*. Dar es Salaam: National Bureau of Statistics Ministry of Finance. https://www.nbs.go.tz/nbs/takwimu/references/Tanzania_in_figures2012.pdf.
- URT. (2015). Agricultural Sector Development Strategy – II 2015/2016–2024/2025. https://www.gafspfund.org/sites/default/files/inline-files/6.%20Tanzania_Agriculture%20and%20Food%20Security%20Strategy_0.pdf.



NAVIGATING THE CONUNDRUM OF AGRICULTURAL COMMODITY PRICE FLUCTUATIONS AND HOUSEHOLD WELFARE IN TANZANIA

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ABSTRACT

Agricultural commodity price fluctuations pose a complex challenge for developing countries, engendering a predicament akin to Timmer's policy conundrum - the confluence of desiring lower prices to benefit consumers and higher prices to bolster production. This research endeavours to untangle this dilemma by examining the impact of changes in agricultural commodity prices on household welfare in Tanzania, employing a non-separable agricultural model. Drawing on four waves of national panel survey data spanning from 2008 to 2015, elasticities as the basis for analysis were calculated. Subsequently, these elasticities inform the compensating variation framework, facilitating an assessment of both the static and dynamic repercussions of shifts in agricultural commodity prices on household welfare. Notably, this evaluation considers household net-market positions and strata. Our findings, derived from an exploration of static and dynamic effects, demonstrate that households' welfare experienced degradation owing to diminished prices of agricultural commodities in comparison to scenarios featuring elevated agricultural prices. Evidently, the extent of these effects varies among different household strata and net-market positions. These outcomes underscore the adverse impact of modest fluctuations in agricultural commodity prices on the well-being of household farmers. This, in turn, accentuates the policy imperative of fostering agricultural growth and transformation. Thus, opting for reduced agricultural prices does not align with households' preferences. The discoveries in this article advocate for policies centred on augmenting market access and elevating agricultural product prices, potentially leading to substantial enhancements in household welfare. Further exploration is warranted to delve into areas such as the interconnectedness of welfare effects stemming from changes in agricultural commodity prices with households, integrating considerations of consumption, production, and shadow wages, particularly in the context of the Covid-19 pandemic.

Keywords: Agricultural commodity, Household welfare, Compensating variation, Market access, Price fluctuation,

Paper type: Research paper

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1. Introduction and Background to the Study

Agriculture, as a pivotal sector, holds the potential to propel economic growth and development. Stable and appropriate pricing of agricultural commodities is imperative for sustaining agricultural expansion, enhancing economic progress, and ultimately elevating household welfare. Regrettably, persistent fluctuations in agricultural commodity prices persist, garnering substantial scholarly attention across both developed and developing nations. Notably, global agricultural commodity prices exhibit inherent volatility, a concern that has gained prominence among policy circles and political circles alike. Evidently, extreme price fluctuations pose a direct threat to a nation's advancement, impinging on household welfare with notable impacts on substantial portions of the food budget expenditure. An illustrative example lies in the consortium of developed and leading emerging economies (G20), which prominently prioritised food



price escalation and food security on their agenda in 2011. This issue was particularly amplified during the agricultural price surges of 2008/2009 and 2010/2011, causing apprehensions about the repercussions of extreme price variations in Low and Middle-Income Countries (LMIC) (UNCTAD, 2011; Usman et al., 2021). Additionally, policymakers and practitioners face the challenge of addressing pervasive constraints within the agricultural sector. Such constraints include the elevated transaction costs, significant post-harvest losses throughout the food supply chain, insufficient agricultural research and extension programs, and restricted market access. Collectively, these constraints have adverse impact on production, consumption, and labour allocation in economies dependent on agriculture (Sakho-Jimbira & Hathie, 2020; Mila et al., 2022)..

Government entities and international organisations have responded with diverse trade control mechanisms, including direct interventions and market instrument utilisation, in an attempt to mitigate risks linked to extreme price fluctuations (Davis et al., 2021). In Tanzania, for instance, decision-makers and politicians have taken concerted steps to grapple with the issue of agricultural price volatility. The government has embraced viable policy measures such as "agricultural trade policy reforms," typified by initiatives like Kilimo Kwanza (Agriculture First) in 2009 and the Agricultural Sector Development Strategy (ASDP I & II). Additionally, the Value-Added Tax (VAT) for food commodities subject to the East Africa Community (EAC) Customs duty was lowered to 18 percent in 2008/2009. These reforms have led to some mitigation of the welfare loss experienced by impoverished rural households from 2000 to 2007 (Leyaro et al., 2010). However, critiques assert that the implemented trade policies have been suboptimal, potentially distorting local and international market prices of agricultural products (Stiglitz, 1987; Anderson & Nelgen, 2012; Dorward et al., 2004; Espitia et al., 2022). Tanzanian cereal crop prices, for instance, have displayed instability over time, with the period from 2006 to 2017 showcasing fluctuating prices. Maize prices, for instance, declined by 50 percent in 2006 and plummeted to negative 19 percent in 2007. A subsequent uptick ensued, with a 57 percent increase in 2008, followed by another drop to 17 percent and negative 10 percent between 2008 and 2010, a period coinciding with the economic crisis.

Notably, cereal crop prices witnessed a rapid increase between 2010 and 2011, with sorghum prices peaking at 61 percent, followed by maize (41 percent), rice (32 percent), and beans (20 percent) (BOT, 2017). This aligns with findings by Leyaro (2009) indicating seasonal shifts in world food prices during 2007, with prices surging even in the peak month of January 2007 and during the economic crunch of 2008. Although prices saw a subsequent decline, they rebounded in June 2010, reaching their zenith in 2011. The imposition of Covid-19 restrictions (food safety regulations) and protectionist measures took a toll on trade prospects and revenues for livestock, pulses, and horticulture (Barichello, 2020). Nevertheless, the extent to which these fluctuations in agricultural prices influence household welfare remains a pivotal empirical question addressed in this paper.

While substantial market liberalisation has taken place, several commodities continue to exhibit indicative pricing (Amolegbe et al., 2021). The Tanzanian government has at times directly intervened, issuing directives through the National Food Reserve Agency (NFRA) and the Cereals and Other Produce Board of Tanzania (CPB) (Chapoto & Jayne, 2009). Notably, periodic export bans on cereal crops, particularly maize, have been envisioned since the early 1980s as a strategy to stabilise prices and ensure ample domestic food supply (Wilson et al., 2021). Consequently, recurrent bans on cereal exports, including instances in 2003, 2006, 2008, 2011, and from late 2017 to October 2018, have emerged. However, these bans, while aimed at benefiting domestic consumers by lowering prices, pose challenges to domestic producers and traders by curtailing their access to higher prices in international markets (Wilson et al., 2021). These interventions, despite their acknowledged contributions to agricultural production and export-based economic growth, have been characterised by frequent policy shifts in Tanzania.

The stated interventions not only deplete public resources allocated for societal needs, but also potentially disrupt the proper functioning of the market over the long term (Stiglitz, 2021). Furthermore, excessive interventions could undermine the objectives of the African Continental Free Trade Agreement (AfCFTA), designed to support Africa's agribusiness, foster new regional markets for farmers, enhance the agro-value

chain, and potentially reduce the need for imports (Oloruntoba, 2023). The sustainability of such policies remains a topic of debate, given the resultant market uncertainty, which could yield enduring ramifications for future food production, employment, trade prospects, and, consequently, household welfare.

2. Literature Review

The fluctuation of agricultural prices can give rise to risks that exacerbate poverty and reduce the adequacy and quality of nutritional intake (Adekunle et al., 2020; Elijah, 2010; Headey & Ruel, 2022). Moreover, these fluctuations can hinder the utilisation of non-food essentials like education, healthcare, clean water, and suitable housing, thereby yielding longer-term detrimental effects on human capital investment and, subsequently, a nation's growth and development (Anríquez et al., 2013; World Bank, 2011). Similarly, Mafuru and Marsh (2003) and Ma et al. (2022) argue that the overall impact of agricultural price changes can either augment or erode household welfare, contingent upon factors such as the role of specific crops in foreign currency generation, employment, GDP contribution, and interconnections with other sectors, which could be exacerbated or ameliorated by extreme price changes.

The immediate effect of agricultural price shifts on household welfare is likely to be ambiguous, as price increases can benefit producers while detrimentally affecting net consumers. The degree of benefit hinges on variables including the product in question, household income patterns, and governmental policy reactions (Mafuru & Marsh, 2003; Rahman et al., 2022). Notably, rural households experience a partial shield from the impacts of extreme price fluctuations, in contrast to cash-crop farmers, commercial grain producers, and wage labourers (Benson et al., 2008; Fan et al., 2022). Conversely, elevated agricultural prices can fuel increased future production, higher export earnings, and reduced trade deficits, albeit at the expense of augmented consumption costs. Conversely, reduced agricultural prices can hamper supply while rendering consumption less costly (Tefere et al., 2012). Similarly, substantial fluctuations in agricultural product prices can reverberate across firms' financial health. For instance, lower/higher prices for agricultural goods can gradually diminish/boost farmers' revenues/sales, or discourage/encourage their continued engagement in agriculture.

According to Nigatu et al. (2020) the extended periods of elevated commodity prices correlate with heightened production and, consequently, augmented farm revenues. Adekunle et al. (2020) delve into the welfare implications of agricultural price shifts across a spectrum of food categories in Nigeria, validating that households adjusted their consumption and production patterns to mitigate welfare deterioration, revealing significant discrepancies across net-market positions and household strata. However, the net effect is inherently contingent on the household's net-market position and geographical location (Tiberti & Tiberti, 2018). Notably, households oriented toward net food sales and those oriented toward net food purchases experience divergent consequences in response to agricultural price hikes or drops. Building on this premise, Minot and Dewina (2015) assert that households' welfare directly hinges on agricultural price shifts, shaping their purchasing power variations and net profit from agricultural endeavors. Accordingly, urban and landless rural households encounter more pronounced welfare reductions during periods of soaring agricultural prices. Globally, agricultural commodity prices exhibited a 4 percent decline annually from 2018/19 to 2021/22 but subsequently surged by an average of 12 percent over the same period (Nigatu et al., 2020).

Diao and Kennedy (2016) discerned that inconsistent policies surrounding maize export bans in Tanzania translated into maize price reductions of 7 to 26 percent. Ultimately, this intervention curtailed maize farmers' profitability and disincentivised maize production. Notably, the microeconomic analysis of the relationship between agricultural commodity price changes and household welfare remains relatively limited, heterogeneous, and inconclusive (Leyaro, 2009; Mbegalo & Yu, 2016; Martuscelli, 2017; Tiberti & Tiberti, 2018). However, none of these studies have systematically scrutinised welfare implications based on periods of elevated and diminished agricultural prices for produce in Tanzania. Consequently, this paper contributes in two key ways: first, it employs actual agricultural product price shifts to evaluate the welfare implications of both higher and lower agricultural prices; second, it provides empirical evidence, rooted in the non-separable agricultural model, regarding the welfare ramifications of the noted higher and lower

agricultural prices during the periods of 2008/2012 and 2013/2015 in Tanzania, thereby offering distinct policy directions for the Tanzanian government grappling with the classical policy dilemma outlined by Timmer et al. (1983).

3. Methodology

Central to this article is the examination of the extent to which fluctuations in agricultural prices, whether higher or lower, impact household welfare in Tanzania. Traditionally, the evaluation of welfare has commonly been undertaken within the framework of Computable General Equilibrium (CGE). CGE is a prevailing approach for welfare analysis due to its recognition as a coherent economy-wide model for probing trade policy matters (Abbott et al., 2007). Nevertheless, McKibbin (1998) argues that sectoral aggregation in the CGE framework overlooks the nuanced analysis of specific markets. Echoing this sentiment, Rama and Sa (2005) contend that CGE estimates are often predicated on stringent assumptions, and the variables employed are frequently aggregated to a degree that might undermine the inherent relationships. Additional scholarship further questions the suitability of CGE for disaggregated analysis (Abbott et al., 2007; Piermartini & Teh, 2005; Narayanan et al., 2010). Thus, the employment of a model that aligns more closely with the pertinent sector is imperative. In this context, the Quadratic Almost-Ideal Demand System (QUAIDS) and Compensating Variation (CV) models are adopted.

QUAIDS: The accurate estimation of the welfare implications stemming from price fluctuations within the agricultural sector hinges on dependable price and income elasticities, typically derived from utility-based demand models. Consequently, we deploy the QUAIDS model introduced by Banks et al. (1997), an extension of the Almost Ideal Demand System (AIDS) model initially formulated by Deaton and Muellbauer (1980). The QUAIDS model stands as a suitable choice for demand analysis, striking a balance between ease of estimation and consistency with the essential demand properties, including symmetry, additivity, and homogeneity, inherent in the AIDS model, as corroborated within the literature (Tafere et al., 2010; Lecocq & Robin, 2015). Foremost, the QUAIDS model offers a ranking of demand systems featuring more comprehensive Engel and price effects relative to alternative demand systems like the AIDS model. At its core, the model operates on an indirect utility function, which subsequently informs the distribution of expenditure shares across diverse categories of goods and services. These shares are then modified with demographic characteristics to yield insights.

To circumvent the endogeneity in expenditure and contend with selection bias due to observed zero consumption, the unique maximum likelihood estimator articulated by Lecocq and Robin (2015) is employed to estimate the QUAIDS coefficients. Subsequently, the derived elasticity coefficients from the QUAIDS model find application within the CV framework, which accommodates profit function and substitution effects. This framework delves into the investigation of how household welfare is influenced by variations in agricultural produce prices, be they elevated or diminished, within the Tanzanian context. In essence, this research uniquely combines the strengths of the QUAIDS model with the insights offered by the CV framework to comprehensively assess the welfare implications stemming from fluctuations in agricultural prices, thereby providing a nuanced understanding of the dynamics at play. As generalised by (Lecocq & Robin, 2015), the budget share w_i^h on consumption bundle $i = 1, \dots, N$ for a household $h = 1, \dots, H$ with log total-expenditure x^h , log price N -vector p^h and a 's household demographic characteristics are expressed as:

$$w_i^h = a_i + g_i R^h + b_i \{x_h - a(R^h, q)\} + l_i \frac{\{x^h - a(R^h, q)\}^2}{b(R^h, q)} + m_i^h \quad (1)$$

with the nonlinear price aggregators

$$a(R^h, q) = a_0 + a R^h + \frac{1}{2} R^h G R^h \quad (2)$$

$$b(R^h, q) = \exp(b R^h) \quad (3)$$

where $a = (a_1, \dots, a_N)'$, $b = (b_1, \dots, b_N)'$, $G = (g_1, \dots, g_N)'$, q , is the vector of all parameters, and u_i^h is an error term.

The QUAIDS model, underpinning the assessment of welfare implications driven by agricultural price fluctuations, operates within specific structural constraints, each reinforcing distinct assumptions including:

- (i) Homogeneity Assumption: This fundamental tenet posits that nominal variables' proportional increments do not alter the underlying dynamics of real variables. Consequently, expenditures remain invariant when subjected to proportional increases in both price and income.
- (ii) Additive Assumption: Underpinning the additive assumption is the notion that a consumer's expenditure fully depletes the allocated budget. This principle ensures that total spending aligns with the available resources, reinforcing the coherence of the model's outcomes.
- (iii) Slutsky Symmetry Assumption: This crucial premise facilitates the dissection of the Marshallian demand function into two constituent components: the substitution effect and the income effect. This disentanglement transpires in response to price modifications, and it contributes to a deeper comprehension of how these effects interact and ultimately impact welfare as a result of price changes¹

$$\text{Adding up: } \sum_{i=1}^n a_i = 1 \quad \sum_{i=1}^n b_i = 0 \quad \sum_{i=1}^n g_{ij} = 0 \quad \sum_{i=1}^n l_i = 0$$

$$^2\text{Homogeneity: } \sum_{i=1}^n g_{ji} = 0 \tag{4}$$

$$^3\text{Slutsky symmetry: } g_{ji} = g_{ij}$$

The QUAIDS model accommodates these key assumptions to provide a structured framework for evaluating the intricate interplay between agricultural price shifts and household welfare. The model leverages these assumptions to offer a comprehensive analysis, shedding light on the multifaceted repercussions of changing prices within the agricultural domain on the broader welfare landscape in Tanzania.

The seminal document by Ray (1983) employed the QUAIDS model to account for the socio-demographic effects of household behaviour in terms of demand and allocation of expenditure among other goods. Other researchers such as Pollak & Wales (1981), Tafere et al. (2010) and Sola (2013) have followed a similar vein. Household heterogeneity enters the demand system through α^h 's and are modelled as a linear combination of a set of socio-demographic characteristic (s^h) observed in the data in such a way that $\alpha^h = As^h$, and $A = (\alpha^h)$. According to (Pollak & Wales, 1981), this process is called the translog approach which allows the level of demand to depend upon demographic variables.

3.1 Elasticities

The legitimate need for estimating the QUAIDS model is to obtain a precise value of expenditure (income) and price elasticities that are necessary for assessing the welfare consequences arising from agricultural price changes, particularly when a compensating variation model is applied. Hence, the elasticities for the Quadratic AIDS model with demographic characteristics of the household can be obtained by differentiating equation (1) with respect to x_j and only after omitting h superscripts ((Lecocq & Robin, 2015). Doing so, we end up with the following:

¹ All must sum to zero overall equations except the constant term, which must sum to one (additivity).

² Log price parameters must sum to zero within each equation.

³The effect of the log price i on the budget share j must be equal to the effect of the log price j on the budget share i .

$$m_i = b_i + 2t_i \frac{\{x - a(R, q)\}}{b(R, q)} \quad (5)$$

$$m_{ij} = g_{ij} - m_i(a_j + g_j R) - I_i b_j \frac{\{x - a(R, q)\}^2}{b(R, q)} \quad (6)$$

Following (Lecocq & Robin, 2015), the expenditure elasticities are then given by $e_i = m_i/w_i + 1$; uncompensated price elasticities by $e_{ij}^u = m_{ij}/w_i - d_{ij}$ where d_{ij} is the Kronecker delta; and compensated price elasticities by $e_{ij}^c = e_{ij}^u + e_i w_j$.

3.2 Addressing Endogeneity and Welfare Assessment

In estimating a demand system, the endogeneity issue often emerges, particularly in developing countries where both quantity and expenditure data are collected. This challenge is widely acknowledged in the literature, with the practice of employing the ratio of observed expenditures and quantity, termed as unit value, as a proxy for commodity prices. This practice, as highlighted by Deaton and Muellbauer (1980), Deaton (1997), and Dong et al. (1998), captures not only the variation in market prices faced by households but also encapsulates endogenous factors arising from disparities in commodity quality. Utilising unit value as a price surrogate is predicated on the understanding that it inherently accounts for quality distinctions.

Empirical demand analyses relying on survey data typically encounter difficulties in treating total consumer expenditure as endogenous. This stems from measurement errors commonly associated with zero expenditure signifying non-consumption, as well as the infrequent nature of certain purchases (Keen, 1986; Meghir & Robin, 1992; Beatty, 2006; Tafere et al., 2010). In light of these challenges, to address endogeneity and consider socio-demographic factors and zero expenditure, the expenditure and Hicksian price elasticities are estimated via a modified version of the approach proposed by Poi (2012). This modified method, introduced by Lecocq and Robin (2015) through the "aidsills Stata command," effectively tackles endogeneity problems in demand systems. This approach serves to not only rectify measurement errors and account for zero expenditure scenarios but also incorporates the complex interplay of socio-demographic attributes.

On the other hand, while extreme agricultural price fluctuations can introduce uncertainty into factors such as production, consumption, trade gains, and consequently household welfare, discerning the specific effects of price increases or decreases under the non-separability of the agricultural model presents a challenge (Mukasa, 2015). The direct and total effects are not straightforward to deduce, particularly for net buyers and sellers. Addressing this uncertainty, Mukasa (2015) and Friedman and Levinsohn (2002) assert that the sign and magnitude of welfare effects linked to price changes lack theoretical predictability. However, it remains feasible to estimate the monetary measure of welfare impact, referred to as the "compensating variation," contingent upon food price elasticity.

3.3 Compensating variation model

The evaluation of welfare changes consequent to agricultural price shifts commonly employs the compensating variation (CV) framework, initially formulated by Deaton and Muellbauer (1980). The CV represents the monetary quantum necessary to reestablish the pre-change utility level following price adjustments. Similar concepts have been utilised by other researchers to scrutinise price effects on household welfare (Tafere et al., 2010; Badolo & Traore, 2015; Roosen et al., 2022). Recognising that a substantial proportion of households are not solely consumers but also producers of food, Vu and Glewwe (2011) advocate for the incorporation of both price and income effects to holistically assess the influence of price variations on implicit profits.

Price fluctuations induce common effects. Primary effects stem from direct price impact on welfare, while secondary effects are attributed to substituting relatively more expensive items with more affordable alternatives (Minot & Goletti, 2000; Alem & Söderbom, 2012; Tefera & Shahidur, 2012). These effects are

estimated via first and second-order Taylor expansion techniques, as elaborated in detailed model specifications by Friedman and Levinsohn (2002) and Faharuddin et al. (2022). In its functional form, the first-order Taylor expression becomes

$$CV \approx \sum_{i=a,n} \frac{Dp_i}{p_i} \left(p_i (Q_i - C_i) \right) \quad (7)$$

Equation (7) CV represents only the immediate effect of price changes (see, (Vu & Glewwe, 2011). However, the first order of Taylor's expansion of the expenditure function would be an upper bound because it would not consider the possibility of a consumer switching from expensive food items to cheaper ones. Thus, Friedman & Levinsohn (2002), Porto (2010), and Vu & Glewwe (2011) contend that the expression for the short-run effect is derived by taking the second-order Taylor series expansion of the expenditure function that allows the substitution effect. Therefore, the second order of Taylor's expansion of the expenditure functions becomes:

$$CV \approx \underbrace{\sum_{i=a,n} \frac{\Delta p_i}{p_i} \left(p_i (Q_i - C_i) \right)}_{\text{first.....order.....effects}} + \underbrace{\frac{1}{2} \sum_{i=a,n} \sum_{j=a,n} \left(\frac{\Delta p_i}{p_i} \right) \left(\frac{\Delta p_j}{p_j} \right) \{ E [C_i / p_j] \} (p_i C_i)}_{\text{substitution.....effects}} \quad (8)$$

where $\frac{dp_i}{p_i}, \frac{dp_j}{p_j}$ are the percentage change in prices of the commodity i , and j p_i, p_j are the prices of commodity i j and, $(Q_i - C_i)$ denotes the net market position of the household, and $E [C_i / p_j]$ is the Hicksian compensated elasticity.

3.4 Data Type, Source, and Management

In addressing the central inquiry, the study leveraged available Tanzanian national panel survey data (TZNPS) spanning four distinct periods: 2008-2009, 2010-2011, 2012-2013, and 2014-2015. These data serve as a critical benchmark for elucidating the repercussions of fluctuating agricultural product prices. The TZNPS data originates from the Tanzanian National Bureau of Statistics (NBS), constituting an invaluable resource for conducting a comprehensive analysis within a non-separable agricultural household framework. The distinctive feature of these panels lies in their encompassing national consumption and production data, thereby furnishing the requisite information for estimating the welfare effects resulting from shifts in prices.

The TZNPS data encompasses both quantity and monetary value information, extending to own-production and in-kind data expressed in terms of quantity. However, the challenge arises as this dataset does not directly encompass a comprehensive spectrum of price information for different consumed goods. To surmount this limitation, a common strategy involves the use of unit prices, calculated by ratio of expenditures to quantities purchased, as proposed by Deaton and Muellbauer (1980). The derived unit prices serve to impute monetary values for own production and in-kind food consumption, essential for calculating food expenditure and varying budget allocations. However, missing data points pose a challenge, arising from instances where households either did not purchase or consume certain commodities during the survey period, or where data pertaining to these transactions were incompletely recorded. To address this, a strategy akin to that employed by Tafere et al. (2010) was adopted: missing unit values were substituted with the mean unit values of corresponding areas.

Additionally, TZNPS records non-food expenditures, often reported over differing and possibly longer recall periods. These figures, frequently recorded monthly and annually, were harmonised to ensure compatibility with the agricultural production module's reference period. The production module encapsulates critical insights into households' harvested quantities, quantities sold in the market, and associated monetary values. These data illuminate the household's net market position, a pivotal variable for estimating the welfare impact of price changes, factoring in whether the household assumes the role of

a net buyer or net seller.

Finally, before engaging the consumption and production modules, three preliminary data screening steps were executed. Firstly, the discrepancies between the list of food items in the consumption module and the agricultural production module were addressed, with the focus on matching items with comparable levels of processing, a conventional practice. Secondly, food items underwent aggregation into broader categories like cereals, starches, pulses, nuts, vegetables, meat, and fish, a step that contributes to manageable complexity and facilitates estimation (Ecker & Qaim, 2011). Lastly, data standardisation was pursued to ensure uniform units of measurement, culminating in the calculation of weighted averages for each food category. To construct a balanced panel data reflecting periods of high and low prices (2008/2009 and 2010/2011, and 2012/2013 and 2014/2015 respectively), waves 1 and 2, and waves 3 and 4 were merged, yielding sample sizes of 2344 and 2306 households respectively. Notably, the inclusion of variables such as age, primary and secondary education, household size, and the number of children served as control mechanisms to account for the influence of other sociodemographic characteristics in each panel.

4. Findings and Discussion

4.1 Descriptive Statistics

A comprehensive overview of descriptive statistics pertaining to the variables of interest across the four survey rounds of TNPS is presented in Table 1. These variables encapsulate critical aspects, including the distribution of food category shares and demographic attributes associated with the household head in Tanzania. These elements hold substantial relevance in the estimation of welfare effects resultant from fluctuations in prices, bearing profound implications for household dynamics and well-being. The depicted descriptive statistics offer a foundational understanding of the central tendencies and variabilities inherent in the data, fostering a contextual comprehension of the subsequent analyses. By detailing the prevalence and diversity within food category shares and key demographic attributes, this table furnishes a basis for more nuanced interpretations of the ensuing findings.

Table 1: Descriptive Statistics of the Head of the Household (Expenditure share %) and Demographic Characteristics

Variable	2008/9		2010/11		2012/13		2014/15	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
Cereals	0.403	0.282	0.395	0.269	0.406	0.274	0.345	0.251
Starches	0.080	0.156	0.071	0.133	0.073	0.139	0.073	0.124
Pulses	0.052	0.113	0.049	0.098	0.047	0.101	0.046	0.089
Nuts and seeds	0.042	0.081	0.034	0.069	0.033	0.067	0.036	0.076
Vegetables	0.165	0.213	0.169	0.203	0.165	0.195	0.190	0.203
Fruits	0.027	0.077	0.030	0.085	0.028	0.077	0.036	0.073
Meat and fish	0.233	0.244	0.250	0.230	0.248	0.231	0.274	0.232
Demographic characteristics								
(HH)	0.749	0.434	0.753	0.431	0.754	0.431	0.715	0.451
Age (HH)	45.861	15.494	45.880	15.773	45.315	16.096	44.415	14.987
Household size	4.967	2.839	5.216	3.105	5.055	3.152	4.848	2.848
Number of Children	2.696	2.214	3.926	3.726	2.555	2.303	2.579	2.226
Primary education%	0.584	0.493	0.571	0.495	0.571	0.495	0.553	0.497
Secondary and above education%	0.416	0.493	0.429	0.495	0.429	0.495	0.447	0.497
Sample Size	3265		3924		5010		3352	

Note: HH represents the household head, S.D represent the standard deviation

Source: Author's computation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015).

The findings detailed in Table 1 underscore crucial trends and patterns within the data, shedding light on the dynamics of food expenditure and demographic attributes among Tanzanian households. Cereals

emerge as a dominant component of food expenditure, encompassing 40% of all food categories in 2008/2009. This share experienced a minor decline to 39.5% in 2010/2011, potentially influenced by significant commodity price shocks during that period. Subsequently, cereal expenditure shares exhibited a rebound, ascending to 40.6% in 2012/2013. However, a noteworthy reduction occurred in the fourth round (2014/2015), plummeting to 34.5%. This oscillation in expenditure patterns holds implications for food security and the overall well-being of Tanzanian households. While supply constraints may contribute to such variations, the interplay of price risks and government interventions, including export bans, could be contributing factors.

The category of meat and fish, alongside vegetables, constitutes the second most substantial group in terms of food consumption expenditure in Tanzania. Meat and fish consumption expenditure represented 23% in 2008/2009, averaging at 24% between 2010/2011 and 2012/2013, and peaking at 27.4% in 2014/2015. In parallel, vegetable consumption expenditure exhibited a stable share of approximately 16% between 2008/2009 and 2010/2011, subsequently escalating to 19% in 2014/2015. Conversely, starches, pulses, and nuts constitute the least significant portions of consumption expenditure, accounting for 7% of starches, 4% of pulses, and 3% of nut seeds. The demographic characteristics highlighted in Table 1 underscore an average household size of 5, an average household age of 45.7, and educational attainment figures where approximately 47% completed primary school while about 43% attained secondary education or higher.

Furthermore, Table 2 elucidates nominal prices of food commodities/categories and their growth rates. The data showcases a lack of stability, with fluctuations observed since 2008. Notably, cereal prices displayed an increase of nearly 12.57% between 2008 and 2011. Starches, nuts, and seeds experienced an approximate 30% increase, meat and fish witnessed a 17% rise, vegetables exhibited a 9.8% increase, and pulses registered a growth of 14.03%. These descriptive statistics provide a foundational understanding of the data distribution, enabling a preliminary assessment of key trends and variations. By delineating the intricate dynamics underlying food expenditure and demographic attributes, this analysis sets the stage for more in-depth interpretations and discussions.

Table 1: Descriptive Statistics of the Unit Prices (per kg) for Food Categories by Survey Rounds (Tanzanian shillings)

	2008/09		2010/11		2012/13		2014/15	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Cereal	969.5515	310.4254	1091.439	376.4167	1486.62	1024.007	1379.713	514.7778
Starches	538.9187	262.5751	702.3896	256.405	900.9052	414.2936	1122.808	700.8814
Pulses	1205.929	333.8116	1375.156	319.5779	1647.463	340.1636	1902.455	558.8656
Nuts and seeds	951.7403	569.9822	1246.433	460.9708	1423.405	800.8255	1867.378	1336.328
Vegetable	959.501	447.2804	1053.77	487.0604	1289.316	730.1369	1359.484	684.348
Fruits	648.0597	268.1918	845.2343	362.0121	1068.587	603.4696	1338.923	668.7464
Meat and fish	2483.516	1362.085	2923.214	1371.691	3857.102	2080.061	4443.925	2232.393
Mean % Change	2008/11		2011/13		2013/15		2008/15	
Cereal	12.57		36.21		-7.19		42.30	
Starches	30.33		28.26		24.63		108.34	
Pulses	14.03		19.80		15.48		57.76	
Nuts and seeds	30.96		14.20		31.19		96.21	
Vegetable	9.82		22.35		5.44		41.69	
Fruits	30.43		26.42		25.30		106.60	
Meat and fish	17.70		31.95		15.21		78.94	

Source: Author's computation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015)

4.2 Budget Shares, Compensated and Uncompensated Price Elasticities

In the pursuit of gauging the welfare repercussions stemming from price fluctuations within the agricultural sector, the application of a non-separable agricultural household model necessitates robust price and income elasticities. The subsequent analysis showcases the estimated budget share and expenditure

elasticities at the mean level across various food groups, as outlined in Table 3. This crucial endeavor enables a comprehensive comprehension of the intricate relationships between price changes, consumption behaviours, and household welfare. By scrutinising the budget shares and expenditure elasticities, this analysis unveils insights into the responsiveness of consumption patterns to shifts in prices, thus underscoring the potential ramifications for the overall well-being of households.

Table 2: Budget Shares of Food Categories and expenditure elasticities at Population Mean

	Budget Shares				Expenditure Elasticities			
	2008/9	2010/11	2012/13	2014/15	2008/9	2010/11	2012/13	2014/15
Cereals	0.390*** (0.006)	0.420*** (0.005)	0.410*** (0.005)	0.386*** (0.005)	0.979*** (0.022)	0.974*** (0.018)	0.979*** (0.020)	0.762*** (0.022)
Starches	0.079*** (0.003)	0.073*** (0.003)	0.073*** (0.003)	0.081*** (0.003)	0.804*** (0.064)	0.915*** (0.055)	1.015*** (0.059)	1.133*** (0.065)
Pulses	0.050*** (0.002)	0.048*** (0.002)	0.046*** (0.002)	0.044*** (0.002)	0.865*** (0.070)	0.742*** (0.062)	0.757*** (0.066)	0.668*** (0.075)
Nuts& seeds	0.040*** (0.002)	0.031*** (0.001)	0.031*** (0.001)	0.042*** (0.002)	0.737*** (0.064)	1.253*** (0.066)	1.250*** (0.062)	1.220*** (0.079)
Vegetables	0.155*** (0.004)	0.171*** (0.004)	0.165*** (0.003)	0.142*** (0.005)	0.714*** (0.042)	0.529*** (0.032)	0.560*** (0.033)	0.606*** (0.043)
Fruits	0.031*** (0.002)	0.014*** (0.003)	0.022*** (0.001)	0.037*** (0.002)	1.376*** (0.076)	2.029*** (0.320)	1.645*** (0.085)	1.522*** (0.073)
Meat and fish	0.256*** (0.005)	0.244*** (0.004)	0.252*** (0.004)	0.269*** (0.005)	1.287*** (0.028)	1.360*** (0.026)	1.275*** (0.026)	1.457*** (0.026)

Robust standard errors in brackets. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively.

Source: Author's computation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015)

A comprehensive overview of critical indicators, shedding light on the intricate dynamics of consumption patterns and their responsiveness to changes in prices and expenditures across various food categories is provided in Table 3. Cereals consistently occupy a substantial portion, constituting an average of 40% of all food categories. Following closely, meat and fish hold a notable share, accounting for an average of 25.5% across the surveyed rounds. The prominence of vegetables is evident, comprising an average of approximately 15% of the total food groups analysed. Conversely, food groups like nuts and oil, pulses, and starches exhibit comparatively smaller shares.

The examination of expenditure elasticities, calculated based on the mean values of the population for each survey round, reveals insightful trends. All estimated expenditure elasticities are positive and statistically significant at a 1% significance level. Notably, meat and fish, as well as fruits, emerge as luxury goods throughout the surveyed rounds. In contrast, staple food categories like cereals, pulses, vegetables, nuts, and seeds are categorized as normal goods. This trend is attributed to their prevalence in the diets of a substantial portion of the population. It is particularly intriguing that nuts and seeds exhibit expenditure elasticities surpassing one in the 2010/11, 2012/13, and 2014/15 survey rounds, suggesting a vulnerability to demand fluctuations. Turning to Table 4, the derived price elasticities are showcased, manifesting the characteristic inverse relationship between own-price elasticities and commodity prices. The presentation in Table 4 focuses solely on the computed price elasticities, streamlining the presentation for clarity.

Table 3: Uncompensated and Compensated Own-Price Elasticities of Food Demand at Population Mean

	Uncompensated Own-Price Elasticities				Compensated Own-Price Elasticities			
	2008/9	2010/11	2012/13	2014/15	2008/9	2010/11	2012/13	2014/15
Cereals	-1.102*** (0.034)	-1.077*** (0.030)	-1.031*** (0.029)	-0.794*** (0.036)	-0.720*** (0.033)	-0.667*** (0.029)	-0.629*** (0.028)	-0.500*** (0.033)
Starches	-1.463*** (0.080)	-1.649*** (0.085)	-1.525*** (0.086)	-0.938*** (0.061)	-1.400*** (0.080)	-1.582*** (0.086)	-1.450*** (0.087)	-0.847*** (0.062)
Pulses	-2.175*** (0.137)	-1.477*** (0.139)	-1.768*** (0.132)	-0.851*** (0.078)	-2.131*** (0.138)	-1.441*** (0.139)	-1.733*** (0.131)	-0.822*** (0.078)
Nuts & seeds	-1.419*** (0.067)	-2.229*** (0.119)	-1.875*** (0.089)	-1.433*** (0.068)	-1.390*** (0.068)	-2.190*** (0.120)	-1.835*** (0.090)	-1.382*** (0.069)
Vegetables	-1.065*** (0.047)	-0.955*** (0.043)	-1.055*** (0.042)	-0.663*** (0.051)	-0.955*** (0.048)	-0.864*** (0.042)	-0.963*** (0.042)	-0.577*** (0.049)
Fruits	-1.396*** (0.086)	-2.776*** (0.472)	-1.567*** (0.095)	-0.984*** (0.055)	-1.353*** (0.087)	-2.748*** (0.474)	-1.530*** (0.096)	-0.928*** (0.055)
Meat and fish	-1.187*** (0.029)	-1.132*** (0.036)	-1.105*** (0.028)	-0.966*** (0.028)	-0.858*** (0.027)	-0.800*** (0.038)	-0.784*** (0.027)	-0.573*** (0.030)

Robust standard errors in brackets. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively.

Source: Author's computation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015).

Table 4 offers an insightful exploration of uncompensated own-price elasticities, uncovering essential dynamics between price changes and the corresponding adjustments in consumption behaviours across different food categories. The concept of own-price elasticities encapsulates the percentage change in food consumption following a 1% alteration in the price of the respective food category. When the absolute value of the elasticity exceeds unity, the demand for a food group is characterised as price-elastic, signifying that changes in price lead to proportional adjustments in consumption. Conversely, a value between zero and one denotes price inelasticity, implying that changes in price result in proportionally smaller alterations in consumption. Aligned with consumption theory, the coefficients of compensated own-price elasticities display negativity and significance at a 1% level, substantiating the anticipated inverse relationship between price and consumption. This implies that higher prices correlate with reduced quantities demanded for each food group. Notably, except for nuts and seeds in the 2014/15 survey round, all other food categories exhibit price inelasticity, suggesting that changes in price have a relatively modest impact on quantity demanded.

A nuanced pattern emerges when comparing the magnitudes of uncompensated own-price elasticities across periods of high and low prices. Generally, these elasticities have higher absolute values during periods of high prices (2008/09-2010/11) and lower absolute values during periods of low prices (2012/13-2014/15). This pattern underscores the varying sensitivities of consumption to price changes across different economic conditions. Interestingly, despite the negativity property, the majority of food categories exhibit uncompensated own-price elasticities close to or greater than one. This signifies that uniform percentage reductions in food prices could lead to substantial demand increases. However, this upsurge in demand may come at the expense of reduced net sales, given the dual role of rural households as both producers and consumers.

Notable trends emerge in the changes of price elasticities over time. While price elasticities for cereals, starches, vegetables, and fruits experienced a decline from 2008/09 to 2011/12, the reverse trend was observed for pulses and meat and fish during the same period. Similarly, between 2012/13 and 2014/15, cereals, starches, nuts and seeds, and vegetables saw a reduction in price elasticities, while pulses and fruits showcased positive trends. Table 5 delves into the complex interplay between agricultural price changes and households' welfare, unpacking the nuances across various strata and net market positions. The analysis extends beyond first-order effects to include second-order effects, accounting for substitution and profit mechanisms.

Table 4: First and Second-Order Welfare Effects of Prices Changes (%)

	2008/11		2012/15		2008/15	2008/15
	1 st order	2 nd order	1 st order	2 nd order	D 1 st order	D 2 nd order
All	-22.87	-50.98	-20.23	-44.54	-11.57	-12.62
Urban	-21.81	-48.37	-20.23	-44.54	-7.25	-7.91
Rural	-22.87	-50.98	-19.77	-43.45	-13.56	-14.76
Net seller	-24.99	-56.22	-19.47	-42.73	-22.09	-24.00
Net buyer	-22.87	-50.98	-20.23	-44.54	-11.57	-12.62

Source: Author's estimation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015).

First-order effects are emblematic of immediate welfare repercussions driven solely by price changes, without considering the potential for commodity substitution. During the period of high prices (2008/09-2010/11), the study reveals an overall welfare gain of approximately 22.87%. This signifies that, on average, a typical Tanzanian household would have needed to reduce its expenditures by around 22.87% in 2011/12 to uphold the utility level achieved in 2008/09. Conversely, the effects of price decreases are strikingly pronounced, with households experiencing direct welfare gains of 20.23%. This implies that households would have required compensation amounting to 20.23% of their food expenditures in 2012/13 to counteract the impact of price decline between 2012/13 and 2014/15. As a result, household welfare gains deteriorated by 11.57% on average due to the price fall.

Divergent impacts emerge between net sellers and buyers. Net sellers experience welfare gains of 24.99% during periods of high prices, diminishing to 22.09% during periods of low prices. In contrast, net buyers achieve welfare gains of 22.87% and 20.23% during high and low-price periods, respectively. This dichotomy underscores the differential effects of price fluctuations on net market positions. The examination extends to rural and urban households, revealing substantial welfare deterioration associated with low prices. Urban and rural households witness welfare gains of 21.81% and 22.87%, respectively, during high prices, which recede to 20.23% and 19.77% during low prices. This signifies a decline of approximately 7.25% and 13.56% in urban and rural areas, respectively.

Considering substitution and profit mechanisms, second-order effects demonstrate enhanced welfare gains during periods of high prices, amounting to 50.98%. However, these gains decline to 44.54% during periods of low prices, indicating a considerable impact of agricultural price fluctuations on household welfare. When accounting for dynamic effects and comparing rural and urban households, welfare gains increase by 48.37% and 50.98%, respectively, during high prices, but diminish to 44.54% and 43.45% during low prices. Importantly, analysis by net-market positions highlights an uneven distribution of welfare gains associated with high agricultural prices. With the inclusion of substitution mechanisms, net sellers experience gains of 56.22% during high-price periods, which reduce to 22.09% during low-price periods. Similarly, net buyers achieve gains of 50.98% during high-price periods, declining to 11.57% during low-price periods.

5. Discussion of the Results

A comprehensive analysis of the impact agricultural price fluctuations on household welfare based on QUAIDS model and CV framework was done. *Ceteris paribus*, the leveraged assumptions of the models, offer a shedding light on the multifaceted repercussions of changing prices within the agricultural domain on the broader welfare landscape in Tanzania. The adverse impact is immense regardless of the strata and net market positions of the household. The findings of this study show that higher agricultural prices are associated with greater welfare gains for households, emphasising the potential benefits of policies aimed at bolstering agricultural prices. These findings corroborate the findings by Mafuru & Marsh, 2003; Ma et al., 2022) that the overall effects of agricultural price changes can either increase or decrease households' welfare.

Using AIDS and extended, and QUAIDS model Tefera & Shahdur (2012), and D'Haese & Van Huylenbroeck, 2005) show that household welfare gains more improvement when receiving higher prices

of their produce. On the other hand, this study's findings highlights the detrimental impact of low agricultural prices on household welfare. The observed decline in welfare due to low prices suggests the potential pitfalls of policies that fail to ensure favourable price conditions for agricultural commodities. Such policies could hinder agricultural growth and transformation, ultimately undermining the welfare of households dependent on agricultural activities. Supporting this argument, Diao and Kennedy (2016) discerned those inconsistent policies surrounding maize export bans in Tanzania translated into maize price reductions of 7 to 26 percent. Ultimately, this intervention curtailed maize farmers' profitability and disincentivised maize production.

These findings emphasise the intricate relationship between price fluctuations and household welfare, showcasing the multifaceted mechanisms that drive consumer responses and economic outcomes. Furthermore, the disparities between net sellers and buyers highlight the unequal distribution of welfare impacts, influencing economic decision-making and overall household well-being.

6. Conclusion and Implications of the Results

This study provides valuable insights into the complex relationship between agricultural price changes and households' welfare in Tanzania. By employing the QUAIDS model and the compensation variation (CV) framework, the research sheds light on the dynamics of price and expenditure elasticities, as well as the nuanced effects of high and low agricultural prices on household well-being. The findings underscore the significance of price and expenditure elasticities, with their absolute values notably higher during periods of high prices compared to low prices. The CV analysis reveals that higher prices are associated with greater welfare gains for households, emphasising the potential benefits of policies aimed at bolstering agricultural prices. Such policies could serve as incentives for increased agricultural production, fostering economic growth and enhancing the welfare of farming households. Conversely, the study highlights the detrimental impact of low agricultural prices on household welfare. This is particularly significant given the dominant role of agricultural production and trade in Tanzania's economy. The observed decline in welfare due to low prices suggests the potential pitfalls of policies that fail to ensure favourable price conditions for agricultural commodities. Such policies could hinder agricultural growth and transformation, ultimately undermining the welfare of households dependent on agricultural activities. The unequal distribution of welfare gains among net buyers and net sellers, as well as disparities across different strata of households, further emphasizes the need for targeted policy interventions. Efforts to improve market access and promote fair prices for agricultural products could play a pivotal role in mitigating these inequalities and fostering sustainable agricultural development.

As a forward-looking suggestion, the analytical approach employed in this study could be extended to examine the impact of external shocks, such as the Covid-19 pandemic, on agricultural prices and household welfare. This would provide valuable insights into the resilience of the agricultural sector in the face of unforeseen challenges and contribute to the formulation of adaptive policy measures. In essence, this research underscores the intricate web connecting agricultural prices, household welfare, and policy outcomes, offering valuable guidance for policymakers seeking to foster agricultural growth, ensure equitable outcomes, and enhance the well-being of Tanzanian households.

References

- Abbott, P., Bentzen, J., Huong, T. L., & Tarp, F. (2007). A Critical Review of Studies on the Social and Economic Impacts of Vietnam's International Economic Integration. *MPRA Paper*, (29789).
- Adekunle, C. P., Akinbode, S. O., Shittu, A. M., & Momoh, S. (2020). Food price changes and farm households' welfare in Nigeria: Direct and indirect approach. *Journal of Applied Economics*, 23(1): 409–425.
- Alem, Y., & Söderbom, M. (2012). Household-level consumption in urban Ethiopia: The effects of a large food price shock. *World Development*, 40(1): 146–162. <https://doi.org/10.1016/j.worlddev.2011.04.020>
- Amolegbe, K. B., Upton, J., Bageant, E., & Blom, S. (2021). Food price volatility and household food security: Evidence from Nigeria. *Food Policy*, 102, 102061. <https://doi.org/10.1016/j.foodpol.2021.102061>
- Anderson, K., & Nelgen, S. (2012). Trade barrier volatility and agricultural price stabilization. *World Development*, 40(1): 36–48.

- Anríquez, G., Daidone, S., & Mane, E. (2013). Rising food prices and undernourishment: A cross-country inquiry. *Food Policy*, 38: 190–202. <https://doi.org/10.1016/j.foodpol.2012.02.010>
- Badolo, F., & Traore, F. (2015). Impact of rising world rice prices on poverty and inequality in Burkina Faso. *Development Policy Review*, 33(2): 221–244.
- Banks, J., Blundell, R., & Lewbel, A. (1997). Quadratic Engel curves and consumer demand. *The Review of Economics and Statistics*, 79(4): 527–539.
- Barichello, R. (2020). The COVID-19 pandemic: Anticipating its effects on Canada's agricultural trade. *Canadian Journal of Agricultural Economics/Revue Canadienne d'agroeconomie*, 68(2): 219–224.
- Beatty, T. K. (2006). Zero Expenditures and Engel Curve Estimation. In *Presentation at the American Agricultural Economics Association Annual Meeting, Long Beach*, 23–26.
- Benson, T., Minot, N., Pender, J., Robles, M., & Von Braun, J. (2008). *Global food crises: monitoring and assessing impact to inform policy responses* (Vol. 19). Washington DC: International Food Policy Research Institution.
- Davis, K. F., Downs, S., & Gephart, J. A. (2021). Towards food supply chain resilience to environmental shocks. *Nature Food*, 2(1): 54–65.
- D'Haese, M., & Van Huylenbroeck, G. (2005). The rise of supermarkets and changing expenditure patterns of poor rural households case study in the Transkei area, South Africa. *Food Policy*, 30(1): 97–113.
- Deaton, A. (1997). *The analysis of household surveys: a micro econometric approach to development policy*. Baltimore: The Johns Hopkins University Press
- Deaton, A., & Muellbauer, J. (1980). An almost ideal demand system. *The American Economic Review*, 70(3): 312–326.
- Diao, X., & Kennedy, A. (2016). Economywide impact of maize export bans on agricultural growth and household welfare in Tanzania: A Dynamic Computable General Equilibrium Model Analysis. *Development Policy Review*, 34(1): 101–134.
- Dong, D., Shonkwiler, J. S., & Capps Jr, O. (1998). Estimation of demand functions using cross-sectional household data: The problem revisited. *American Journal of Agricultural Economics*, 83(3): 466–473.
- Dorward, A., Kydd, J., Morrison, J., & Urey, I. (2004). A policy agenda for pro-poor agricultural growth. *World Development*, 32(1): 73–89.
- Ecker, O., & Qaim, M. (2011). Analysing nutritional impacts of policies: An empirical study for Malawi. *World Development*, 39(3): 412–428.
- Elijah, O. A. (2010). Global food price increases and nutritional status of Nigerians: The determinants, coping strategies, policy responses and implications. *ARPN Journal of Agricultural and Biological Science*, 5(2): 67–80.
- Espitia, A., Evenett, S., Rocha, N., & Ruta, M. (2022). Widespread food insecurity is not inevitable: avoid escalating food export curbs: Global Economic Consequences of the War in Ukraine Sanctions, Supply Chains and Sustainability, 19.
- Faharuddin, F., Yamin, M., Mulyana, A., & Yunita, Y. (2022). Impact of food price increases on poverty in Indonesia: Empirical evidence from cross-sectional data. *Journal of Asian Business and Economic Studies* 30(2): 126-142
- Fan, L., ZHANG, H., & Khan, N. (2022). Commercial cash crop production and households' economic welfare: Evidence from the pulse farmers in rural China. *Journal of Integrative Agriculture*, 21(11): 3395–3407.
- Friedman, J., & Levinsohn, J. (2002). The distributional impacts of Indonesia's financial crisis on household welfare: A "rapid response" methodology. *The World Bank Economic Review*, 16(3): 397–423.
- Headey, D. D., & Ruel, M. T. (2022). *Food inflation and child undernutrition in low and middle income countries* (Vol. 2146). Washington DC: International Food Policy Research Institution.
- Keen, M. (1986). Zero Expenditures and the Estimation of Engel Curves. *Journal of Applied Econometrics*, 3(1): 277–286.
- IMF, O., & UNCTAD, W. (2011). *Price volatility in food and agricultural markets: Policy responses*. Italy: FAO.
- Lecocq, S., & Robin, J. M. (2015). Estimating almost-ideal demand systems with endogenous regressors. *Stata Journal*, 15(2): 554–573.
- Leyaro, V. (2009). Commodity Price Changes and Consumer Welfare in Tanzania in the 1990s and 2000s. *CREDIT Research Paper No. 10/01*.
- Leyaro, V., Owens, T., & Morrissey, O. (2010). Food price changes and consumer welfare in Tanzania 1991-2007. *CREDIT Research Paper No. 10/01*.

- Ma, M., Lin, J., & Sexton, R. J. (2022). The transition from small to large farms in developing economies: A welfare analysis. *American Journal of Agricultural Economics*, 104(1): 111–133.
- Mafuru, J. M., & Marsh, T. L. (2003). *An analysis of household food expenditure systems in Tanzania* (No. 1844-2016-152450). Martuscelli, A. (2017). Analysing the Impact of Price Shocks in Rural Economies: Do Household Responses Matter? *The Journal of Development Studies*, 59(9): 1518–1534.
- Mbegalo, T., & Yu, X. (2016). The impact of food prices on household welfare and poverty in rural Tanzania. Courant Research Centre. *Discussion Papers*, (216).
- Meghir, C., & Robin, J. M. (1992). Frequency of purchase and the estimation of demand systems. *Journal of Econometrics*, 53(1–3): 53–85.
- Mila, F. A., Nahar, A., Amin, M. R., Culas, R. J., & Ahmed, A. (2022). Empirical assessment of onion supply chain constraints in Bangladesh: a pre-covid to covid situation. *Journal of Agriculture and Food Research*, 10: 100418.
- Minot, N., & Dewina, R. (2015). Are we overestimating the negative impact of higher food prices? Evidence from Ghana. *Agricultural Economics*, 46(4): 579–593.
- Minot, N., & Goletti, F. (2000). *Rice market liberalization and poverty in Viet Nam* (Vol. 114). Washington DC: International Food Policy Research Institution. Narayanan, B. G., Hertel, T. W., & Horridge, J. M. (2010). Disaggregated data and trade policy analysis: The value of linking partial and general equilibrium models. *Economic Modelling*, 27(3): 755–766.
- Ndungu Mukasa, A. (2015). Empirical Essays on the Economics of Food Price Shocks: Micro-econometric Evidence from Uganda. Unpublished Doctoral Thesis. Trento: University of Trento.
- Nigatu, G., Badau, F., Seeley, R., & Hansen, J. (2020). *Factors Contributing to Changes in Agricultural Commodity Prices and Trade for the United States and the World* (No. 1477-2020-055). Oloruntoba, S. O. (2023). The political economy of the African Continental Free Trade Area and structural transformation in Africa. *Journal of Contemporary African Studies*, 1-17. DOI: <https://doi.org/10.1080/02589001.2023.2214715>.
- Piermartini, R., & Teh, R. (2005). *Demystifying modelling methods for trade policy*. WTO Discussion Paper (No. 10).
- Poi, B. P. (2012). Poi, B.P. (2012). Easy Demand-System Estimation with QUAIDS. *Stata Journal*, 12(3): 433–446.
- Pollak, R. A., & Wales, T. J. (1981). Demographic Variables in Demand Analysis. *Econometrica*, 49(6): 15-33.
- Porto, G. G. (2010). Food prices: household responses and spillovers. *Centre for Economic Policy Research*, 167. Rahman, M. C., Pede, V. O., & Balié, J. (2022). Welfare impact of asymmetric price transmission on rice consumers in Bangladesh. *Review of Development Economics*, 26(3): 1600-1617. Rama, M., & Sa, K. L. (2005). Impacts of WTO accession: can they be predicted? What to do about them? World Bank's Vietnam Development Report 2006. Ray, R. (1983). Measuring the costs of children: An alternative approach. *Journal of Public Economics*, 22(1): 89–102.
- Roosen, J., Staudigel, M., & Rahbauer, S. (2022). Demand elasticities for fresh meat and welfare effects of meat taxes in Germany. *Food Policy*, 106, 102194. Rudolf, R. (2019). The impact of maize price shocks on household food security: Panel evidence from Tanzania. *Food Policy*, 85: 40–54. DOI: <https://doi.org/10.1016/j.foodpol.2019.04.005>
- Sakho-Jimbira, S., & Hathie, I. (n.d.). The future of agriculture in Sub-Saharan Africa.
- Sola, O. (2013). Demand for food in Ondo state, Nigeria: Using quadratic almost ideal demand system. *Journal of Business Management and Economics*, 4(1): 1–19.
- Stiglitz, J. E. (1987). Some theoretical aspects of agricultural policies. *The World Bank Research Observer*, 2(1): 43–60.
- Stiglitz, J. E. (2021). The proper role of government in the market economy: The case of the post-COVID recovery. *Journal of Government and Economics*, 1:100004. <https://doi.org/10.1016/j.jge.2021.100004> Tafere, K., Taffesse, A. S., Tamiru, S., Tefera, N., & Paulos, Z. (2010). Food demand elasticities in Ethiopia: Estimates using household income consumption expenditure (HICE) survey data. *International Food Policy Research Institute, Documento de Trabajo del ESSP II*, 11: 1-39.
- Tefera, N., & Shahidur, R. (2012). Welfare Impacts of Rising Food Prices in Rural Ethiopia: A Quadratic Almost Ideal Demand System Approach. In *IAAE 2012 Conference in Brazil*.

- Tiberti, L., & Tiberti, M. (2018). Food Price Changes and Household Welfare: What Do We Learn from Two Different Approaches? *The Journal of Development Studies*, 54(1): 72–92.
- Timmer, C. P., Falcon, W. P., Pearson, S. R., & Bank, W. (1983). *Agriculture and Rural Development Dept. Economics and Policy Division*. Baltimore: Johns Hopkins University Press.
- Vu, L., & Glewwe, P. (2011). Impacts of rising food prices on poverty and welfare in Vietnam. *Journal of Agricultural and Resource Economics*, 36(1): 14–27.
- Wilson, W. C., Slingerland, M., Baijukya, F. P., van Zanten, H., Oosting, S., & Giller, K. E. (2021). Integrating the soybean-maize-chicken value chains to attain nutritious diets in Tanzania. *Food Security*, 13(6): 1595–1612.
- World Bank. (2011). *The world bank annual report 2011*. The World Bank.



THE IMPACT OF ORGANISATIONAL CULTURE ON TURNOVER INTENTIONS AMONG LECTURERS IN TANZANIA'S PUBLIC UNIVERSITIES

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ABSTRACT

Tanzania's public universities have been grappling with an unanticipated turnover of lecturers, a phenomenon that exerts adverse impacts on institutional operations. Empirical evidence suggests that organisational culture significantly influences employee turnover intentions, thus holding the potential to mitigate the departure of lecturers from these academic institutions. This study aims to investigate the correlation between organisational culture and employee turnover intentions among lecturers in Tanzania's public universities, drawing upon evidence from the context. Guided by the social exchange theory, the study employs a quantitative approach, utilising questionnaires to procure data from two prominent public universities: Mzumbe University and Moshi Co-operative University. The sample comprises 221 lecturers selected through a simple random technique. Both descriptive and inferential analyses were employed for data evaluation. The findings underscore that clan culture, hierarchy culture, adhocracy culture, and market culture exert significant and negative influences on turnover intentions when examined as individual variables. Moreover, employing a multiple regression model, the study establishes a negative correlation between organisational culture and turnover intentions. Consequently, the study concludes that organisational culture can effectively diminish turnover intentions within the cadre of lecturers in Tanzania's public universities.

Keywords: Employee turnover, Organisational culture, Public universities, Turnover intentions, Market culture.

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

Organisations heavily rely on human resources, often regarded as the primary drivers of organisational success. The significance of these resources has led organisations to make substantial investments in enhancing their skills and knowledge, aligning with both individual employee career aspirations and the broader organisational objectives (Aina & Atan, 2020). While the investment in human resources is pivotal, ensuring their sustained commitment presents a distinct challenge, one that is far from straightforward (Thomas & Joseph, 2015). The era of globalisation and the influence of market dynamics, compounded by



distinct legal frameworks worldwide, have ushered in heightened labour mobility (Qiwang & Xiaorui, 2020). Despite organisations' adoption of diverse strategies to enhance employee retention, the persistence of employee turnover remains a critical concern. The departure of a skilled workforce can profoundly undermine an organisation's performance and operational continuity. Notably, elevated employee turnover detrimentally impacts productivity, service quality, and the overall reputation of an organisation (Al-Suraihi et al., 2021).

In the realm of empirical investigations, organisational culture has garnered considerable attention as a factor linked to employee retention (Haggalla & Jayatilake, 2017; Lone & Nazir, 2020; Dadgar et al., 2013). Organisational culture encapsulates shared values, beliefs, traditions, and attitudes prevalent among employees within a specific organisation, evolving over time spent within that milieu. Consequently, it forges a collective identity among individuals affiliated with the same organisation. On a global scale, the challenge of retaining employees within higher education institutions stands as a pressing concern. The higher education sector is grappling with an alarming rate of employee turnover, a situation that poses significant ramifications for the quality of education and ancillary services offered by these institutions (Selesho & Naile, 2014). Given the substantial investments made by higher education institutions in the training and development of lecturers, addressing employee turnover in these contexts necessitates multifaceted strategies. Previous inquiries have connected lecturer turnover predicaments with inadequacies in salary structures, subpar working conditions, and other tangible and intangible benefits (Do et al., 2020; Matimbwa & Ochumbo, 2019; Mkulu, 2018). Notably, compared to studies focusing on other organisational forms, scant attention has been accorded in the literature to the nexus between organisational culture and lecturer retention within higher education institutions (Warter, 2019).

The landscape of lecturer retention within African public universities is notably more challenging compared to their Western counterparts. Pressing concerns such as working conditions and modest remuneration packages have been identified as pivotal drivers influencing academic staff turnover (Mulie & Sime, 2018; Amani & Komba, 2016; Mapolisa, 2014). The mounting burdens on lecturers, often burdened with an overwhelming array of tasks exacerbated by a dearth of adequately qualified staff, further exacerbate the situation (Mushemeza, 2016). In the context of Tanzania, the focus of this study, public universities grapple with analogous challenges that curtail their contributions to critical domains such as training, research, consultancies, and community engagement, which constitute their fundamental mandates. The study conducted by Amani and Komba (2016), delving into the correlation between job satisfaction and turnover intentions among lecturers in Tanzania's public universities, underscored the alarming frequency of lecturer turnover in these institutions due to diverse reasons. Consequently, universities have adopted an array of strategies aimed at lecturer retention, encompassing provisions for training opportunities, flexible work arrangements, enticing incentive schemes, and cultivating conducive working environments, among others (Matibwa & Ochumbo, 2019; Mutabuzi, 2019). However, despite Komba's (2016) call for further exploration into the determinants of employee retention, the impact of organisational culture has remained notably underexplored by researchers. In light of this context, this study embarks on an examination of the influence of organisational culture on lecturer turnover within Tanzania's public universities.

2. Literature Review

2.1 Theory Underpinned the Study

The study draws upon the social exchange theory, originally posited by American sociologist George Homans in 1958. This theory asserts that employees' actions and decisions within organisations are predicated on how these organisations treat them (Cropanzano et al., 2017). Social exchange theory contends that employee loyalty to an organisation is contingent on the quality of their experience therein. Consequently, employees are inclined to depart if the organisation fails to meet their expectations. The theory underscores a reciprocal relationship, wherein employees' choices stem from the interplay between their actions and the organisation's treatment of them (Yu et al., 2018). Organisational culture presents an experiential milieu that can either appeal to employees or deter them. In the context of perceived organisational culture, social exchange theory elucidates how it can influence employees' decisions regarding their tenure, potentially motivating them to remain or contemplate departure (Osman et al.,

2016). This theory rationalises that employees may opt to exit an organisation with an unsatisfactory culture in favour of one aligned with their preferences (Lone & Nazir, 2020). Therefore, the interaction between organisational culture and turnover intentions adheres to a principle of exchange: positive culture exchanges potentially correspond with retention, whereas negative exchanges may precipitate turnover.

2.2 Empirical Review

2.2.1 Key terms in this context

This section provides an overview of the key terms in the context of this study. It provides the historical perspectives of the universities in Tanzania and the findings of the previous empirical studies on the topics related to turnover intentions among employees in various work places. Turnover intentions in the context of this study encompass an employee's contemplations and plans to depart from an organisation within a specified timeframe. Such intentions tend to correspond with actual turnover, signifying a close nexus between turnover intentions and tangible turnover outcomes (Kurniawaty et al., 2019). This sometime is the result of the organisational culture.

The organisational culture encapsulates a framework of shared values, beliefs, traditions, and attitudes, fostered among employees within a specific organisation over their tenure. An institution's unique culture is reflected through its nomenclature, emblem, mission, historical structures, and alumni (Güngör & Şahin, 2018). Organisational culture finds expression through four predominant sub-variables: clan culture, hierarchy culture, adhocracy culture, and market culture. Clan culture cultivates a sense of kinship among organisational members, fostering mutual assistance and collaborative efforts towards individual and collective objectives (Njagi, Kamau, Muraguri, 2020). Hierarchy culture delineates the vertical rapport within an organisation, manifesting in superior-subordinate dynamics governed by established rules, guidelines, and policies (Belias & Koustelios, 2014). Adhocracy culture pertains to an organisation's propensity for innovation, creativity, and adaptability, responding to external influences (Joseph & Kibera, 2019). Market culture elucidates an organisation's interactions with external stakeholders like customers, suppliers, regulatory bodies, and other entities (Rukh & Qadeer, 2018). In congruence, this study defines market culture as a facet of organisational culture that defines an organisation's rapport with external stakeholders.

2.2.2 Public universities in Tanzania

Public universities, often synonymous with state-owned institutions, constitute a cornerstone of higher education. In Tanzania, their inception traces back to 1961 with the establishment of the University College Dar es Salaam (UCD). This institution, later transformed into the University of Dar es Salaam, exemplified the nascent stage of public higher learning (Mkude, Cooksey & Levey, 2003). Subsequent decades have witnessed an upsurge in both public and private universities in Tanzania, with 12 fully-fledged universities and 4 public university colleges presently in operation. Oversight of these institutions is vested in the Tanzania Commission for Universities (TCU, 2020), the regulatory body governing public and private universities. Despite being entrusted with resources, public universities grapple with financial constraints, material shortages, and human resource inadequacies. These institutions, while receiving governmental funding, resort to supplementary income generation methods such as evening programs and research initiatives to mitigate shortages (Muduekwe & Thaver, 2019). However, a prominent challenge arises from the scarcity of qualified lecturers, undermining institutional functioning. Moreover, job satisfaction among academic staff is low, intertwined with elevated stress levels, contributing to the vexing issue of high turnover (Amani & Komba, 2016; Mkumbo, 2014). Furthermore, public universities encounter stakeholder dissatisfaction regarding graduate quality and institutional performance (Mwita, 2018).

2.2.3 Clan culture and turnover intentions

Clan culture emerges as a potent factor influencing employee commitment to an organisation. The study by Haggalla and Jayatilake (2017) conducted in Sri Lanka discovered an inverse relationship between clan culture and turnover intentions, substantiating that organisational environments resembling familial bonds tend to foster retention. Lone and Nazir (2020) reaffirm this observation, detecting a significant negative association between clan culture and employee turnover intentions. Dadgar et al. (2013) reinforce this

paradigm, highlighting the predictive influence of clan culture on employee intention to remain. Conversely, Seleethe and Thabane (2016) expose a paradox within the context of South African universities, revealing how inadequate clan culture, rife with discrimination and discomfort, accelerates academic turnover. Notably, the significance of teamwork and support in the demanding academic milieu further underscores the salience of clan culture (Gantasala, 2015). Consequently, clan culture emerges as a predictor of turnover intentions among lecturers, aligning with the tenets of social exchange theory.

2.2.4 Hierarchy culture and turnover intentions

Hierarchy culture emerges as a pivotal determinant of turnover intentions. Hossein (2019) reveals a negative correlation between hierarchy culture and turnover intentions, spotlighting the stabilising effect of well-defined vertical relationships governed by rules. Mohamed & Nadim (2019) reinforce this observation through their study in Pakistan's public universities, revealing that hierarchy culture inversely correlates with employee turnover intentions. However, nuances arise as Nwanko (2019) remarks on the unique context of higher education institutions, where hierarchy culture is well-managed and seldom problematic. Despite its potential benefits, the misapplication of rigid rules and regulations can exacerbate turnover concerns (Nwanko, 2019). Consequently, the relationship between hierarchy culture and turnover intentions is nuanced, warranting strategic management to harness its benefits and mitigate potential drawbacks.

2.2.5 Adhocracy culture and turnover intentions

Adhocracy culture surfaces as a crucial dimension shaping employee retention. The studies by Idhuwaihi and Shee (2015) in Saudi Arabia and Fakhi (2020) in Malaysia converge to reveal the inverse correlation between adhocracy culture and turnover intentions. The embracing of innovation and creativity within the organisational fabric fosters an environment that mitigates turnover intentions. However, nuanced findings emerge from Deogratius's (2019) investigation in Pakistani universities, cautioning against generalisations. Mullins (2019) underscores the significance of adhocracy culture in the academic context, fostering an environment conducive to creativity and adaptation. The complexity arises from the study by Beytekdñ, Yalçinkaya, Doğan & Karakoç (2010), revealing divergent cultural compositions within universities. Consequently, the role of adhocracy culture in turnover intentions is influenced by contextual factors, emphasising the need for tailored interventions.

2.2.6 Market culture and turnover intentions

Market culture emerges as a salient determinant of turnover intentions, reflecting an organisation's external interactions. Haggalla & Jayatilake (2017) and Lone and Nazir (2020) concur on the negative relationship between market culture and turnover intentions, substantiating how an outwardly engaged organisation fosters retention. Deogratius (2019) affirms this connection, highlighting the significance of market-oriented strategies for universities. The study by Moune (2019), while not universally corroborative, uncovers variations, highlighting a pronounced concern among managerial staff for market interactions. This underscores the nuanced influence of market culture on turnover intentions, contingent on roles and perceptions within the organisation. In the Tanzania's context, empirical evidence on the interplay between these cultural dimensions and turnover intentions among lecturers remains scant, necessitating further inquiry.

3. Methodology

This study adopts a quantitative approach to investigate the relationship between organisational culture and turnover intentions among lecturers in Mzumbe University and Moshi Co-operative University. This approach facilitated the collection of structured data that were subjected to statistical analysis, allowing for the identification of patterns, correlations, and predictive insights within the dataset. In this study, data were collected from lecturers of the two aforementioned universities using a standardised questionnaire. The distribution of the questionnaire was conducted through both online means using Google Forms and hard copies, ensuring maximum accessibility for participants. Rigorous measures were taken to ensure the content validity of the questionnaire, aligning with Mohajan's (2017) concept of validity as the instrument's capacity to measure its intended constructs. Statements in the questionnaire were formulated based on the

findings from the literature review. Both independent and dependent variables were gauged using a five-point Likert scale, permitting respondents to express their levels of agreement or disagreement. The instrument underwent content validation by two human resources experts to enhance its validity.

The study opted for a census approach, aiming to collect data from all lecturers in the two universities, thereby encompassing a comprehensive overview of the targeted population. The rationale for employing a census approach was rooted in the manageable size of the lecturer population within the universities, ensuring the feasibility of data collection within a reasonable timeframe. Data analysis process involved the application of inferential statistics, specifically correlation and regression analysis. Correlation analysis determined the strength and direction of relationships between organisational culture dimensions (clan, hierarchy, adhocracy, and market culture) and turnover intentions among lecturers. Regression analysis utilised to assess the predictive impact of organisational culture dimensions on turnover intentions.

4. Findings and Discussion

4.1 Demographic data

The study aimed at securing responses from 429 lecturers across the universities in this study. Ultimately, a total of 221 respondents completed and returned questionnaire. This response rate surpasses the threshold suggested by Babchuk (2017), where a response rate of 50% or higher is deemed satisfactory for analysis, thereby enhancing the robustness of the data collected for the study. In terms of age distribution, the majority of respondents, 128 (57.9%), fell within the age bracket of 23 to 33 years, indicating a prevalence of young lecturers in the sample. Additionally, 82 (37.1%) respondents were between 34 and 44 years old, while 11 (5%) were aged between 45 and 55 years. This demographic profile underscores the predominance of youthful participants within the study, which could influence their perspectives and experiences in the academic environment.

Regarding marital status, 148 (67%) respondents reported being married, while 73 (33%) indicated that they were not married. This distribution provides insight into the marital status of the participants, which could intersect with their work-life balance and potential turnover intentions. The educational attainment of the respondents was diverse, with 60 (27.1%) holding a bachelor's degree, 94 (42.5%) possessing a master's degree, and 67 (30.3%) having a PhD. This varied educational background is indicative of the expertise and qualifications present within the lecturer population of the two universities. In terms of professional designation, the sample encompassed a range of roles: 64 (29%) respondents were Tutorial Assistants, 71 (32.1%) were Assistant Lecturers, 69 (31.2%) held the position of Lecturer, 16 (7.2%) were Senior Lecturers, and 1 (0.5%) held the rank of Professor. This distribution reflects the hierarchical structure of academic positions, demonstrating the diversity of roles represented in the study. The participation from the two universities was as follows: 150 (67.9%) respondents were affiliated with Mzumbe University, while 71 (32.1%) were associated with Moshi Co-operative University. This distribution underscores the dual-university context of the study, ensuring representation from both institutions. Table 1 summarises all these.

Table1: Respondents' demographic data

Characteristic	Category	Frequency (%)
Gender	Male	150 (67.9%)
	Female	71 (32.1%)
Age	23-33 years	128 (57.9%)
	34-44 years	82 (37.1%)
	45-55 years	11 (5%)
Marital Status	Married	148(67%)
	Not Married	73(33%)
Education Level	Bachelor degree	60 (27.1%)
	Master's degree	94 (42.5%)
	PhD	67 (30.3%)
Designation	Tutorial Assistants	64(29%)
	Assistant lecturers	71 (32.1%)
	Lecturers	69 (31.2%)
	Senior lecturers	16(7.2%)
	Professors	1 (0.5%)
University	Mzumbe University	150(67.9%)
	Moshi Co-operative University	71(32.1%)

4.2 Reliability of the Research Instrument

To assess the reliability of the research instrument, the study employed the Cronbach's alpha coefficient. Reliability, in this context, pertains to the consistency of the research tool's outcomes when administered multiple times under similar conditions. The Cronbach's alpha coefficient evaluates the internal consistency of the items within each variable. The commonly accepted guideline is that a Cronbach's alpha value of 0.7 and above indicates satisfactory reliability (Manerikar & Manerikar, 2015). The study computed Cronbach's alpha for each research variable to gauge the reliability of the instrument used for data collection. The results, as illustrated in Table 2, reveal that all research variables exhibited Cronbach's alpha values exceeding 0.7. This signifies that the instrument utilised to gather data for the study demonstrated an acceptable level of reliability. The reliability assessment underscores the robustness of the instrument and enhances the confidence in the subsequent data analysis and findings interpretation.

Table 2: Cronbach alpha values for the variables

Variable	Cronbach's Alpha	No. of items
Turnover Intentions	.852	6
Clan Culture (CC)	.701	3
Hierarchy Culture (HC)	.855	3
Adhocracy Culture (AC)	.815	3
Market Culture (MC)	.802	3

4.3 Diagnostic Tests

To ensure the validity and reliability of the study's findings and conclusions, a series of diagnostic tests were conducted. The outcomes of these tests are presented below:

4.3.1 Normality test

A crucial assumption in statistical analysis is the normal distribution of data (Das & Imon, 2016). Data that deviate from normality might not be adequately representative for making meaningful conclusions and generalisations (Mishra et al, 2019). The Kolmogorov-Smirnov test was employed to assess the normality of the data. This choice was based on the sample size, which exceeded 100 subjects. The Kolmogorov-Smirnov test yielded a significance level of 0.768. The null hypothesis of the Kolmogorov-Smirnov test posits that the dataset is normally distributed. Given that the significance level of 0.769 surpasses the accepted threshold of significance (0.05), the null hypothesis is upheld. Consequently, the test suggests that the dataset under examination follows a normal distribution, fortifying the validity of the subsequent statistical analyses.

4.3.2 Multicollinearity test

Multicollinearity occurs when multiple variables in a multiple linear regression analysis exhibit substantial correlations not only with the dependent variable but also among themselves. This phenomenon can lead to statistical insignificance of certain variables (Shrestha, 2020). To assess multicollinearity, the study employed the variance inflation factor (VIF). Typically, VIF values below 10 and tolerance values above 0.1 are indicative of the absence of multicollinearity (Shrestha, 2020). The results, as depicted in Table 3, demonstrate that all tolerance values were greater than 0.1, and the VIF values were below 10. This implies that the assumption of no multicollinearity was met, enhancing the reliability of the subsequent regression analysis. By conducting these diagnostic tests, the study rigorously evaluated the underlying assumptions and potential issues, ensuring the soundness of the research process and enhancing the credibility of the findings.

Table 3: Tolerance and VIF Values for Multicollinearity Assessment

Variable	Tolerance	VIF
(Constant)		
Clan Culture	.470	2.126
Hierarchy Culture	.427	2.343
Adhocracy Culture	.522	1.916
Market Culture	.446	2.243

Dependent Variable: Turnover Intentions

4.3.3 Linearity test

The establishment of a linear relationship between independent and dependent variables is pivotal for accurately measuring their association (Williams et al, 2013). To examine the presence of linearity, an ANOVA test was employed. This test ascertains whether any deviations from linearity exist, with the null hypothesis positing the absence of such deviations. The results, as presented in Table 4, reveal that the significance values for deviations from linearity are as follows: clan culture (0.115), hierarchy culture (0.092), adhocracy culture (0.133), and market culture (0.203). All these values exceed the threshold of significance (0.05). Consequently, the null hypothesis which suggests no deviation from linearity is upheld for all independent variables. This indicates that the assumption of linearity is met, reinforcing the validity of the linear relationship between the variables. By successfully performing this linearity test, the study ensures that the foundational assumption of linear association between independent and dependent variables is upheld, bolstering the accuracy of the subsequent regression analysis and its interpretations.

Table 4: ANOVA Test for Linearity Assessment

Variables	Deviation of linearity (sig.)
Turnover Intentions * Clan Culture	.115
Turnover Intentions * Hierarchy Culture	.092
Turnover Intentions * Adhocracy Culture	.133
Turnover Intentions * Market Culture	.203

4.3.4 Auto-correlation test

Autocorrelation pertains to interrelatedness among samples across various dimensions, such as time or space. Correlated observations can pose challenges as they contravene a fundamental statistical assumption that many samples are independent (Salkind, 2020). The Durbin-Watson test was employed to assess autocorrelation. The null hypothesis of this test posits that residuals are devoid of correlation (i.e., no autocorrelation). Durbin-Watson test statistics range from 0 to 4, with values between 1.5 and 2.5 indicating that autocorrelation is not a significant concern, while values outside this range raise concerns. The computed Durbin-Watson test statistic yielded a value of 1.598, implying the absence of significant autocorrelation in the dataset. This outcome underscores that autocorrelation is not a prominent issue within the utilised data.

4.4 Correlation of Study Variables

As indicated in Table 5, the study's analysis revealed several noteworthy correlations between the study variables: There was a significant negative correlation between clan culture and turnover intentions ($r = -0.637$, $p < 0.01$). This substantial correlation signifies a strong relationship between these variables. Hierarchy culture exhibited a significant negative correlation with turnover intentions among lecturers ($r = -0.504$, $p < 0.01$). This correlation underscores a noteworthy association between hierarchy culture and turnover intentions. Adhocracy culture demonstrated a significant negative linear relationship with turnover intentions ($r = -0.620$, $p < 0.01$). This robust correlation indicates a meaningful connection between adhocracy culture and turnover intentions. Market culture displayed a weak yet significant negative correlation with turnover intentions ($r = -0.372$, $p < 0.01$). While the correlation is relatively modest, it is statistically meaningful. These correlations offer insights into the associations between the various organisational culture dimensions and turnover intentions among lecturers, shedding light on the potential impact of each culture dimension on the turnover intentions observed in the study sample.

Table 5: Correlation matrix

Indicator		Turnover Intentions	Clan Culture	Hierarchy Culture	Adhocracy Culture	Market Culture
Turnover Intentions	Pearson Correlation	1				
	Sig. (2-tailed)					
Clan Culture	Pearson Correlation	-.637**	1			
	Sig. (2-tailed)	.000				
Hierarchy Culture	Pearson Correlation	-.504**	.604**	1		
	Sig. (2-tailed)	.000	.000			
Adhocracy Culture	Pearson Correlation	-.620**	.623**	.533**	1	
	Sig. (2-tailed)	.000	.000	.000		
Market Culture	Pearson Correlation	-.372**	.560**	.733**	.591**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**Correlation is significant at the 0.01 level (2-tailed).

4.5 Hypothesis Test Results

4.5.1 Clan culture and turnover intentions

The model summary presented in Table 6 underscores the significant explanatory prowess of clan culture concerning turnover intentions. Clan culture's substantial explanatory influence is evident, accounting for 54.1% of the variance with a coefficient of determination ($R^2 = 0.541$). Additionally, the value of the multiple correlation coefficient ($R = 0.501$) is noteworthy and statistically significant at the 0.05 level. This implies that each unit increase in clan culture is associated with a 54.1% decrease in turnover intentions. The results of this hypothesis test underline the considerable impact of clan culture on turnover intentions among lecturers, as evidenced by the substantial portion of variance accounted for by the model. The statistically significant relationship between these variables lends support to the notion that clan culture plays a crucial role in influencing turnover intentions among the study participants.

Table 6: Model Summary for Clan Culture and Turnover Intentions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.501 ^a	.541	.523	.59590

a. Predictors: (Constant), Clan Culture

The goodness of fit test in table 7 shows that the model was a good predictor of turnover intentions $F(1, 219) = 9.258, p = .003$.

Table 7: ANOVA table for Clan Culture and Turnover Intentions

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.287	1	3.287	9.258	.003 ^b
	Residual	77.766	219	.355		
	Total	81.054	220			

a. Dependent Variable: Turnover Intentions

b. Predictors: (Constant), Clan Culture

The aggregated mean scores of clan culture (independent variable) were subjected to regression analysis against the aggregated mean score of turnover intentions (dependent variable), and the outcomes are presented in Table 8. The study posited a null hypothesis: H_01 : There is no significant positive relationship between clan culture and turnover intentions. The examination of the beta coefficient reveals a statistically significant negative linear relationship between the variables ($\beta = -0.191, P\text{-value} = 0.000$), as outlined in Table 8. Consequently, the null hypothesis (H_01) is accepted, given the presence of a significant negative linear relationship between clan culture and turnover intentions, as evidenced by the fact that $\beta \neq 0$ and the P-value is less than 0.05. This regression analysis reaffirms the hypothesis that clan culture indeed has a significant impact on turnover intentions. The statistically significant negative beta coefficient underscores the influence of clan culture in mitigating turnover intentions among the lecturers. This finding underscores the value of fostering a positive clan culture to counteract turnover intentions within the academic setting.

Table 8: Regression Analysis Results for Clan Culture and Turnover Intentions

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		β	Std. Error	Beta			
1	(Constant)	3.635	.160			2.2652	.000
	Clan culture	-.191	.046	-.237		-.4113	.000

a. Dependent Variable: turnover intentions

The findings of this study collectively suggest that lecturers in public universities tend to view these institutions as more conducive and preferable places to remain when they cultivate a sense of a familial environment. This observation aligns with the outcomes of various studies, including Haggalla and Jayatilake (2017), Thabane (2016), Nazir (2020), and Dadgar et al. (2013). Furthermore, these findings substantiate the tenets of the social exchange theory, which posits that the employee-employer relationship is mutually interactive. According to this theory, employees' attitudes and decisions concerning their organisations are shaped by the treatment they receive. Thus, the presence of clan culture, a product of organisational dynamics, could significantly impact lecturers' intentions and choices regarding their tenure within their respective universities.

The disconcerting issue of high lecturer turnover within Tanzania's public universities underscores the possibility that these institutions may not be effectively fostering a familial and supportive environment for lecturers to be inclined to remain. This conjecture finds empirical validation in the recent work by Mgaiwa (2021), which demonstrated that the university working environment, as perceived by lecturers, negatively influences job satisfaction—an influential predictor of employee turnover. The architects of clan culture, often those in leadership positions, hold the responsibility to establish and propagate certain norms, values,

and traditions that, over time, shape an organisational identity. As articulated by Thabane (2016), the perceived hostile environment created by certain leaders in universities may foster an atmosphere that is inimical to the spirit of a familial culture, potentially prompting lecturers to seek opportunities elsewhere. In light of these findings, it becomes evident that lecturers, much like any other category of employees, tend to exhibit loyalty and dedication to organisations that prioritize their well-being and engender a familial sense of belonging.

4.5.2 Hierarchy culture and turnover intentions

The model summary, as depicted in Table 9, reveals the noteworthy explanatory capacity of Hierarchy Culture concerning turnover intentions. Remarkably, Hierarchy Culture's explanatory influence is substantial, accounting for 62.7% of the variance with a coefficient of determination ($R^2 = 0.627$). Furthermore, the multiple correlation coefficient ($R = 0.484$) attains statistical significance at the 0.05 level. Consequently, the model effectively demonstrates that an increase of one unit in Hierarchy Culture corresponds to a substantial 62.7% decrease in turnover intentions. This model summary reaffirms the significant influence of Hierarchy Culture on turnover intentions among lecturers. The substantial proportion of variance elucidated by the model and the statistically significant relationship between these variables accentuate the pivotal role of Hierarchy Culture in impacting turnover intentions within the academic setting.

Table 9: Model Summary for Hierarchy Culture and Turnover Intentions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484 ^a	.627	.604	.60622

a. Predictors: (Constant), Hierarchy Culture

The goodness of fit test in table 10 shows that the model was a good predictor of turnover intentions $F(1, 219) = 2.296, p = .000$.

Table 10: ANOVA table for Hierarchy Culture and Turnover Intentions

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.571	1	.691	2.296	.000 ^b
	Residual	80.483	219	.301		
	Total	81.054	220			

a. Dependent Variable: Turnover Intentions

b. Predictors: (Constant), Hierarchy Culture

The aggregated mean scores of hierarchy culture (independent variable) underwent regression analysis against the aggregated mean score of turnover intentions (dependent variable), and the outcomes are delineated in Table 11. The study posited a null hypothesis: H_01 : There is no significant positive relationship between Hierarchy Culture and turnover intentions. Evaluation of the beta coefficient reveals a statistically significant negative linear relationship between the variables ($\beta = -0.078, P\text{-value} = 0.000$), as depicted in Table 11. Consequently, the null hypothesis (H_01) is rejected, as evidenced by the presence of a significant negative linear relationship between hierarchy culture and turnover intentions – given that $\beta \neq 0$ and the P-value is less than 0.05. This regression analysis reaffirms the conjecture that hierarchy culture significantly influences turnover intentions. The statistically significant negative beta coefficient accentuates the role of hierarchy culture in mitigating turnover intentions among the academic staff. These results underscore the importance of fostering a positive hierarchy culture to counteract turnover intentions within the academic milieu.

Table 11: Regression Analysis Results for Hierarchy Culture and Turnover Intentions

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		β	Std. Error	Beta	t	Sig.
1	(Constant)	3.269	.161		2.0304	.000
	Hierarchy Culture	-.078	.044	-.504	-1.764	.000

a. Dependent Variable: turnover intentions

The investigation revealed a notable negative association between hierarchy culture and turnover intentions. These findings strongly suggest that lecturers are inclined to remain within a university environment characterized by well-established superior-subordinate relationships. The study's outcomes correspond with the conclusions drawn by Hossein (2019) and Mohamed and Nadim (2019), whose research similarly identified a substantial inverse relationship between hierarchy culture and turnover intentions. Consequently, the current study contributes to a growing body of literature that emphasizes the significance of hierarchy culture in retaining academic personnel and deterring turnover intentions. These consistent results underscore the pivotal role of hierarchy culture in shaping lecturers' commitment to their institutions and their inclination to remain therein.

4.5.3 Adhocracy culture and turnover intentions

As delineated in Table 12, the model summary underscores the noteworthy explanatory potency of Adhocracy Culture concerning turnover intentions. Remarkably, Adhocracy Culture's explanatory influence is significant, encapsulating 53.7% of the variance with a coefficient of determination ($R^2 = 0.537$). Additionally, the multiple correlation coefficient ($R = 0.563$) attains statistical significance at the 0.05 level. Hence, the model effectively demonstrates that augmenting adhocracy culture by one unit corresponds to a notable 53.7% decrease in turnover intentions. This model summary bolsters the assertion that Adhocracy Culture significantly influences turnover intentions within the context of academic staff. The considerable proportion of variance explicated by the model and the statistically significant relationship between these variables highlight the pivotal role of Adhocracy Culture in shaping turnover intentions within the academic milieu.

Table 12: Model Summary for Adhocracy Culture and Turnover Intentions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.563 ^a	.537	.512	.60024

a. Predictors: (Constant), Adhocracy Culture

The goodness of fit test in table 13 shows that the model was a good predictor of turnover intentions $F(1, 219) = 5.968, p = .015$.

Table 13: ANOVA table for Turnover Intentions and Adhocracy Culture

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.150	1	2.150	5.968	.015 ^b
	Residual	78.903	219	.360		
	Total	81.054	220			

a. Dependent Variable: Turnover Intentions

b. Predictors: (Constant), Adhocracy Culture

The analysis involved regressing the aggregate mean scores of adhocracy culture (independent variable) against the aggregate mean score of turnover intentions (dependent variable), as depicted in Table 14. In alignment with the study's hypothesis, the null hypothesis (H_0) posited that no significant positive relationship exists between adhocracy culture and turnover intentions. The examination of the beta coefficient indicates a statistically significant negative linear relationship between the variables ($\beta = -0.167$, P -value = 0.000). Consequently, the study accepts the null hypothesis (H_0) as there is compelling evidence

of a significant negative linear relationship between adhocracy culture and turnover intentions. This outcome reiterates the pivotal role of adhocracy culture in influencing the propensity for turnover intentions among academic staff. These findings affirm that adhocracy culture plays a substantial role in shaping turnover intentions within the academic environment, underscoring the importance of fostering a climate that values creativity, innovation, and adaptability to reduce turnover intentions among academic personnel.

Table 14: Regression Analysis for Adhocracy Culture and Turnover Intentions

Model		Unstandardized		Standardized		
		Coefficients	Std. Error	Beta	t	Sig.
1	(Constant)	3.515	.142		24.730	.000
	Adhocracy Culture	-.167	.044	-.620	-3.805	.000

a. Dependent Variable: turnover intentions

As indicated in Table 14, the study has revealed a significant inverse correlation between adhocracy culture and turnover intentions among faculty members in public universities. This suggests that as adhocracy culture levels increase within these institutions, the likelihood of lecturers leaving diminishes. These findings align with prior research conducted by Fakhi (2020), Idhuwaihi and Shee (2015), Mullins (2019), and Oyedepo (2019), all of which have established a negative association between adhocracy culture and turnover intentions. However, Beytekdn, Yalçinkaya, Doğan & Karakoç (2010) found adhocracy culture to have a comparatively less prominent impact on turnover intentions within the faculty. Adhocracy culture pertains to an organisation's capacity to embrace change and foster an environment conducive to employee creativity and innovation. In the context of higher education institutions, these organizations are not merely expected to adapt to change; they are also anticipated to spearhead innovative initiatives and serve as incubators of creativity (Vlachopoulos, 2021). The career advancement and success of lecturers are heavily contingent upon their ability to generate novel ideas. Consequently, lecturers are more inclined to remain in a university that actively cultivates an adhocracy culture. It is important to note that the adoption of change in public organizations tends to be slower when compared to their private counterparts (Al-Alawi, Abdulmohsen, Al-Malki & Mehrotra, 2021). This discrepancy may partially account for the elevated turnover rates observed in public universities, as documented by Do, Le, and Phan (2020), Matimbwa and Ochumbo (2019), and Mkulu (2018).

4.5.4 Turnover Intentions and Market Culture

The model summary presented in Table 15 reveals that Market Culture wields substantial explanatory influence over turnover intentions, explaining 61.1% of the variance, as evidenced by the coefficient of determination ($R^2 = .611$) and a statistically significant level of $p < 0.05$. These results suggest that a one-unit increment in adhocracy culture is associated with a notable 61.1% reduction in turnover intentions.

Table 15: Model Summary for Turnover Intentions and Market Culture

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706 ^a	.611	.597	.60494

a. Predictors: (Constant), Market Culture

The goodness of fit test in table 16 shows that the model was a good predictor of turnover intentions $F(1, 219) = 2.489, p = .000$.

Table 16: ANOVA table for Turnover Intentions and Market Culture

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.911	1	.911	2.489	.000 ^b
	Residual	80.143	219	.366		
	Total	81.054	220			

a. Dependent Variable: Turnover Intentions

b. Predictors: (Constant), Market Culture

In Table 17, the regression analysis examined the relationship between the aggregate mean scores of adhocracy culture (the independent variable) and both market culture and turnover intentions. The study's null hypothesis (Ho1) posited that there would be no significant positive association between market culture and turnover intentions. The examination of the beta coefficient, however, revealed a statistically significant and negative linear relationship between these variables ($\beta = -0.145$, P-value = 0.003). As such, we accept Ho1, as there is compelling evidence indicating a substantial negative linear relationship between Market Culture and turnover intentions, with $\beta \neq 0$ and a P-value less than 0.05.

Table 17: Coefficients for Market Culture with turnover intentions

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		β	Std. Error	Beta	t	
1	(Constant)	3.526	.184		19.114	.000
	Market Culture	-.145	.049	-.372	-2.953	.003

a. Dependent Variable: turnover intentions

The study has revealed a compelling inverse relationship between market culture and turnover intentions among lecturers, underscoring the significant impact of how a university values its external stakeholders on the turnover intentions of faculty members within public universities. This phenomenon may be attributed to the importance of various stakeholders, including customers, regulators, licensees, suppliers, and contractors, in shaping the identity and performance of universities. Market culture is intrinsically linked to an organization's competitiveness and its capacity to attain both individual and organizational objectives, as previously expounded by Beytekdin et al. (2010). Consequently, lecturers are more inclined to find their tenure rewarding within a university culture that prioritizes excellence and competitiveness within the industry. These findings are in harmony with the research outcomes of Lone and Nazir (2020), Deogratus (2019), and Haggalla and Jayatilake (2017). However, it is worth noting that the study conducted by Moune (2019) yielded dissimilar results, finding no statistically significant relationship between market culture and turnover intentions among lecturers in Korean universities.

4.6 Multiple Linear Regression for All Variables

The model summary presented in table 18 demonstrates that the combined influence of clan culture, hierarchy culture, adhocracy culture, and market culture significantly explains turnover intentions, accounting for a substantial proportion of the variance at 71.2%. The coefficient of determination ($R^2 = .712$) and the coefficient of correlation ($R = .725$) both indicate the robustness of this explanatory power at a significant level of 0.05. These results suggest that an increase in one unit of organisational culture is associated with a notable decrease of 71.2% in turnover intentions. This comprehensive analysis underscores the collective impact of various dimensions of organisational culture on the turnover intentions of academic staff in public universities. The findings highlight the interconnectedness of clan, hierarchy, adhocracy, and market cultures in shaping employees' decisions to either stay or leave an organisation. The substantial explanatory power of the model underscores the complexity of the factors at play and their joint influence on turnover intentions.

Table 18: Model Summary for linear regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725 ^a	.712	.692	.5983

a. Predictors: (Constant), Clan Culture, Hierarchy Culture, Adhocracy Culture, Market Culture

Table 19 shows the results of the goodness of fit test. The results show that the model was a good predictor of Turnover Intentions, $F(4, 216) = 2.607, p = .037$.

Table 19: ANOVA table for multiple linear regression

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.733	4	.933	2.607	.037 ^b
	Residual	77.321	216	.358		
	Total	81.054	220			

a. Dependent Variable: Turnover Intentions

b. Predictors: (Constant), Clan Culture, Hierarchy Culture, Adhocracy Culture, Market Culture

Examining the results presented in table 20, it becomes evident that at a significance level of 5%, the impact of different organisational culture dimensions on turnover intentions can be discerned. Specifically:

- (i) Clan Culture: The p-value of 0.002 for Clan Culture suggests that it is a significant predictor of Turnover Intentions. This indicates that the family-like atmosphere and mutual support associated with Clan Culture have a notable influence on reducing turnover intentions among academic staff.
- (ii) Hierarchy Culture: With a p-value of 0.088, Hierarchy Culture is not identified as a significant predictor of Turnover Intentions at the 5% significance level. This implies that the presence of a well-defined hierarchical structure within the organisation may not have a strong direct impact on employees' intentions to leave.
- (iii) Adhocracy Culture: The p-value of 0.001 highlights Adhocracy Culture as a significant predictor of Turnover Intentions. This underscores that an organisational environment that encourages innovation, adaptability, and change readiness plays a crucial role in reducing the likelihood of employees considering leaving.
- (iv) Market Culture: Market Culture also emerges as a significant predictor of Turnover Intentions with a p-value of 0.000. This underscores that a focus on external stakeholder interactions, competitiveness, and achieving goals resonates with employees and contributes to lower turnover intentions.

These findings provide nuanced insights into how different facets of organisational culture interact with employees' turnover intentions. The significant predictors highlight areas where organisational interventions and improvements can be targeted to enhance retention and foster a positive work environment. It's important to note that the varying significance levels indicate that different cultural dimensions have diverse influences on turnover intentions among academic staff.

Table 20: Coefficients for multiple linear regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.515	.217			.000
	Clan Culture	-.157	.176	-.201	.949	.002
	Hierarchy Culture	-.063	.073	.088	3.332	.000
	Adhocracy Culture	-.048	.067	-.065	2.878	.001
	Market Culture	-.017	.080	-.022	3.245	.000

a. Dependent Variable: Turnover Intentions

From the results in table 20 the multiple regression model can be presented as;

$$TI = 3.515 - 0.157CC - 0.063HC - 0.248CM - 0.017MC + \epsilon$$

Where;

TI= Clan Culture

CC= Hierarchy Culture

HC= Adhocracy Culture

CM= Market Culture

ϵ = Error term

The multiple regression model employed in this study underscores the paramount importance of organisational culture in shaping turnover intentions among lecturers within Tanzanian public universities. Each sub-variable representing organisational culture (hierarchy culture, clan culture, adhocracy, and market culture) exhibited a statistically significant negative influence on turnover intentions. This implies that fostering a positive organisational culture within public universities can effectively mitigate turnover intentions among lecturers. Much like employees in various other organisational contexts, university lecturers are deeply intertwined with the prevailing organisational culture. Consequently, comprehending the organizational culture of a university holds profound significance, not only in terms of its impact on employee turnover but also in guiding decisions related to the structural and transformative aspects of universities (Lacatus, 2013).

Management within public universities must recognise that lecturers are unlikely to remain in an organization whose culture does not align with their preferences, thus echoing the principles of social exchange theory. According to this theory, an employee's commitment to an organization hinges on the reciprocal benefits offered by both parties, thereby forming a psychological contract. Failure on the organization's part to fulfill these obligations may prompt employees to consider departing. To explore the avenues for cultivating a conducive organizational culture within public universities, the multiple regression model suggests that all four facets of organizational culture should be thoughtfully considered. Creating a nurturing, family-like environment, characteristic of clan culture, entails discouraging interpersonal conflicts and promptly addressing emerging issues. Additionally, demonstrating equal regard and affection for all employees, devoid of any form of discrimination, is paramount. Furthermore, a well-defined hierarchy culture, marked by clear lines of authority, should be instated to fortify the organisational structure.

However, it is essential to exercise caution, as an excessive concentration of power among those in leadership roles, at the expense of marginalised voices, may inadvertently elevate turnover rates, as cautioned by Lone and Nazir (2020). The working environment for lecturers should be flexible enough to stimulate creativity, innovation, and adaptability. Notably, adhocracy, often overshadowed in public organisations due to their bureaucratic nature, including public universities, deserves more attention and room for development. Recognising and harnessing the competitive advantage of public universities should be prioritised and reflected in their agendas and plans, as these findings suggest that it directly impacts lecturers' turnover intentions. While this study underscores the pivotal role of organisational culture, it acknowledges that other factors may also exert significant influence on turnover intentions.

5. Conclusion

The aim of this study was to investigate the correlation between organisational culture and turnover intentions among lecturers within Tanzania's public universities. The study analysed clan culture, hierarchy culture, adhocracy culture, and market culture as components of organisational culture, and their relationship with turnover intentions. The findings revealed that all these sub-variables of organisational culture exhibited a significant and negative correlation with turnover intentions. This leads to the conclusion that there exists a noteworthy inverse association between organisational culture and turnover intentions among lecturers in Tanzania's public universities. This study contributes to the broader understanding of how organisational culture can impact turnover intentions, not only in traditional organisational settings but also within academic institutions like public universities. By demonstrating the

negative influence of organisational culture on turnover intentions, the study underscores the critical role that a conducive and harmonious organisational environment plays in retaining lecturers. Furthermore, the findings validate the principles of the social exchange theory, affirming that lecturers' intentions to stay or leave their positions in public universities are influenced by the reciprocal relationship established through the prevailing organisational culture.

References

- Aina, R. A., & Atan, T. (2020). The impact of implementing talent management practices on sustainable organisational performance. *Sustainability*, 12: 1-12.
- Al-Alawi, A. I., Abdulmohsen, M., Al-Malki, F. M., & Mehrotra, A. (2021). Investigating the barriers to change management in public sector educational institutions. *International Journal of Educational Management*, 33(1): 112-148.
- Al-Suraihi, W. A., Samikon, S. A., Al-Suraihi, A. A., & Ibrahim, I. (2021). Employee turnover: causes, importance and retention strategies. *European Journal of Business and Management Research*, 6(3): 1-10.
- Aman, J., & Komba, A. (2016). Relationship between job satisfaction and turnover intention among lecturers in Tanzania's public universities. *Annals of Modern Education*, 8(1): 1-15.
- Babchuk, W. A. (2017). Book review: qualitative research: a guide to design and implementation (4th ed.), by S. B. Merriam and E. J. Tisdell. *Adult Education Quarterly*, 67(1): 71-73. DOI: <https://doi.org/10.1177/0741713616671930>
- Belias, D., & Koustelios, A. (2014). Organisational Culture and Job Satisfaction: A Review. *International Review of Management and Marketing*, 4(2), 132-149.
- Beytekdin, O. F., Yalçinkaya, M., Doğan, M., & Karakoç, N. (2010). The organisational culture at the university. *The International Journal of Educational Researchers*, 2(1): 1-13.
- Cropanzano, R., Anthony, E. L., Daniels, S. R., & Hall, A. V. (2017). Social exchange theory: a critical review with theoretical remedies. *The Academy of Management Annals*, 11: 479-516.
- Dadgar, H., Barahouei, F., Mohammad, M., Ebrahimu, M., & Ganjali, A. (2013). The relationship between organisational culture, job satisfaction, organisational commitment and intention to stay of health personnel's of Zahedan University of Medical Sciences. *World Applied Sciences Journal*, 21(8): 1220-1228.
- Das, R. K., & Imon, A. H. (2016). A brief review of tests for normality. *American Journal of Theoretical and Applied Statistics*, 5(1): 5-12.
- Deogratus, J. (2019). Relationship between organisational culture and employee intentions: evidence from Pakistan Universities. *International Journal of Contemporary Business Studies*, 14(3): 89-111.
- Do, T. D., Le, L. C., & Phan, T. T. (2020). Factors affecting talent retention: case study of universities in Ho Chi Minh City. *International Journal of Entrepreneurship*, 24(1): 1-10.
- Efi, A. E., & Amagha, O. A. (2016). Perceived organisational support and turnover intention of academic staff in University of Uyo. *International Journal of Management Studies, Business & Entrepreneurship Research*, 1(2): 65-82.
- Fakhi, L. (2020). The Relationship between organisational culture and employee turnover in commercial banks. *International journal of Business Management*, 23(6): 234-255.
- Gantasala, S. B. (2015). Collaborative team work in higher education: a case study. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 9(2): 636-642.
- Güngör, S. K., & Şahin, H. (2018). Organisational culture types that academicians associate with their institutions. *International Journal of Higher Education*, 7(6): 161-172.
- Haggalla, K. H. U., & Jayatilake, L. V. K. J. (2017). Study on organisational culture and turnover intention in international information technology firms in Sri Lanka. *International Journal of Scientific Research and Innovative Technology*, 4(2): 48-63.
- Hosseini, K. (2020). Determinants of employee turnover intentions in IT firms. *Journal of Contemporary Business Studies*, 23(3): 123-144.
- Joseph, O. O., & Kibera, F. (2019). Organisational culture and performance: evidence from microfinance institutions in Kenya. *SAGE open*, 2019: 1-11.
- Kurniawaty, K., Ramly, M., & Ramlawati, R. (2019). The effect of work environment, stress, and job satisfaction on employee turnover intention. *Management Science Letters*, 9(6): 877-886.

- Lacatus, M. L. (2013). Organisational culture in contemporary university. *Procedia - Social and Behavioral Sciences*, 76: 421–425.
- Ldhuwaihi, A., & Shee, H. (2015). Organisational culture and employee turnover in Saudi Arabian Banks. *The International Journal of Management*, 4(4): 1-12.
- Lone, M. A., & Nazir, U. (2020). Organisational culture and turnover intentions: a study of health sector. *International Journal for Research in Engineering Application & Management*, 4(9): 205-212.
- Manerikar, V., & Manerikar, S. (2015). Cronbach's alpha. *aWEshkar Journal*, 19(1): 117-119.
- Mapolisa, T. (2014). Staff retention strategies in Zimbabwe's public & private universities: returnee lecturers' perspective. *International Research Journal of Teacher Education*, 2(1), 16-29.
- Matimbwa, H., & Ochumbo, A. (2019). Academic staff motivation and retention in higher learning institutions in Tanzania: evidence from selected universities in Iringa Region. *Journal of Business Management and Economic Research*, 3(6): 1-14.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1): 67–72.
- Mkude, D., Cooksey, B., & Levey, L. (2003). *Higher education in Tanzania: case study, partnership for higher education in Africa*. Dar es Salaam: Oxford and Mkuki na Nyota.
- Mkulu, D. G. (2018). Academic staff retention in private universities in Southern Highland Zone Tanzania as a strategy of attaining sustainable development. *International Journal of Humanities and Social Science*, 8(5): 148-158.
- Mkumbo K. (2014). Prevalence of and factors associated with work stress in academia in Tanzania. *International Journal of Higher Education*, 3(1): 1-11. DOI:10.5430/ijhe.v3n1p1.
- Mohajan, H. (2017). *Two criteria for good measurements in research: validity and reliability*. Munich: Munich Personal RePEc Archive.
- Mohamed, K., & Nadim, J. (2019). The role of organisational culture in employee retention in Pakistani Public universities. *International Journal of Higher Education*, 12(5): 239-253.
- Muduekwe, C. C., & Thaver, B. (2019). The reform of public universities in Tanzania: governmentality and the exercise of power. *African Sociological Review*, 23(1): 45-60.
- Mulie, H., & Sime, G. (2018). Determinants of turnover intention of employees among the academic staffs: the case of some selected Ethiopian universities. *Journal of Economics and Sustainable Development*, 9(15): 18-29.
- Mullins, S. (2019). Change Management in higher learning institutions: a systematic review. *Journal of Business and Leadership Studies*, 12(4): 45-57.
- Mushemeza, E. D. (2016). Opportunities and challenges of academic staff in higher education in Africa: opportunities and challenges of academic staff in higher education in Africa. *International Journal of Higher Education*, 5(3): 236-246.
- Mwita, K. M. (2018). Tanzania graduate employability: perception of human resource management practitioners. *International Journal of Human Resource Studies*, 8(2): 264-273.
- Mutabuzi, H. (2019). Factors affecting staff retention at college of business education. Unpublished Master's dissertation. Morogoro: Mzumbe University. <http://scholar.mzumbe.ac.tz/bitstream/handle/11192/3211/MSc-HRM-DCC-Mutabuzi-Hamidu.2019.pdf?sequence=1>
- Njagi, A. W., Kamau, J. N., Muraguri, C. (2020). Clan culture as predictor of strategy implementation: empirical evidence from professional bodies in Kenya. *European Journal of Business and Management Research*, 5(4): 1-7.
- Osman, I., Noordin, F., Daud, N., & Othamn, M. Z. (2016). The dynamic role of social exchange and personality in predicting turnover intentions among professional workers. *Procedia Economics and Finance*, 35(1): 541–552.
- Nwanko, M. (2019). Organisational culture in higher learning institutions: a systematic literature review. *International Journal of Human Resource Management*, 23(4): 87-108.
- Oyedepo, O. N. (2019). The role of organisational culture on employee retention in state owned universities in Nigeria. *Journal of Contemporary Business Studies*, 14(4): 51-69.

- Qiwang, Z., & Xiaorui, W. (2020). Factors influencing employment rate and mobility of science and engineering and economics and management graduates in Northeast China: an examination. *Sage Open*, 2020: 1-15.
- Rukh, H., & Qadeer, F. (2018). Diagnosing culture of public organisation utilising competing values framework: a mixed methods approach. *Pakistan Journal of Commerce and Social Sciences*, 12(1): 398-418.
- Salkind, N. J. (2010). *Encyclopedia of research design*. Thousand Oaks, CA: SAGE Publications, Inc. DOI: 10.4135/9781412961288.
- Seleethe, S. M., & Thabane, J. L. (2016). Foremost causes of high academic turnover rate at some South African universities. *Environmental Economics*, 7(2): 106-114.
- Selesho, J. M., & Naile, I. (2014). Academic staff retention as a human resource factor: university perspective. *International Business & Economics Research Journal*, 13(2): 295-304.
- Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39-42. DOI: 10.12691/ajams-8-2-1.
- TCU (2020). *List of approved university institutions in Tanzania as of 31st January, 2020*. Dar es Salaam: Tanzania Commission of Universities.
- Thomas, T., & Joseph, M. A. (2015). Challenge of employee turnover: the critical issues faced by Unorganised Hospitality Sector in Kerela. *International Journal of Business and General Management*, 4(5), 5-14.
- Vlachopoulos, D. (2021). Organisational change management in higher education through the lens of executive coaches. *Education Sciences*, 11(12): 2-15. DOI: <https://doi.org/10.3390/educsci11060269>.
- Warter, L. (2019). The impact of organisational culture in higher education. *Journal of Intercultural Management and Ethics*, 2(1): 173-180.
- Williams, M. N., Grajales, C. A., & Kurkiewicz, D. (2013). Assumptions of multiple regression: correcting two misconceptions. *Practical Assessment, Research & Evaluation*, 18(11): 2-14.
- Yu, M., Mai, Q., Tsai, S., & Dai, Y. (2018). An empirical study on the organisational trust, employee-organisation relationship and innovative behavior from the integrated perspective of social exchange and organisational sustainability. *Sustainability*, 10(3): 1-14. DOI: <https://doi.org/10.3390/su10030864>.



CO-OPERATIVE MEMBERS' TRAITS AND HEALTH INSURANCE PARTICIPATION BEHAVIOUR IN TANZANIA

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ABSTRACT

The widespread concern over disparities in health insurance participation among individuals is a global issue. This study delves into the influence of co-operative members' traits on their behaviour regarding health insurance participation. Specifically, utilising the Theory of Planned Behaviour, this study examines the impact of members' attitudes, behavioural control, and characteristics on health insurance participation behaviour. A cross-sectional survey was conducted involving 500 co-operative members, using a five-point Likert scale to collect their opinions on the influence of independent variables on the dependent variable. Partial Least Squares Structural Equation Modeling was employed to analyze the variables affecting co-operative members' participation in health insurance. Supporting the Theory of Planned Behaviour, the findings reveal that all three variables - members' characteristics, attitudes, and behavioural control exert a positive and significant influence on health insurance participation behaviour among co-operative members. Notably, members' personal characteristics exhibit the strongest predictive power ($\beta = 0.629$, $p < 0.000$), followed by members' attitudes ($\beta = 0.171$, $p < 0.004$) and members' behavioural control ($\beta = 0.115$, $p < 0.040$) in shaping health insurance participation behaviour within co-operatives. This study strongly encourages and recommends that insurers, whenever feasible, thoroughly examine and consider the traits of co-operative members that enhance and increase their likelihood of engaging in health insurance.

Keywords: Co-operatives; Health insurance; Participation behaviour; PLS-SEM; Theory of planned behaviour.

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

Health insurance plays a pivotal role in the realisation of Universal Health Coverage (UHC) initiatives. Extending health insurance coverage to entire populations stands as a contemporary global challenge.



International organisations, including the United Nations (UN), the World Health Organisation (WHO), and the World Bank, have made health insurance and guaranteed health for all individuals a central objective of the 2030 agenda for achieving the Sustainable Development Goals (SDGs) (WHO, 2020; World Bank, 2019; UN, 2015). The right to health insurance is a fundamental entitlement; it should be accessible to every member of the community (Devasoorya & Srinivasa Vallabhan, 2016). Participation in health insurance ensures access to essential, high-quality medical care and diminishes out-of-pocket (OOP) expenditures, contributing to an improved quality of life (WHO, 2020; Wagstaff et al., 2016; Saksena et al., 2014). The absence of health insurance and low participation expose individuals to health risks throughout their lives, resulting in poor health and decreased productivity, ultimately perpetuating poverty (Osabohien et al., 2020; Stavropoulou et al., 2016; Drolet, 2016).

Statistics from 2019 indicate that approximately 46% of the world's population lacks access to essential health services (World Bank, 2019). Moreover, while the global average health exclusion rate is estimated at 56%, reaching 22% in urban areas and a staggering 85% in Sub-Saharan Africa for social insurance programs, including health insurance (ILO, 2021; 2017). Thus, countries are urged to establish stronger connections and improved coordination mechanisms to enhance global access and utilisation of health insurance (ILO, 2021). The goal is to bridge participation gaps, rectify unequal access, and promote the use of health insurance among individuals. In response to this call, many Organisation for Economic Co-operation and Development (OECD) countries have adjusted their macro-fiscal and private health insurance financing systems to align with UHC objectives (Sfakianakis et al., 2020; Bergen et al., 2019; OECD, 2019). Likewise, African nations, including Tanzania, have adopted Community Health Insurance strategies to support national health insurance systems in terms of financing, accessibility, efficiency, and effectiveness in delivering healthcare services to individuals (Kigume & Maluka, 2021; Amani et al., 2020; Kapologwe et al., 2017; Mpambije, 2017; Waelkens et al., 2017). For instance, in 2003, China introduced the New Rural Co-operative Medical Scheme (NRCMS), covering over 97% of farmers and rural residents with basic medical insurance (Chen et al., 2018; Liu, 2016). In the United States of America, the implementation of the Patient Protection and Affordable Care Act (ACA) in 2010 enabled citizens to compare, select, and purchase suitable health insurance, enhancing the affordability of healthcare services to meet immediate health needs (Bauhoff, 2020).

In Tanzania, a health insurance scheme has been designed to accommodate and enable community-based organisations, such as co-operatives, and their members to participate (United Republic of Tanzania [URT], 2001). Participation in the insurance scheme is voluntary, particularly for those in the informal sector or without formal employment (Kigume & Maluka, 2021; Kapologwe et al., 2017). This stands in contrast to individuals in the informal sector or without formal employment, who often face daunting requirements and conditions when attempting to join health insurance schemes. Co-operatives streamline and facilitate the process, making it more accessible and manageable for a majority of individuals within the economy. In contrast to other institutions, co-operatives have a primary mission to protect their members and empower them against socio-economic risks and contingencies, including health insurance (Mchomvu et al., 2002). These institutions also have the capacity to accept memberships from diverse groups of individuals, a feat that other institutions may find challenging. Co-operatives possess unique features that enhance the collective bargaining power of their members in addressing their health insurance needs and challenges (Giaino, 2013). For individuals with formal employment and existing health insurance, membership in co-operatives provides additional coverage for their households that cannot be obtained through statutory means. Therefore, it is expected that health insurance offered through co-operatives would be preferred by the majority. This preference arises from co-operatives' effective handling of constraints and challenges encountered in other platforms related to health insurance participation.

However, the number of individuals, including co-operative members, who have accessed health insurance schemes in Tanzania remains limited (Borghini et al., 2013). Statistics reveal that 85% of individuals in the country lack access to health insurance services (URT, 2022; Wajanga et al., 2022). Among the 15% with coverage, 8% are enrolled in the National Health Insurance Fund (NHIF), 5.4% in the Community Health Fund (CHF), and the remaining 2% rely on private insurers (URT, 2022). Such low coverage rates expose a

significant portion of the population to health-related challenges, including incomplete treatment, delayed medical care, and overwhelming health expenditures. Therefore, it is imperative to investigate the participation behaviour of individuals, including co-operative members, in health insurance in developing economies like Tanzania. This research contributes to the broader efforts aimed at achieving universal health insurance coverage in the country. The notable lack of participation by a significant percentage of individuals raises questions about the factors hindering their involvement. Existing literature (e.g., Ebrahim et al., 2019; Nsiah-Boateng et al., 2019; Raza et al., 2019; Chomi et al., 2014) suggests that individuals' characteristics, attitudes, and perceived behavioural control influence their participation in health insurance services. However, it remains to be determined whether these factors hold true for co-operative members. Most literature on health insurance participation has predominantly focused on consumer preferences (e.g., Amani et al., 2020; Nsiah-Boateng et al., 2019; Kimani et al., 2012), with limited attention to the influence of group dynamics on individual participation behaviour (e.g., Bauhoff, 2020; Wang et al., 2020; Ebrahim et al., 2019). Furthermore, the existing literature overlooks co-operatives as unique institutions with distinctive operations and diverse member compositions that can influence health insurance participation behaviour.

Moreover, studies examining health insurance participation behaviour within the context of co-operatives, particularly in emerging economies like Tanzania, are scarce. Hence, this study aims to investigate the impact of co-operative members' traits on their health insurance participation behaviour. The study employs structural equation modeling as the analytical framework and the Theory of Planned Behaviour (Ajzen & Fishbein, 1980; Ajzen, 1985) as the theoretical lens to analyze how co-operative members' attitudes and perceived behavioural control predict their health insurance participation behaviour. Additionally, the study explores how co-operative members' characteristics drive participation behaviour in health insurance. The remainder of this paper is organised as follows: the next section encompasses the literature review, theoretical foundations, hypotheses, and the conceptual model of the study. Subsequently, the methodology, findings, and discussions are presented, followed by the study's conclusions and recommendations.

2. Literature Reviews and Hypothesis Development

Previous research has highlighted various factors that hinder people from accessing and participating in health insurance systems. These factors encompass a lack of comprehension regarding insurance principles, concerns about the quality of healthcare services for the insured, health status, and a history of chronic illnesses, as well as socio-demographic factors such as age, income, education level, and household size (e.g., Prakoso et al., 2020; Alhassan, 2018; Fenny et al., 2018; Umeh & Feeley, 2017; Farias, 2016; Kusi et al., 2015; Chauhan, 2019; Minyihun, 2019; Amani et al., 2020; Bauhoff, 2020; Nsiah-Boateng et al., 2019; Ebrahim et al., 2019; Wang et al., 2020). However, these studies have typically examined each factor in isolation when analyzing its impact on health insurance participation. This independent treatment of variables in previous studies may provide a partial understanding of health insurance participation. Therefore, this study aggregates all these factors to create a more comprehensive measure called "members' characteristics" to reduce potential bias when analyzing health insurance participation behaviour among co-operative members.

Additionally, the literature has highlighted the roles of attitude and behavioural control in explaining participation in health insurance. Differences in individuals' actions influenced by attitude and behavioural control can significantly impact health insurance operations. High levels of heterogeneity among members concerning behavioural control and attitude can impede effective participation and the successful functioning of health insurance systems (Ebrahim et al., 2019; Nsiah-Boateng et al., 2019; Chomi et al., 2014; East Africa Community [EAC], 2014; Peterson, 2012; Scheil-Adlung et al., 2010; McCord & Osinde, 2005). It is believed that variations in individuals' intrinsic traits, attitudes, and behavioural control govern their decision-making when comparing the expected utility values of participating in health insurance systems (Fenny et al., 2018; Odeyemi, 2014; Scheil-Adlung et al., 2010; Schneider, 2004; Cheng et al., 2003). However, to the best of the authors' knowledge, the impact of attitude and behavioural control in the context of co-operatives has not yet been studied.

Nevertheless, like other individuals, co-operative members possess traits that influence their participation behaviours in various activities. Traits such as behavioural control, attitude, and other characteristics have been reported to impact individuals' participation in health insurance (Raza et al., 2019; Ellis, 2016; Carapinha et al., 2011; Chemouni, 2018; Panda et al., 2015; Adjabui et al., 2019; Baillon et al., 2019). Previous analyses in most studies have focused on individuals who are not members of co-operatives, examining participation in national health insurance, Islamic insurance among employees from different organisations, and household surveys on willingness to pay for health insurance (Nsiah-Boateng et al., 2019; Raza et al., 2019; Baillon et al., 2019). A few exceptions have studied participation in community-based insurance systems that share similarities with co-operatives (Ebrahim et al., 2019; Minyihun, 2019; Chemouni, 2018; Panda et al., 2015). However, these studies have not explored the extent to which dynamics in co-operative members' characteristics, attitudes, and behavioural control influence decisions to participate in health insurance. Therefore, their findings cannot be generalized to the context of co-operatives when analyzing health insurance participation behaviour among members. This study aims to address this gap in the literature.

2.1 Hypotheses of the Study

The hypotheses of this study were developed based on the Theory of Planned Behaviour (TPB) proposed by Ajzen (1985). The theory posits that attitude, subjective norms, and perceived behavioural control predict behavioural intention and subsequently actual behaviour (Huda et al., 2012; Syed & Nazura, 2011; Fishbein & Ajzen, 2010; Golnaz et al., 2010; Shim et al., 2001; Ajzen, 1991; Beck & Ajzen, 1991; Ajzen, 1985; Ajzen & Fishbein, 1980). However, some proponents argue that behavioural intention does not necessarily precede actual behaviour, raising doubts about any gap between behavioural intention and behaviour performance (Raza et al., 2019; Sherma and Mannan, 2015). Therefore, this study does not consider behavioural intention as a mediating predictor of actual behaviour performance when explaining health insurance participation among co-operative members.

2.1.1 Attitude

Attitude, as defined by one's evaluative judgment, is the best predictor of intentions and behaviours related to participation in a specific behaviour (Fishbein & Ajzen, 2011; Ajzen & Fishbein, 1980). According to the TPB, attitude guides and enables individuals to assess their behaviour towards a particular action (Huda et al., 2012). It plays a critical role in influencing decisions based on contextual factors and specific issues (Sharma & Mannan, 2015). Advocates of the theory argue that individuals' intentions to participate in insurance activities are influenced and predicted by their attitude, whether favorable or unfavorable (Huda et al., 2012; Golnaz et al., 2010). Several studies (e.g., Echchabi et al., 2016; Setyobudi et al., 2015) indicate that attitude positively and significantly influences individuals' behaviour and their decisions to participate in financial products such as insurance. In the context of co-operatives, it is anticipated that co-operative members' attitudes, whether positive or negative, shape and can alter decisions regarding participation in health insurance. Therefore, this study hypothesizes that:

H1: Co-operative members' attitude influences participation behaviour in health insurance.

2.1.2 Behavioural control

Perceived behavioural control involves an individual's established beliefs and perceptions regarding the ease or difficulty of performing a specific action (Sherma and Mannan, 2015; Corner and Norman, 2005; DeBarr, 2004). According to the TPB, individuals with confidence in their planned behaviour are expected to have a stronger likelihood of performing that behaviour (Ajzen, 2002; Ajzen, 1991), in this case, participating in health insurance. Empirical evidence demonstrates a relationship between behavioural control and health insurance participation. One's behavioural control towards participation in health insurance is influenced by two factors: their own individual capability and how others perceive their ability to handle health insurance-related matters (Husin & Rahman, 2016; Sharma & Mannan, 2015). Studies by Raza et al. (2019), Mas'ud (2016), and Kim & Karpova (2010) suggest that behavioural control influences individuals to purchase or participate in various insurance products. In the context of co-operatives, members' behavioural control is expected to play a significant role in deciding whether to participate in health insurance. The higher members' confidence in their ability and the positive perception of their peers

regarding their ability to manage health insurance, the more likely they are to participate. Therefore, this study hypothesizes that:

H2: Co-operative members' behaviour control over insurance influences participation behaviour in health insurance.

2.1.3 Member characteristics

While Fishbein and Ajzen (2011) argue that subjective norms determine individuals' actual behaviour and choices, this study proposes a different approach to validate this relationship. The study assumes that, for subjective norms to hold i.e., other people's perception and influence on an individual's ability and belief concerning the performance of actual behaviour co-operative members' characteristics are crucial. Co-operative member characteristics encompass typical behaviour patterns, reasoning styles, and emotions that guide decision-making (Coaley, 2010; Kassin, 2003). Such characteristics significantly predict unpredictable decisions and actions based on individuals' intelligence, cognitive abilities, motives, values, and attitudes (Carver & Scheier, 2000). Co-operative members' characteristics, including age, income, education level, knowledge, and understanding of insurance, differentiate one person from another in terms of health insurance participation behaviour (Kassin et al., 2021). In other words, effective decisions regarding participation in health insurance are expected to align with co-operative members' characteristics (Nsiah-Boateng et al., 2019; Kusi et al., 2017; Agyepong et al., 2016; Dror et al., 2016; Adebayo et al., 2015; Carrin et al., 2005). Therefore, this study substitutes subjective norms with members' characteristics when explaining and determining their influence on health insurance participation behaviour. Thus, this study hypothesizes that:

H3: Co-operative members' characteristics influence participation behaviour in health insurance.

2.2 Conceptual Model of the Study

This study is grounded in the Theory of Planned Behaviour, incorporating two established elements—co-operative members' attitudes and behavioural control—and an additional element, co-operative members' characteristics. These elements serve as variables to investigate their influence on predicting health insurance participation behaviour among co-operative members, as illustrated in Figure 1 below.

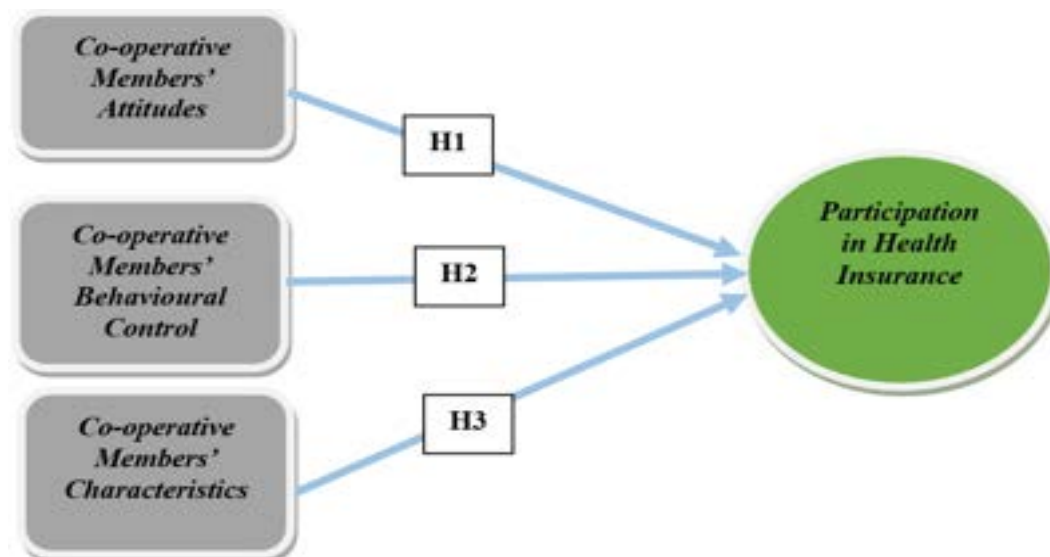


Figure 1: Conceptual model of the study

3. Methodology

This study utilises a quantitative research method, employing a cross-sectional survey design. This approach enables an examination of the prevailing disparities in attitude, behavioural control, and characteristics at a specific point in time, with the aim of comprehending health insurance participation behaviour among co-operative members. To achieve the study's objectives, Kilimanjaro and Arusha were chosen as representative regions of Tanzania where health insurance has been introduced within co-

operatives. These regions were selected due to their significant history of co-operative movements and practices. The chosen areas are home to co-operatives comprising members with diverse characteristics, attitudes, and levels of behavioural control stemming from varied cultural backgrounds, economic statuses, and traits that align with the study's requirements.

The study population consisted of active co-operative members in co-operative societies that offer health insurance products. Additionally, the study's sampling unit comprised members of co-operative societies who have benefited from health insurance schemes integrated into their respective co-operatives. Initially, a purposive sampling technique was employed to identify co-operative institutions and members meeting the criteria for inclusion in this study. Purposive sampling was chosen as it is a pragmatic method for gathering relatively large samples from the targeted respondents, in this case, co-operative members from co-operative institutions (Klar & Leeper, 2019). The sample size for this study encompassed 500 co-operative members. Initially, 550 responses were randomly collected from co-operative members to form the basis for analysis. Following data collection, Hair et al. (2017) recommend addressing missing data and dubious responses before the data analysis stage. Consequently, 50 responses were excluded after screening for missing values and suspicious responses. Ultimately, 500 questionnaires were deemed suitable, sufficient, and of high quality for structural equation model analysis (Wolf et al., 2013; Comrey & Lee, 1992).

A five-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5), was employed to gather opinions on the impact of members' characteristics, attitudes, and behavioural control on participation in health insurance. This choice of a five-point scale was made because it is better suited for individuals who are not accustomed to Likert scale measurements, allowing them to make fine distinctions and providing a higher potential for information gain (Krosnick & Presser, 2010; Paulhus, 1991). The indicator constructs for attitude were derived from the work of Bandura (2006) and Ajzen (2001), while those for behavioural control were based on Ajzen (2002) and Ajzen (2001). Furthermore, the indicators for the member characteristics construct drew inspiration from the research of Nsiah-Boateng et al. (2019), Kusi et al. (2017), and Agyepong et al. (2016). Attitude, behavioural control, and member characteristics comprised 5, 5, and 6 indicators, respectively. Participation behaviour was measured using 6 indicators. The extent of the relationships between variables and the structural model of this study were determined using partial least-squares structural equation modelling (PLS-SEM) with the assistance of SmartPLS 3.3.3-6 software, in line with the recommendations of Hair et al. (2011). PLS-SEM is the preferred method for assessing complex models with constraining effects on both observed and latent indicators, as it allows for a distribution-free variance approach and maximises explained variance (Pahlevan Sharif & Sharif Nia, 2018).

4. Findings and Discussion

4.1 Social-demographic Characteristics of the Co-operative Members

Table 1 provides an overview of the descriptive characteristics of the 500 co-operative members participating in this study. Among the respondents, 81.6% held memberships in specific health insurance schemes, while 18.8% did not. The majority of the respondents were engaged in self-employment (61.52%). Within this group, 35.5% had completed primary education, and 31.62% had attained certificates or diplomas. Additionally, the largest portion of respondents fell within the age range of 38 to 57 (52.9%), with their co-operative memberships spanning from 1 to 10 years (70.34%). Furthermore, 84.31% of the respondents were married, and their family sizes ranged from 0 to 4 households, accounting for 88.97% of the total.

Table 1: Social-demographic Characteristics of the Respondents (n=500)

Variable	Health Insurance Membership Status	
	Yes (n=408; 81.6%)	No (n=92; 18.4%)
Gender		
Male	278 (68.14%)	66 (71.74%)
Female	130 (31.86%)	26 (28.26%)
Marital Status		
Married	344 (84.31%)	79 (85.87%)
Others	64 (15.69%)	13 (14.13%)
Age Categories		
18-37	71 (17.40%)	15 (16.30%)
38-57	216 (52.94%)	49 (53.26%)
58-77	113 (27.70%)	27 (29.35%)
78+	8 (1.96%)	1 (1.09%)
Education Level		
Primary	143 (35.05%)	23 (25.00%)
Secondary	76 (18.63%)	17 (18.48%)
Certificate and Diploma	129 (31.62%)	38 (41.30%)
Degree	60 (14.70%)	14 (15.22%)
Employment/Occupation Status		
Government employee	83 (20.34%)	0
Private sector employee	74 (18.14%)	34 (36.96%)
Self-employed	251 (61.52%)	58 (63.04%)
Household Size		
0-6	320 (78.43%)	69 (75.00%)
7+	88 (21.57%)	23 (25.00%)
Number of Dependants in the Household		
0-4	363 (88.97%)	79 (85.87%)
5+	45 (11.03%)	13 (14.13%)
Co-operative Membership Time		
1-10	287 (70.34%)	62 (67.40%)
11-20	88 (21.57%)	23 (25.00%)
21+	33 (8.09%)	7 (7.60%)

The formative measurement approach was employed because each indicator explicitly encapsulated the construct's domain, as advocated by Hair et al. (2017). Consequently, it was imperative to ascertain convergent validity, assess collinearity between indicators, and evaluate the significance and relevance of outer weights. Convergent validity refers to the extent to which a measurement correlates positively with other measurements of a similar construct that employ distinct indicators. This was accomplished through redundancy analysis, where a correlation exceeding 0.70 within the formative indicator construct was considered appropriate (Chin, 1998; Hair et al., 2017). As illustrated in Figures 2, 3, and 4, redundancy analyses conducted on the formatively measured constructs: Characteristics, Attitude, and Behavioural Control yielded correlation scores of 0.736, 0.834, and 0.804, respectively. These outcomes unequivocally affirm the presence of convergent validity for all constructs.

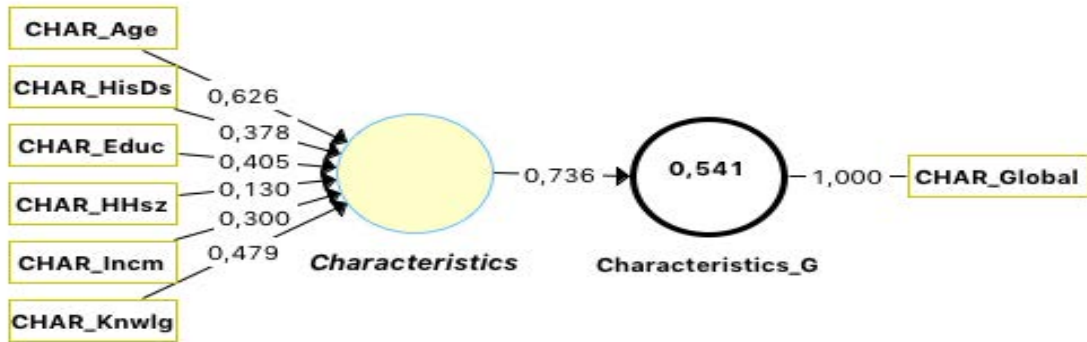


Figure 2: Convergent validity for the construct: Co-operative Members' Characteristics

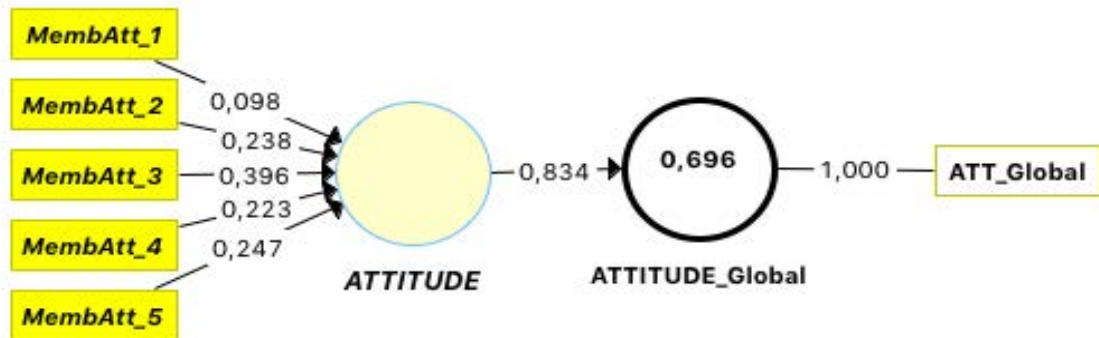


Figure 3: Convergent validity for the construct: Co-operative Members' Attitude

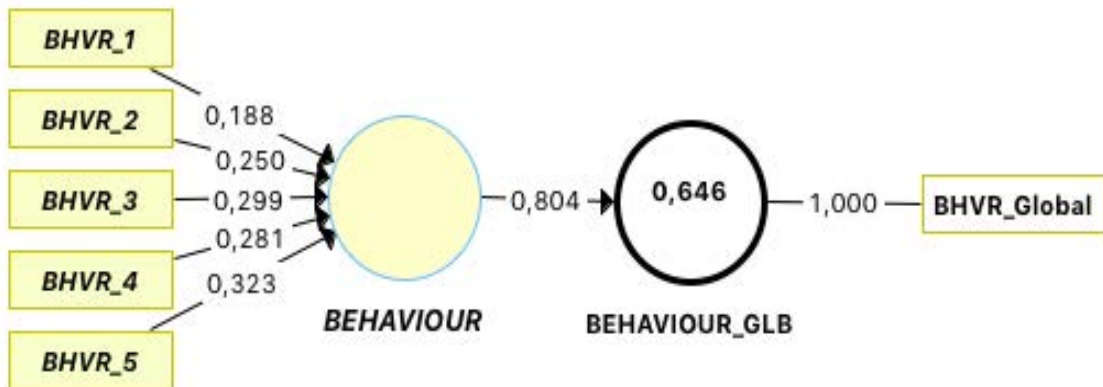


Figure 4: Convergent validity for the construct: Co-operative Members' Behavioural Control

4.2 Assessment of Collinearity among Indicators

The evaluation of collinearity among indicators was undertaken to determine whether indicators sharing similar information were addressing the same formative construct in the model. In accordance with Hair et al. (2017), the Variance Inflation Factor (VIF) was employed as a proxy measure of collinearity. A VIF value less than 5 for an indicator indicates the absence of potential collinearity among indicators, as recommended by Hair et al. (2017). Any indicator with a VIF exceeding 5 was considered for removal, as it could potentially disrupt and influence the estimation of model weights (Hair et al., 2017). The results of the collinearity assessment are presented in Table 2 below:

Table 2: Collinearity Statistics

Formative Construct	Formative Indicator	VIF
Co-operative Members' Behavioural Control	BHVR_1	2.274
	BHVR_2	2.069
	BHVR_3	1.487
	BHVR_4	2.864
	BHVR_5	1.250
Co-operative Members' Characteristics	CHAR_Age	4.012
	CHAR_Educ	2.455
	CHAR_HHsz	1.364
	CHAR_HisDs	1.305
	CHAR_Incm	2.364
Co-operative Members' Attitude	CHAR_Knwlg	2.773
	MembATT_1	2.487
	MembATT_2	2.208
	MembATT_3	2.061
	MembATT_4	1.992
Participation in Health Insurance	MembATT_5	2.307
	PAT-1	1.021
	PAT-2	1.022
	PAT-3	1.054
	PAT-4	1.055
	PAT-5	1.223
	PAT-6	1.037

The outcomes presented in Table 2 reveal that *CHAR_Age* has a VIF value of 4.012, which is the highest among all other indicators. However, it remains lower than the critical threshold of 5. Consequently, there is no discernible risk of collinearity among the formative constructs that could potentially impede the accurate estimation and evaluation of the structural model concerning participation in health insurance.

4.3 Evaluation of Outer Weights and Significance through Bootstrapping

To further validate our formative measurement model, we conducted bootstrapping to assess the significance and relevance of outer weights and outer loadings. The results for the formatively measured constructs, including Behavioural Control, Characteristics, and Attitude, are presented in Table 3. This table provides estimates for outer weights, outer loadings, corresponding t values, p values, and confidence intervals, all derived using the percentile method (BCa).

Table 3: Results of Significance Testing for Outer Weights of Formative Constructs

Formative Constructs	Formative Indicator	Outer Weights	Outer Loadings	T Values	P Values	95% BCa C.I	Significance p<0.05
Behavioural Control	<i>BHVR_1</i>	0.733	0.702	5.626	0.000	0.475,0.986	Yes
	<i>BHVR_2</i>	0.017	0.535	0.136	0.892	-0.232,0.247	No
	<i>BHVR_3</i>	0.296	0.523	3.897	0.000	0.150,0.449	Yes
	<i>BHVR_4</i>	-0.589	0.271	4.162	0.000	-0.853,-0.296	Yes
	<i>BHVR_5</i>	0.613	0.792	7.506	0.000	0.445,0.766	Yes
Characteristics	<i>CHAR_Age</i>	0.726	0.856	6.097	0.000	0.487,0.956	Yes
	<i>CHAR_Educ</i>	0.381	0.826	5.513	0.000	0.246,0.516	Yes
	<i>CHAR_HHsz</i>	0.115	-0.252	2.176	0.030	0.003,0.215	Yes
	<i>CHAR_HisDs</i>	0.415	0.562	7.577	0.000	0.305,0.518	Yes
	<i>CHAR_Incm</i>	0.183	0.652	1.831	0.067	-0.023,0.365	No
	<i>CHAR_Knwlg</i>	0.511	-0.507	5.765	0.000	0.346,0.691	Yes
Attitude	<i>MembATT_1</i>	0.010	0.587	0.035	0.972	-0.642,0.534	No
	<i>MembATT_2</i>	0.639	0.462	3.200	0.001	0.262,1.037	Yes
	<i>MembATT_3</i>	0.187	0.650	0.899	0.369	-0.234,0.584	No
	<i>MembATT_4</i>	-1.223	-0.316	9.019	0.000	-1.438, -1.011	Yes
	<i>MembATT_5</i>	0.669	0.401	3.016	0.003	0.220,1.075	Yes
Participation	<i>PAT-1</i>	0.005	0.647	0.105	0.916	-0.088,0.101	No
	<i>PAT-2</i>	-0.032	0.529	0.735	0.462	-0.119,0.058	No
	<i>PAT-3</i>	0.943	0.983	19.109	0.000	0.822,0.997	Yes
	<i>PAT-4</i>	0.185	0.691	1.824	0.068	0.002,0.401	No
	<i>PAT-5</i>	-0.319	-0.191	2.983	0.001	-0.525, -0.306	Yes
	<i>PAT-6</i>	0.470	0.373	2.351	0.009	0.005, 0.731	Yes

Table 3 provides the results of significance testing for the outer weights of formative constructs. Notably, with the exception of the outer weight estimates for *BHVR_2*, *CHAR_Incm*, *MembATT_1*, *MembATT_3*, *PAT-1*, *PAT-2*, and *PAT-4*, all other formative indicators demonstrate significance, denoted by $p < 0.05$. This signifies their substantial role in shaping the formative constructs. Cenfetelli & Bassellier (2009) and Hair et al. (2017) advocate a criterion where formative indicators with insignificant outer loadings but values exceeding 0.5 are retained for analysis, as they continue to contribute valuable content to the explanation of the formative construct. Conversely, indicators with both insignificant and lower outer loadings are considered irrelevant and thus candidates for removal. In line with this criterion, the outer loadings for *BHVR_2*, *CHAR_Incm*, *MembATT_1*, *MembATT_3*, *PAT-1*, *PAT-2*, and *PAT-4* are deemed significant at the 5% significance level. As a result, these indicators are retained in the model, as they provide valuable insights into member characteristics, attitudes, behavioural control, and participation in the context of health insurance.

4.4 Structural Model Measurement

To assess the structural model's quality, we analyzed its R-Square values to gauge the coefficient determination of all exogenous constructs with respect to the endogenous constructs within the model, as recommended by Hair et al. (2017). The outcomes of this analysis are presented in Table 4 below.

Table 4: Coefficient of Determination (R-Square)

R Square		
	R Square	R Square Adjusted
Participation	0.569	0.567

The R-Square statistic serves as a crucial indicator of the model's predictive power, reflecting the extent to which exogenous latent variables collectively account for the variations in the endogenous latent variable. As outlined by Hair et al. (2011) and Henseler et al. (2009), R-Square values falling within the range of 0.50 to 0.75 are indicative of a moderate level of predictability concerning the combined effects of exogenous constructs on endogenous constructs. As indicated in Table 4, the model yields an R-Square value of 0.569. This value falls within the aforementioned range, demonstrating that the constructs of attitude, behavioural control, and characteristics possess a moderate predictive capacity. Hence, these constructs prove to be sufficiently potent in predicting co-operative members' participation in health insurance.

Table 5: f Square Estimates

	Attitude	Behavioural Control	Characteristics	Participation
Attitude				0.063
Behavioural Control				0.018
Characteristics				0.519
Participation				

In this analysis, the F-Square value serves as a valuable metric for measuring the specific effect size of individual exogenous constructs in predicting the structural model. Additionally, it aids in estimating the potential influence of omitted constructs on endogenous variables within the model. As stipulated by Hair et al. (2017), F-Square values less than 0.02 indicate no discernible effect, while values falling within the ranges of 0.02 to 0.15, 0.15 to 0.35, and above 0.35 correspond to small, medium, and large effects of the exogenous latent variable, respectively. From the findings presented in Table 5, it is evident that characteristics exhibit a substantial effect with an F-Square value of 0.519. In contrast, attitude and behavioural control demonstrate a medium effect (0.063) and no effect (0.018), respectively, on health insurance participation among co-operative members. Notably, as per the analysis, the omission of behavioural control from the model does not significantly impact its predictive power when assessing co-operative members' participation in health insurance.

Moving forward, the assessment of the structural model delves into the examination of path coefficients and total effects of each exogenous construct, namely attitude, behavioural control, and characteristics. These analyses elucidate the relationships of these constructs with the endogenous formative construct, which is participation. The results of this analysis are presented in Table 6.

Table 6: Structural Model Relationships

Relationship	Hypotheses	β	T Statistics	q Values
Attitude -> Participation	H1	0.171	2.899	0.004
Behaviour Control -> Participation	H2	0.115	2.056	0.040
Characteristics -> Participation	H3	0.629	11.838	0.000

The results presented in Table 6 offer valuable insights into the significance and relative influence of members' characteristics, attitudes, and behavioural control on their participation in health insurance. We find that behavioural control among members has limited significance ($\beta = 0.115$, $q < 0.040$) compared to other variables, suggesting that it exerts a comparatively weaker influence on health insurance participation. Members' characteristics ($\beta = 0.629$, $q < 0.000$) emerge as the predominant factor, followed by members' attitude ($\beta = 0.171$, $q < 0.004$), in shaping participation in health insurance. Notably, all three

variables exhibit positive and significant relationships, confirming the support for all formulated hypotheses. Member characteristics stand out as the primary driver, with the highest positive coefficient, thus exerting the most substantial effect on member participation in health insurance, surpassing the influence of member attitude or behavioural control.

Taking a closer look at the characteristics construct, several key indicators surface as influential factors. Age, consistent with findings from Amani et al. (2020) and Bauhoff (2020), plays a significant role. In many co-operative societies, particularly Agricultural and Marketing Co-operative Societies (AMCOS), older members constitute a substantial portion of the membership. These individuals may have encountered challenges related to health insurance participation over time. Health policies that favor older individuals, providing access to some health services at reduced costs, have inadvertently diminished the perceived need for health insurance coverage among this demographic. Insurance providers, in turn, often view older members as higher-risk clients, which can result in stricter conditions for insuring this group. Addressing these issues is paramount to enhance participation among older co-operative members. Similarly, knowledge about insurance operations emerges as another influential factor, consistent with the findings of Prakoso et al. (2020), Alhassan (2018), and Fenny et al. (2018). A comprehensive understanding of insurance operations empowers members to make informed decisions regarding participation in health insurance initiatives through co-operatives. Therefore, efforts to enhance knowledge and awareness among health insurance members can substantially impact their participation choices.

Surprisingly, members with a history of chronic diseases exhibit a stronger inclination towards participating in health insurance. Prolonged illness often results in significant out-of-pocket expenditures related to healthcare services, making insurance a more cost-effective option. However, insurers typically establish strict conditions for individuals with pre-existing health conditions. Therefore, sensitizing members about the conditions and implications of insuring individuals with chronic illnesses is crucial to facilitating informed decisions regarding participation. In contrast to expectations, members' income exhibited a lower impact on shaping member characteristics related to health insurance participation in co-operatives. This finding contrasts with those of Bauhoff (2020) and Nsiah-Boateng et al. (2019), who observed a stronger relationship between income and health insurance uptake. The study suggests that income may not be a limiting factor for participation, as each member has the flexibility to select an insurance coverage option aligned with their income. Collective decisions regarding co-operative participation in health insurance, along with contributions on behalf of members willing to join, can mitigate income-related constraints. Consequently, insurers should focus on tailoring insurance options to individual members and their households rather than solely considering the overall institutional capacity when seeking to boost participation. Additional indicators such as household size and education level contributed minimally to shaping member characteristics and, consequently, participation. This finding contradicts the results of Wang et al. (2020), Minyihun (2019), and Ebrahim et al. (2019), who reported positive influences of educational level and negative impacts of household size on health insurance participation.

Moving on to the construct of co-operative members' attitudes, we observe a positive yet comparatively less significant impact on participation. These findings differ from those of Adjabui et al. (2019) and Baillon et al. (2019), who found no discernible relationship between attitude and health insurance participation. For this study, a positive attitude towards health insurance indicates a higher likelihood of participation and an increased capacity to influence others to join such insurance schemes. This aligns with the findings of Raza et al. (2019), Chemouni (2018), and Panda et al. (2015), emphasizing the investment perspective associated with health insurance. Consequently, a positive attitude positively predicts and influences co-operative members towards health insurance participation. Insurers should consider the timing of members' attitudes favoring health insurance when aiming to increase participation, recognizing the potential for attitudes to shift over time. Similarly, member behavioural control significantly and positively influences health insurance participation, corroborating the findings of Ebrahim et al. (2019), Nsiah-Boateng et al. (2019), and Mas'ud (2016). Members' belief in their capabilities, along with their confidence in leaders and fellow members possessing the necessary traits, increases the likelihood of participation through co-operatives.

This observation aligns with the assertions made by Rezaee et al. (2019) and Ellis (2016), suggesting that participation in health insurance is more likely when it aligns with an individual's pattern of behavioural control. For this study, behavioural control likely developed through daily routines related to managing and perceiving health issues and insurance within the co-operative context. Thus, understanding and investing in an in-depth understanding of co-operative members' behavioural control patterns are essential for promoting health insurance participation.

5. Conclusion and Recommendations

This study delved into the influence of members' attributes on participation behaviour in health insurance within cooperative frameworks. In congruence with the Theory of Planned Behaviour, the findings of this study underscore that cooperative members' characteristics, attitudes, and behavioural control exert a positive influence on health insurance participation. Notably, the results regarding members' characteristics revealed a significantly stronger positive impact on participation compared to attitudes and behavioural control. This highlights the pivotal role of comprehending all facets that influence the decision-making patterns of the insured—a crucial step towards fostering increased and sustainable participation in health insurance. For health insurance providers, a lack of insight or understanding of cooperative members' characteristics, attitudes, and behavioural control may lead to the design of ill-suited insurance packages, potentially resulting in the failure of intended insurance initiatives. Therefore, it is strongly encouraged and recommended that insurers examine and consider members' attributes that bolster and enhance their propensity to participate in health insurance. In particular, insurers should develop health insurance packages that accommodate individuals of varying characteristics, encompassing age, history of chronic diseases, income, and household size, with the aim of augmenting the number of participants in health insurance.

Furthermore, stakeholders such as insurers, government entities, and cooperatives should allocate resources towards the creation of awareness programs aimed at enhancing individuals' knowledge and understanding of health insurance operations. Such efforts will empower individuals to make effective and informed decisions regarding their participation in health insurance schemes. Additionally, cooperative leaders and insurers should prioritize transparency and accountability in all matters related to health insurance. By doing so, they can nurture and sustain the trust and confidence of cooperative members, thereby fostering greater participation in health insurance. However, it is crucial to acknowledge that member attributes, encompassing characteristics, attitude, and behavioural control, are not the sole predictors of cooperative members' participation behaviour in health insurance. These variables, as identified in this study, account for approximately 56.9% of the variation in health insurance participation behaviour among cooperative members (as denoted by the R² value). The remaining 43.1% remains unexplained by the current model. Consequently, this study advocates for further research that explores various other directly measured variables capable of providing additional insights into health insurance participation behaviour. Such future investigations should also consider the impact of laws, policies, and regulations governing the insurance and cooperative industries in emerging economies, akin to Tanzania. By delving deeper into these aspects, we can gain a more comprehensive understanding of the dynamics surrounding health insurance participation and contribute to the development of more effective strategies and policies in this context.

References

- Adebayo, E. F., Uthman, O. A., Wiysonge, C. S., Stern, E. A., Lamont, K. T., & Ataguba, J. E. (2015). A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. *BMC Health Services Research*, 15(1): 1-13.
- Adjabui, J. A., Tozer, P. R., & Gray, D. I. (2019). Willingness to participate and pay for index-based crop insurance in Ghana. *Agricultural Finance Review*, 79(4): 491-507.
- Agyepong, I. A., Abankwah, D. N. Y., Abroso, A., Chun, C., Dodoo, J. N. O., Lee, S., & Asenso-Boadi, F. (2016). The Universal in UHC and Ghana's National Health Insurance Scheme: policy and implementation challenges and dilemmas of a lower middle income country. *BMC Health Services Research*, 16(1): 1-14.

- Ajzen, I. (1985). From intentions to actions: a theory of planned behaviour. In: Kuhl J., Beckmann J. (eds) *Action Control: SSSP Springer Series in Social Psychology*. Berlin: Springer.
- Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes*, 50(2): 179-211.
- Ajzen, I. (2001). Attitudes. *Annual Review of Psychology*, 52: 27-58.
- Ajzen, I. (2002). Perceived behavioural control, self-efficacy, locus of control, and the theory of planned behaviour. *Journal of Applied Social Psychology*, 32(4): 665-683.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Alhassan, Y. N. (2018). Effect of informal financial support for health care on health Insurance uptake: Evidence from a mixed-methods study in Tamale metropolis of northern Ghana. *The International Journal of Health Planning and Management*, 33(4): 1-14.
- Amani, P. J., Tungu, M., Hurtig, A., Kiwara, A. D., Frumence, G., & Sebastián, M. S. (2020). Responsiveness of health care services towards the elderly in Tanzania: does health insurance make a difference? A cross-sectional study. *International Journal for Equity in Health*, 19(179): 1-9.
- Baillon, A., Kraft, A. D., O'Donnell, O., and van Wilgenburg, K. A. (2019). Behavioural Decomposition of Willingness to Pay for Health Insurance. Tinbergen Institute Discussion Paper 2019-077/I. DOI: <http://dx.doi.org/10.2139/ssrn.3488634>.
- Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (Vol. 5, pp. 307-337). Greenwich, CT: Information Age Publishing.
- Bauhoff, S., Carman, K. G., & Wuppermann, A. (2020). Financial literacy and consumer choice of health insurance: evidence from low-income populations in the United States. *Transforming Health Care: Advances in Health Care Management*, 19: 115-128.
- Borghji, J., Maluka, S., Kuwawenaruwa, A., Makawia, S., Tantau, J., Mtei, G., & Macha, J. (2013). Promoting universal financial protection: a case study of new management of community health insurance in Tanzania. *Health Research Policy and Systems*, 11:1-13.
- Cenfetelli, R. T., & Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *MIS Quarterly*, 33: 689-708.
- Chemouni, B. (2018). The political path to universal health coverage: power, ideas and community-based health insurance in Rwanda. *World Development*, 106: 87-98.
- Chen, J., Dong, H., Yu, H., Gu, Y., & Zhang, T. (2018). Impact of new rural co-operative medical scheme on the equity of health services in rural China. *BMC Health Services Research*, 18(1): 1-7.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-358). Mahwah, NJ: Erlbaum.
- Chomi, E., Mujinja, P. G. M., Enemark, U., Hansen, K., Kiwara, A. (2014). Health care seeking behaviour and utilisation in a multiple health insurance system: does insurance affiliation matter? *International Journal for Equity in Health*, 13(1): 1-11.
- Coaley, K. (2010). *An introduction to psychological assessment and psychometrics*. SAGE Publications Ltd.
- Comrey, A., & Lee, H. (1992). *A first course in factor analysis* (2nd Edn.) Lawrence Earlbaum associates. Publishers: Hillsdale, New Jersey.
- Conner, M. & Norman, P. (2005). *Predicting Health Behaviour: Research and Practice with Social Cognition Models*, (2nd Edn). Open University Press, Maidenhead.
- Devasoorya, R.M & Srinivasa Vallabhan, S. V. (2016). Healthcare Co-Operatives: Possible Third Realm of Healthcare in India. <https://ssrn.com/abstract=2860548>.
- Drolet, J. (Ed.). (2016). *Social development and social work perspectives on social protection*. Abingdon: Routledge.
- Dror, D. M., Hossain, S. A. S., Majumdar, A., Pérez Koehlmoos, T.L., John, D., & Panda, P.K. (2016). What factors affect voluntary uptake of community-based health insurance schemes in low- and middle-income countries? A systematic review and meta-analysis. *PLoS One*, 11(8): 1-31.
- East African Community (EAC) (2014). *Situational Analysis and Feasibility Study of Options for Harmonization of Social Health Protection Systems towards Universal Health Coverage in the East African Community Partner States*. East African Community (EAC) Secretariat. Arusha.

- Ebrahim, K., Yonas, F., & Kaso, M. (2019). Willingness of community to enrol in community based health insurance and associated factors at household Level in Siraro District, West Arsi Zone, Ethiopia. *Journal of Public Health and Epidemiology*, 11(6): 137-144.
- Echchabi, A., Azouzi, D. & Aziz, H.A. (2016). The future prospects of Islamic banking in Tunisia: an empirical survey. *EuroMed Journal of Business*, 11 (1): 119-131.
- Ellis, E. (2016). *Farmers willingness to pay for crop insurance: Evidence from Eastern Ghana*. McGill University (Canada).
- Fenny, A.P., Yates, R. & Thompson, R. (2018). Social health insurance schemes in Africa leave out the poor, *International Health*, 10(1): 1-3.
- Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York, NY: Psychology Press.
- Gaiimo, S. (2013). Behind the Scenes of the Patient Protection and Affordable Care Act: The Making of a Health Care Co-op. *Journal of Health Politics, Policy and Law*, 38(3): 599–610.
- Golnaz, R., Zainalabidin, M., Mad Nasir, S. & Eddie Chiew, F.C. (2010). Non-Muslims' awareness of halal principles and related food products in Malaysia. *International Food Research Journal*, 17(3): 667-674.
- Hair, J.F.J, Ringle, C.M. & Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *Journal of Marketing Theory & Practice*, 19(2): 139-152.
- Hair, J.F.J., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, (2nd Edn). Sage, Thousand Oaks, CA.
- Henry, H., & Schimmel, C. (2011). *Co-operatives for people-centred rural development*. International Labour Office Rural Policy Briefs. ILO. Geneva.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, 20: 277–320.
- Huda, N., Rini, N., Mardoni, Y. & Putra, P. (2012). The analysis of attitudes, subjective norms, and behavioral control on muzakki's intention to pay zakah. *International Journal of Business and Social Science*, 3(22): 271-279.
- Husin, M.M. & Rahman, A.A. (2016). Predicting intention to participate in family takaful scheme using decomposed theory of planned behaviour. *International Journal of Social Economics*, 43(12): 1351-1366.
- ILO, (2021). *World Social Protection Report 2020–22: Social Protection at the Crossroads – in Pursuit of a Better Future*. ILO. Geneva.
- Jamieson, S. (2004). Likert scales: how to (ab) use them. *Medical Education*, 38(12): 1217-1218.
- Kapologwe, N. A., Kagaruki, G. B., Kalolo, A., Ally, M., Shao, A., Meshack, M. & Hoffman, A. (2017). Barriers and facilitators to enrollment and re-enrollment into the community health funds/Tiba Kwa Kadi (CHF/TIKA) in Tanzania: a cross-sectional inquiry on the effects of socio-demographic factors and social marketing strategies. *BMC health services research*, 17: 1-9.
- Kassin, S. (2003). *Psychology*. USA: Prentice-Hall, Inc.
- Kassin, S., Fein, S., & Markus, H. (2021). *Social psychology* (11th Ed). Belmont, CA: Cengage Learning.
- Kigume, R., & Maluka, S. (2021). The failure of community-based health insurance schemes in Tanzania: opening the black box of the implementation process. *BMC Health Services Research*, 21(1): 1-8.
- Krosnick, J. A., & Presser, S. (2010). Questionnaire design In: JD Wright and PV Marsden. *Handbook of survey research*, 263-313.
- Kusi, A., Enemark, U., Hansen, K. S., & Asante, F. A. (2015). Refusal to enrol in Ghana's National Health Insurance Scheme: is affordability the problem?. *International journal for equity in health*, 14(1): 1-14.
- Mas'ud, A. (2016, October). Integrating the moderating effect of individuals' risk vulnerability into takaful acceptance model: evidence from a frontier market. In *Paper presentation on 11th International Conference on Islamic Economics and Finance*.
- McCord, M.J. & Osinde, S. (2005). Reducing vulnerability: The supply of health insurance in East Africa. *Journal of International Development*, 17: 337–381.
- Minyihun, A., Gebregziabher, M. G., & Gelaw, Y. A. (2019). Willingness to pay for community-based health insurance and associated factors among rural households of Bugna District, Northeast Ethiopia. *BMC research notes*, 12: 1-7.

- Mpambije, C.J. (2017). Decentralisation of Health Systems and the Fate of Community Health Fund in Tanzania: Critical Review of High and Low Performing Districts. *Science Journal of Public Health*, 5(2): 136-144.
- Nsiah-Boateng, E., Nonvignon, J., Aryeetey, G. C., Salari, P., Tediosi, F., Akweongo, P., & Aikins, M. (2019). Sociodemographic determinants of health insurance enrolment and dropout in urban district of Ghana: a cross-sectional study. *Health economics review*, 9(1): 1-9.
- Odeyemi, I. A. (2014). Community-based health insurance programmes and the national health insurance scheme of Nigeria: challenges to uptake and integration. *International journal for equity in health*, 13: 1-13.
- Organisation for Economic Co-operation and Development (2019). *Health Expenditure and Financing Database*. <http://stats.oecd.org/#>.
- Osabohien, R., Matthew, O., Ohalete, P., & Osabuohien, E. (2020). Population–poverty–inequality nexus and social protection in Africa. *Social Indicators Research*, 151(2): 575-598.
- Pahlevan Sharif, S., & Sharif Nia, H. (2018). *Structural equation modeling with AMOS*. Tehran: Artin Teb.
- Panda, P., Dror, I., Koehlmoos, T. P., Hossain, S. S., John, D., Khan, J. A., & Dror, D. M. (2016). *What Factors Affect Uptake of Voluntary and Community-Based Health Insurance Schemes in Low-and Middle-Income Countries? A Systematic Review*. EPPI-Centre. Social Science Research Unit, Institute of Education, University of London.
- Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightman (Eds.), *Measures of Personality and Social Psychological Attitudes*, Volume 1 (pp. 17-59). San Diego: Academic Press.
- Prakoso, A.D, Sulaeman, E.S., & Suryono, A. (2020). Application of Health Belief Model on Factors Affecting Participation in the National Health Insurance Scheme among Informal Sector Workers in Kudus, Central Java. *J Health Policy Manage*. 5(1): 61-73.
- Raza, S.A., Ahmed, R., & Ali, M. (2019). Influential factors of Islamic Insurance Adoption: An Extension of Theory of Planned Behavior. *Journal of Islamic Marketing*, 11(6): 1497-1515.
- Rezaee, M.E., Ward, C.E., Pais, V.M., & Dagrosa, L.M., (2019). Influence of Men's Attitudes toward Health and Health Insurance on Prostate Specific Antigen Screening for the Early Detection of Prostate Cancer. *Urology Practice*, 6: 357-363.
- Scheil-Adlung, X., Bonnet, F., Wiechers, T., & Ayangbayi, T. (2010). *New approaches to measuring deficits in social health protection coverage in vulnerable countries*. World health report.
- Setyobudi, W.T., Wiryono, S.K., Nasution, R.A. & Purwanegara, M.S. (2015). Exploring implicit and explicit attitude toward saving at Islamic bank. *Journal of Islamic Marketing*, 6(3): 314-330.
- Sfakianakis, G., Grigorakis, N., Galyfianakis, G., & Katharaki, M. (2020). The impact of macro-fiscal factors and private health insurance financing on public health expenditure: evidence from the OECD countries for the period 2000–2017. *EuroMed Journal of Business*, 16(1): 1-24.
- Sherma, U., & Mannan, H. (2015). Do Attitudes Predict Behaviour – Unsolved Mystery? *Foundations of Inclusive Education Research*, 6: 115-131.
- Sundaram-Stukel, R., & Deller, S. (2009). Farmer Health Insurance Cooperatives: an innovative solution for other Americans?. *Choices*, 24(4):1-7.
- United Nations (2015), *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/ RES/70/1. United Nations, New York, NY.
- URT. (2001). *The Community Health Fund Act, 2001*. Dar es Salaam: Government Printer.
- URT. (2003). *The National Social Security Policy*. Dar es Salaam: Ministry of Labour, Youth Development and Sport.
- URT. (2008). *Final Draft: National Social Protection Framework*. Dar es Salaam: Ministry of Finance and Economic Affairs.
- URT. (2022). *Explanations on Frequently Asked Questions by Citizens through Media and Social Networks about Universal Health Insurance Bill. For public consumption*. 1st ed. Ministry of Finance. Dodoma. <https://www.moh.go.tz/storage/app/uploads/public/634/2e5/a84/6342e5a846471581312111.pdf>.
- Wagstaff, A., Cotlear, D., Eozenou, P.H.V. & Buisman, L.R. (2016). Measuring progress towards universal health coverage: with an application to 24 developing countries. *Oxford Review of Economic Policy*, 32(1): 147-189.

- Wajanga, B., Kim, C. Y., Peck, R. N., Bartlett, J., Mabula, D., Juma, A., & Muiruri, C. (2022). Is lack of health insurance a predictor of worsening of heart failure among adult patients attending referral hospitals in Northwestern Tanzania?. *PloS one*, 17(3), e0264352.
- Wang, J., Zhu, H., Liu, H., Wu, K., Zhang, X., Zhao, M. & Shan, L. (2020). Can the reform of integrating health insurance reduce inequity in catastrophic health expenditure? Evidence from China. *International Journal for Equity in Health*, 19: 1-15.
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety. *Educational and Psychological Measurement*, 73: 913-934.
- World Bank. (2019). *World Bank National Accounts Data, and OECD National Accounts Data Files: Data from Database. World Development Indicators.* <http://databank.worldbank.org/data/reports.aspx?source5world-development-indicators>.
- World Health Organization. (2020). *Health Financing for Universal Coverage: Key Policy Messages.* http://www.who.int/health_financing/topics/financial-protection/key-policy-messages/en/.



EMERGING PRINCIPLES GUIDING PERSONAL NAMING PRACTICES IN SUKUMA LANGUAGE

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ABSTRACT

This study explores the intricate principles governing personal naming practices in the Sukuma language, a prominent linguistic community in Tanzania, mainly concentrated in five administrative regions, including Shinyanga. It contends that personal names, as linguistically infused entities, intricately reflect various sociocultural aspects of human existence. The process of selecting these names is not random but guided by discernible principles, often subtly ingrained within linguistic systems. Utilising a case study approach, a sample of twelve native Sukuma speakers was selected through purposive sampling methods. Data collection involved focus group discussions and semi-structured interviews. Data analysis adopted an interpretative paradigm, subjecting the collected data to thorough scrutiny and categorising it into thematic clusters that resonate with various factors influencing individual naming. These factors include birth timing, geographical location of birth, infantile features and behaviour at birth, ecological elements, and birth circumstances. Collectively, these factors form the foundation of the principled framework that shapes personal naming conventions in the Sukuma context. Findings emphasise the multiplicity of principles underlying the intricate process of personal naming among the Sukuma people. While some principles align with cross-linguistic patterns for instance the salience principle, others exhibit uniqueness to this linguistic milieu like the iconicity principle. These findings highlight that personal naming is a systematic, methodical endeavour guided by well-defined principles in the Sukuma culture. The conclusion made is that this study underscores the meticulous and principled nature of personal naming customs among the Sukuma. The study proposed that further investigation is essential to elucidate, validate, and extend these principles to diverse linguistic paradigms. This endeavour promises a comprehensive exploration of the systematic foundations that characterise naming conventions.

Keywords: Kemunasukuma, Naming conventions, Personal naming, Principles, Sukuma culture, Sukuma language

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1. Introduction

This paper embarks on a comprehensive exploration of the underlying principles that govern the intricate practice of personal naming within the Sukuma language. The advent of a new child within a family invariably precipitates the necessity for a name to be bestowed upon the individual. This critical aspect underscores the universal nature of personal naming, wherein each individual is endowed with a distinctive appellation. Names, beyond their linguistic significance, serve as potent tools of communication, profoundly shaping human interaction and experience. The assignment of names is a fundamental attribute of human existence, extending across diverse cultures and geographical boundaries. For instance, within the Akan cultural milieu, Adomako (2015) observes the allocation of dual names to each child, comprising the day name and the family name, signifying the cultural significance of nomenclature. Similarly, among



the Bono community, Ansu-Kyeremeh (2000) elucidates the practice of ascribed and bestowed names. This paradigm further extends to the Sukuma population, wherein children commonly bear two names. The primary appellation, termed *lima lya mukaya* 'home/clan name', is imparted post-birth by grandparents, parents, or relatives, serving as a prominent identifier acknowledged primarily within familial circles. In tandem, the secondary designation, termed *lima lya nyazunya* 'baptismal name' or 'modern name', reflects a contemporary or religious name, attributed by the child's parents based on their religious affiliations. This appellation typically finds utility within church congregations or schools/colleges during registration.

In a global context, personal naming emerges as a ubiquitous cultural phenomenon traversing all societies and cultures. The act of naming confers a distinct identity upon an individual, which, in essence, remains immutable throughout their lifetime. Names assume an integral role in recognizing and distinguishing people's histories, cultures, and origins across the expanse of the globe (Agyekum, 2006; Manyasa, 2009). The assertion made by Shigini and Mapunda (2023:74) underscores the pivotal role of names as "tools that people use to understand, communicate, and embrace reality about individuals' lives." Within this framework, personal names constitute an intrinsic component of every linguistic lexicon, encapsulating multifaceted dimensions of culture, aspirations, beliefs, and sentiments. As aptly encapsulated by Chipalo (2019:75), personal names function as "storerooms for keeping historical records and sustaining the shared beliefs and identity of a community." Thus, personal names serve as the primary conduits of individual identity, concurrently serving as repositories of communal narratives, encapsulating both collective and individual experiences.

Evidently, the process of personal naming, particularly within African cultural contexts, assumes an elevated status, warranting meticulous consideration by the community. Mashiri et al. (2013) aptly depict the act of name-giving as a profound, mindful, and intentional endeavor intricately interwoven with cultural beliefs, customs, aspirations, and events. This reverence for the naming process is accompanied by the scrupulous selection of names, governed by well-established principles, methodologies, and patterns (Mutegi et al., 2017). This cultural practice is predicated upon the deeply rooted belief that names possess an inherent mystical potency capable of shaping character and influencing an individual's destiny (Musonda et al., 2019). Names are not mere linguistic constructs; rather, they serve as vessels harbouring spiritual energy. The gravity attributed to personal names within numerous African cultures is highlighted by the assertion of (Saarelma-Maunumaa, 2003), positing that an individual only truly attains personhood upon receiving a fitting appellation. Consequently, the nomenclature assigned to an individual is a product of an intricately woven naming framework (Mheta et al., 2017).

As demonstrated, the act of conferring personal names upon newborns is a widespread cultural practice, resonating universality across diverse communities. However, the manner in which these names are bestowed, the motivating factors underpinning their selection, the connotations attributed to them, and the accompanying rituals exhibit substantial cultural variation (Adjah, 2011; Agyekum, 2006; Al-Zumor, 2009; Mashiri et al., 2013; Mutunda, 2016). This variance highlights the existence of cultural practices that traverse diverse societies, alongside idiosyncratic practices that remain culture-specific. This divergence can be attributed, in part, to distinct conceptualisations and understandings of the world, inherently shaped by individual knowledge, lived experiences, and contexts, all of which converge within the fabric of the bestowed personal names.

Despite scholarly acknowledgments, such as those presented by Mutegi et al. (2017), Mheta et al. (2017), and Mashiri et al. (2013), regarding the methodical nature of the personal naming process, the central focus has predominantly rested upon the semantic and emblematic dimensions of personal names as tools of communication and agents of identity. While these dimensions have been extensively dissected, the implicit bedrock upon which name-givers scaffold their selection of personal names remains unexplored, applicable across cultures or languages, including Sukuma. The elucidation of the foundational tenets guiding the choice of personal names has paramount significance, enabling the comprehension of cultural knowledge, convictions, suppositions, and philosophies encapsulated within the nomenclature. Furthermore, the understanding of these guiding principles stands pivotal, serving to illuminate the inherent methodical

essence underpinning personal naming. This study is thus poised to examine the guiding principles governing personal naming practices within the Sukuma language, representative of the more than 150 indigenous languages spoken within Tanzania. The Sukuma community, constituting the largest ethnic group in Tanzania, systematically imparts personal names, with its epicentre in North-western Tanzania, prominently encompassing Shinyanga, Mwanza, Geita, Simiyu, and some areas of Tabora. It is important to note that individual Sukuma speakers, and those of other languages, are also dispersed across other Tanzanian regions due to fluid mobility dynamics (Shigini, 2020).

2. Literature Review

The exploration of personal names and naming practices has captivated the attention of scholars across diverse disciplines, including linguistics, history, anthropology, psychology, and philosophy, spanning several years. Consequently, a multitude of studies have been conducted globally on personal names and naming practices, with a pronounced focus on the African continent, Tanzania, and particularly the Sukuma ethnic group. Scholarly investigations into personal names span geographical boundaries, with researchers worldwide delving into multifaceted aspects, using diverse methodologies and theoretical frameworks. For instance, Al-Zumor (2009), investigating the Yemeni community, scrutinised the semantic, sociolinguistic, and morphological dimensions of female personal names using a questionnaire. This study discerned that names are imbued with meaningful connotations, debunking the notion of arbitrary nomenclature. In a similar vein, Rahman (2013) undertook an ethnographic exploration to unravel the intricate interplay between personal names and societal variables such as power dynamics, belief systems, and identity in Pakistan. By contrasting Al-Zumor's (2009) questionnaire-based approach, Rahman's (2013) investigation illuminated the intricate sociocultural tapestry underpinning the significance of names.

Drawing upon the interconnectedness between cultural practices and language, Devi (2018) delved into personal names within the Khurkhul community in India. This inquiry unveiled a direct correlation between personal names and their bearers within this society. Moreover, Aljbour and Al-Haq (2019) employed a synchronic and comparative methodology to analyze the sociolinguistic implications of Indonesian female personal names across three generations: grandmothers, mothers, and daughters. The findings revealed substantial generational disparities in name implications. In the realm of morphological analysis, Tahat (2020) applied the Item-and-Process morphological theory to dissect the morphological patterns underpinning Jordanian personal names, emphasising derivation and inflection as predominant formative processes. Al-Sayyed (2021), in contrast, explored the causal relationship between personal names and their usage through a causal theory of names. Employing a survey, this study established a substantial bond between a name and its pragmatic application. Within an African context, a plethora of investigations have extended to various African languages. Lungu et al. (2022), employing interviews and focus group discussions, illuminated the multifaceted motivations behind Namwanga personal names, embracing factors such as death, religion, birth events, order and manner of birth, birthplaces, and conflicts. Diden (2021) delved into Dawro personal names, highlighting the influence of social, cultural, and economic contexts on name choices. Furthermore, a morphological inquiry was conducted by Exeudo et al. (2021) on Onitsha personal names, unveiling syntactic and morphological structures primarily formed through prefixation, suffixation, and clipping. Kinyua (2020) and Minkailou and Abdoulaye (2020) examined the structure and meaning of Turkana and Songhay personal names respectively. Kinyua (2020) reported that Turkana personal names have prefixes, infixes, and suffixes attached to roots, and have denotative or connotative meanings. Minkailou and Abdoulaye (2020) exposed that the traditional personal names in Songhay have structures that go from simple words to complete sentences.

Tanzania has also been a fertile ground for scholarly investigations into personal names and naming practices. Lusekelo and Manyasa (2022) explored Nyamwezi and Sukuma personal names, affirming the meaningful nature of these linguistic forms. Chipalo (2019), Msuya (2021), Charwi (2019), Buberwa (2018), Lusekelo (2018), and Asheli (2017) undertook parallel inquiries in various community languages, affirming the embedded meanings mirroring sociocultural realities within their respective communities. Notably, within Sukuma, scholars such as Shigini and Mapunda (2023), Shigini (2020), and Athanas (2019) have explored the meaningfulness of Sukuma personal names, shedding light on the sociocultural intricacies

encoded within. Evidently, existing research underscores the essential role of personal names as carriers of sociocultural meanings, mirroring multifaceted aspects of individuals' lives and their cultural contexts. This body of work emphasises the meticulous nature of personal naming, governed by implicit principles that are integral to this linguistic endeavour. While prior studies have enriched our understanding of various facets of personal names and naming practices, they have not yet comprehensively elucidated the guiding principles that underscore the assignment of names, particularly within African and Tanzanian languages, including Sukuma. Therefore, this study undertakes a pivotal step in bridging this gap by investigating the principles that steer personal naming practices in the Sukuma language. Anchored in the understanding that personal names are imbued with profound sociocultural realities, the guiding premise posits that these names are selected in a manner guided by inherent principles, often implicit within language systems. By scrutinising the Kemunasukuma dialect, this research endeavours to unearth and articulate these guiding principles, shedding light on the systematic nature underpinning Sukuma personal naming practices.

2.1 Theoretical Approach

This study employed the cognitive semantics (CS) approach, a facet of cognitive linguistics, as its theoretical foundation. Central to cognitive semantics is the notion that the meanings of words are not independent entities but are deeply intertwined with the individuals who generate and employ them. This perspective posits that meaning is situated within the realm of human cognition, attributed to the creators and users of language rather than residing solely within the words themselves. Originating in the 1970s as a response to the truth-conditional semantics of formal linguistics (Evans & Green, 2006), CS takes a departure from the focus on explicit truth conditions to delve into the intricate interplay between linguistic meaning and conceptual structures (Croft & Cruse, 2004). CS is fundamentally concerned with the interrelation of conceptual systems, human experience, and the semantic structures encoded within language (Evans, 2007). At its core, CS examines the processes of conceptualisation and the underlying cognitive structures that facilitate this process (Evans & Green, 2006). This approach strives to unravel how language reflects and structures human knowledge, serving as a reflective mirror of our experiential understanding. The pivotal tenet of CS is that linguistic meaning emanates from the cognitive processes that shape an individual's comprehension of the world, encompassing perceptions, emotions, and somatic sensations (Evans & Green, 2006). Anchored in this framework, four key principles delineate the CS paradigm:

- (i) Embodied Conceptual Structure: The organisation of concepts within human cognition stems from bodily experiences, wherein the meaningfulness of a concept is intertwined with the somatic experiences associated with it.
- (ii) Semantic Structure as Conceptual Structure: Rather than referring to external entities, linguistic meaning is rooted in the internal cognitive concepts of language users.
- (iii) Encyclopedic Representation of Meaning: Linguistic components serve as gateways to extensive cognitive repositories, enabling the synthesis of complex experiences and knowledge through language.
- (iv) Meaning Construction as Conceptualization: Language does not merely encode meaning but prompts a dynamic process of meaning construction, drawing from an individual's background knowledge and cognitive engagement.

In the realm of cognitive linguistics, personal names' meanings are seen as embedded within cognitive models, often framed as frames (Fillmore, 1982) or idealized cognitive models (ICMs) (Lakoff, 1987). These frames or ICMs encapsulate organized bundles of knowledge, beliefs, and behavioural patterns that facilitate the interpretation of experiences (Fillmore & Baker, 2010). One such cognitive model is metonymy, an intricate feature of cognition often guided by underlying principles. Metonymy involves utilizing one entity to symbolise another entity, signifying a 'standing for' relationship (Cienki, 2007). Metonyms enable a more nuanced comprehension by directing attention to specific aspects of the denoted concept. Cultural wisdom is encapsulated within the framework of folk theories, which guide behavioural norms and perceptions within a particular society. Saliency, both cognitive and ontological, reflects the preference for familiar or prominent examples as reference points for understanding categories. Iconicity shows the alignment between linguistic form and its corresponding meaning, often exemplified in personal names reflecting observable traits of the name bearer. The bond between a source domain and a target domain

(Croft & Cruse, 2004), whereby the meaning of one entity is defined in terms of another (Lakoff & Johnson, 2003) is captured within the framework of metaphors. Construal principles emphasize the multifaceted nature of human interpretation, allowing for diverse representations of the same situation based on individual perspectives. Central to this approach is the notion that language serves as a conduit for conveying not only meaning but also the cognitive processes and cultural values that shape an individual's worldview. The CS lens facilitates a comprehensive examination of how personal names encapsulate profound sociocultural meanings and cognitive models, offering insights into the principles underlying the process of personal naming. By applying CS, this study delves into the intricate interplay between linguistic structures and human cognition, unraveling the principles that guide the assignment of personal names within the Sukuma cultural context.

3. Research Methods

This study employed a case study design within the qualitative research paradigm for data collection and analysis. The case study approach facilitates an in-depth exploration of a case, event, process, program, or individual, prioritizing depth of understanding over breadth of coverage (Creswell & Creswell, 2018). This qualitative research approach is particularly suitable for investigating culturally or linguistically specific data that shed light on the opinions, values, and social contexts of a particular society (Mack et al., 2005). The study was conducted in the Shinyanga Region, with a primary focus on the Shinyanga Rural District, specifically within the Imesela ward encompassing Nyika, Imesela, and Maskati villages. For matters of specificity, this study focused on Kemunasukuma (F21a), one of the four dialects of Sukuma (F21) (Maho, 2009:44). The selection of the study area was, thus, motivated by the prevalence of the Kemunasukuma dialect and its relative distance from the district headquarters, thereby minimizing the influence of Swahili on the linguistic context.

Data were gathered from twelve participants who were elderly Sukuma native speakers, aged 50 years and above, selected through purposive sampling across the three villages. This sample size was considered sufficient for qualitative research, aligning with the range of participants suggested by Daymon and Holloway (2010). The snowball technique was employed to locate eligible participants due to the researcher's unfamiliarity with the study area. Semi-structured face-to-face interviews were conducted with four elders from each village, complemented by three focus group discussion sessions (one from each village). The selection of participants was rooted in their native fluency in Sukuma, their birth and residence in the respective villages, and their age group, ensuring a deep familiarity with Sukuma personal naming practices. The interview method was the primary data collection tool, allowing the researcher to delve into participants' perceptions, interpretations, and constructed realities (Punch, 2009). This approach facilitated a comprehensive analysis of Sukuma personal names and naming practices. In parallel, focus group discussions were employed to attain a more nuanced understanding of social dynamics, including personal naming, adding depth and validation to the data collected from interviews (Nyumba et al., 2018).

Data analysis was undertaken using an interpretative approach. The collected data were meticulously examined and organized into categories that corresponded to the diverse factors influencing the selection and bestowal of Sukuma personal names, such as birth circumstances, geographical locations, time of birth, baby's appearance, and behavior at birth. The identification of these categories of personal names facilitated a comprehensive interpretation of the guiding principles underlying the Sukuma personal naming process.

4. Results and Discussion

This section presents and deliberates upon the findings of the present study. The investigation elucidates that the process of personal naming among the Sukuma community is not a haphazard endeavor, but rather adheres to a spectrum of distinct naming principles. These principles, although subconsciously applied, play a decisive role in guiding parents or name-givers in their selection of personal names for newborns. The elucidation of these principles can be gleaned from various influencing factors, encompassing the time of birth, birthplace, birth circumstances, parental aspirations, and cultural conventions, which collectively influence the naming process. The ensuing discourse presents an in-depth analysis of the salience, iconicity,

metonymy, folk theory, metaphoricality, and construal principles that underlie the Sukuma personal naming practices.

4.1 The Principle of Salience or Prominence

The principle of salience emerges as a pivotal guiding force in the realm of personal naming within the Sukuma cultural milieu. Salience, as explicated by Lakoff (1987), entails the propensity to utilize well-recognized or conspicuous exemplars as cognitive reference points for various categories. In essence, salience is predicated on the phenomenon of a cognitive unit attaining focal prominence in one's perceptual sphere. This implies that certain entities possess an inherent aptitude to capture attention more effectively than others, thereby qualifying as salient constructs (Schmid, 2007). It is discerned that Sukuma children are bestowed with personal names that draw reference from salient attributes associated with their moment of birth. Illustratively, this principle manifests through two distinct categories of personal names as follows:

The first category corresponds to the temporal aspect of birth. During the extensive interviews and focused group discussions (FGDs), participants unveiled that the Sukuma community systematically records the temporal facet of birth via the personal names accorded to infants. As enunciated by one respondent, *...ilikanza umujisukuma lilibugaße ng'hangala itano: dnyu, kasana, lumi, mhindi, na ßujiku* 'Time in Sukuma is categorised into five: early morning, late morning, afternoon, evening, and night. Children are named according to time of birth'. This temporal classification seamlessly translates into personal names such as *Dnyu* 'early morning', *Kasana/Misana* 'late morning', *Lumi/Malumi* 'afternoon', *Mhindi* 'evening', and *Majiku/ßujiku* 'night'. Evidently, these personal names symbolise the distinction of birth timing from other contextual elements at the juncture of a child's emergence. This phenomenon highlights the heightened propensity of birth timing to command the attention of name-givers, rendering it a salient determinant.

The second category pertains to personal names linked to birth locales. Informants expounded that certain personal names denote specific birthplaces, encapsulating a spectrum of diverse scenarios. For instance, one participant's statement resonates, *...galiho amiina gangi ayo ßaginhagwa aßaana gajilanigije naho oßyalilwa ung'waana* 'There are names given to children that express birthplaces. There are children who were born along the road, on a journey, near a lake, on a farm, or under a tree'. This culminates in the attribution of personal names like *Nyanzila/Mayila* 'of road/roads', *Lugendo* 'journey', *Lugutu* 'cowshed', *Magulilu* 'markets', *Kalwinzi* 'wellspring', *Kanumba* 'small house', *Kanyanza* 'small lake', and *Matongo* 'farms'. These personal names symbolise a diverse array of salient birthplace situations or settings, which resonate with name-givers' predilection for conspicuous and noteworthy birth-related factors. The concept of salience, intrinsically tied to attention allocation, fundamentally underscores the prominence of birth timings and locales in capturing name-giver's attention and subsequently influencing personal naming practices.

Consistent patterns are discernible in studies by Asheli (2017) within Kuria, Iraqw, and Maasai societies, as well as Mutunda (2016) within the Luvale context. For instance, Asheli (2017) expounds that these aforementioned societies bestow personal names on children that spotlight significant circumstances or attributes that captured parents' attention at the moment of birth. Among the Kuria, names such as *Matiku* 'night', *Werema* 'cultivation', and *Mbusiro* 'sowing or planting' exemplify distinctive phenomena noted during childbirth. Analogously, Iraqw personal names such as *Boay* 'gathering', *Margwe* 'communal work', and *Maasay* 'sacrificial prayer' reflect distinctive events during childbirth. Maasai personal names like *Oloirien* 'African Olive tree', *Songoyo* 'sweet-smelling tree species', and *Oreteti* 'sycamore tree' mirror culturally salient entities. This collective narrative underscores the universalisation of the salience principle, albeit modulated by sociocultural distinctiveness across communities. The intrinsic variability in what is deemed salient underscores the role of cultural perspective in personal naming practices (Mutunda, 2016).

4.2 The Metaphoricity Principle

Metaphor is another principle that emerges as influential in guiding personal naming within the Sukuma culture. Metaphors serve as a means to establish a connection between a source domain and a target domain (Croft & Cruse, 2004). Essentially, this involves describing the meaning of one entity in terms of another entity. Metaphors are deeply intertwined with human thought, as they express our embodied experiences

(Evans & Green, 2006; Feldman, 2006). Consequently, personal naming, which is an integral part of human experience and cognition, finds expression through metaphors. During focus group discussions (FGDs), participants revealed that the Sukuma people employed flora and fauna metaphorically to describe various human qualities. For instance, the term *kang'wa* 'rabbit' is used metaphorically to signify intelligence. In this context, the attribute of 'intelligence', as envisaged for a child, is conveyed using the animal 'rabbit', which is commonly associated with intelligence.

Observations indicate that metaphorical principles in Sukuma culture manifest in personal names linked to flora and fauna. Personal names such as *Kadama* 'a small calf', *Kadogosa* 'a female cow', *Maßuli* 'large goats', *Makolo* 'sheep', *Mbiti/Maßiti* 'hyenas', *Kamunda* 'puppy', *Mashimba* 'lions', *Nhiga* 'giraffe', *Kasußi* 'small leopard', *Mapuli* 'elephants', *Ngoso/Magoso* 'rat/rats', *Ng'wandu* 'baobab tree', *Nshishi* 'tamarind tree', *Kasanzu* 'thorny tree', and *Lugomela* 'thorny grasses' represent various fauna and flora. These personal names are bestowed upon children to reflect a wide spectrum of human behaviors or attributes, whether positive (desirable) or negative (undesirable). The attributes of these plants and animals are directly attributed to individuals. In essence, the characteristics of the target domain (the named child) are comprehended in terms of the characteristics of the source domain (flora and fauna).

The data presented in this section underscores that the physical structures and behaviors of flora and fauna are drawn upon in naming children with personal names related to them (Agyekum, 2006; Kileng'a, 2020). Importantly, greater significance is often placed on the behaviors of the source domains (flora and fauna) than on their physical structures. For instance, *Ng'wandu* 'baobab tree' and *Nshishi* 'tamarind tree' are known for their resilience in harsh climatic conditions, typically growing in semi-arid regions with minimal rainfall. This attribute of tolerance is symbolically ascribed to children bearing these names. This highlights that personal names associated with flora and fauna are metaphorically applied and conferred. It is worth noting that such personal names persist not only within the Sukuma speech community but also in other communities, such as the Gogo culture (Chipalo, 2019) and Zezuru culture (Viriri, 2019). In the Gogo culture, Chipalo (2019) reveals that children are bestowed with names like *Nhembo* 'elephant', *Ndogowe* 'donkey', *Lebeleje* 'maize stalk', and *Sanula* 'flower', all of which reference flora and fauna. The presence of flora- and fauna-related personal names in various African communities suggests that metaphors constitute a shared cultural phenomenon across multiple societies. The practice of metaphorically naming children appears to be a universal phenomenon, at least within the communities mentioned, possibly because the naming process inherently reflects the primarily metaphorical nature of human thought, as described by Evans and Green (2006).

4.3 The Iconicity Principle

The iconicity principle also plays a significant role in guiding the assignment of personal names among the Sukuma. Langendonck (2007) explains that iconicity is present when a sign's form reflects something in the world. In essence, iconicity establishes a connection between the form (the name/reference) and its meaning (the named/referent). This principle implies that some personal names directly resemble or are similar to their bearers. The findings show that certain personal names mirror specific features observed in newborns, often based on their physical appearances and behaviours. However, it is essential to note that this principle is applied sparingly, as iconic personal names are relatively uncommon. Newborns usually exhibit distinct physical characteristics and behaviours, such as tender skin, lightweight, small bodily size, or calm disposition at birth. These qualities often influence the personal names they are given. Personal names like *Kasheku* 'soft skin', *Kanagana* 'tender skin', *Ngandu* 'slim/skinny', *Kabuhu* 'lightweight', *Ndohele* 'small body size', and *Kalyehu/Kanogu* 'calm', are iconic, reflecting the appearances or behaviours of some newborns. Since these personal names describe the physical characteristics or behaviours of children, arbitrariness is largely avoided. As Asheli (2017) supports, these personal names are iconic because they establish a direct correspondence with the referent.

As mentioned earlier, the iconicity principle is less prominent in Sukuma and some other languages. For instance, among the three languages studied by Asheli (2017), it was only observed in Iraqw and Maasai, while it was absent in Kuria. Furthermore, the practice of naming children based on the Iconicity Principle

varies across communities. In Sukuma, the findings suggest that children's appearance and behaviour at birth influence the choice of personal names, aligning with what Mutunda (2016) observed among the Luvale. However, this approach is not observed in Iraqw and Maasai (Asheli, 2017), Datooga (Charwi, 2019), and Chasu (Msuya, 2021). For example, the Iraqw consider the child's colour, while the Maasai consider the child's physical appearance at birth (Asheli, 2017). Similar observations were made by Charwi (2019) and Msuya (2021) in Datooga and Chasu, respectively, where children are named based on their physical appearances. These findings imply that, even when two communities bestow personal names on newborns based on the Iconicity Principle, each community may have its unique interpretation of iconicity, as seen in Sukuma, Luvale, Datooga, Iraqw, Chasu, and Maasai.

4.4 The Metonymic Principle

In Sukuma culture, parents or name-givers also employ metonymic principles when assigning personal names to children. Metonymy serves a referential function, allowing one entity to represent another (Lakoff & Johnson, 2003). Agyekum (2006) reveals that conditions during both prenatal and postnatal phases, as well as social contexts within the family, can influence parents or name-givers to choose one name over another. These individuals are always aware of family or community events during pregnancy or childbirth, which often resonate in the personal names given to children. One common circumstance that influences PN selection is the occurrence of death within the family or community. During fieldwork, one interviewee explained, *...ulufu ulwene luli lo pyee aβanhu ahaweledo nulu ahawangaluke; βaliho βaana βangi aβo βaginhagwa amiina ayo guyombelaga lufu nulu nyanga* 'Death is common to all people; some children are given names that express death circumstances'. This quote suggests that death experiences influence the selection of certain personal names.

The findings in this study reveal that Sukuma children receive personal names related to various events and circumstances, such as *Mayanga* 'mourning', *Lukuβa* 'thunder', *Kalekwa/Mlekwa* 'abandoned/left behind', *Nyanjige/Mayige* 'of locusts/locusts', *Maβula/Kaβula* 'rain', *βukombe* 'dowry-paying celebration', *Shililo* 'sorrowful cry', *Mayombo* 'quarrels', and *Ng'hungwi* 'lamentation'. These personal names reflect the events occurring when the name-bearers were born and help provide insights into the prevailing circumstances at that time. Additionally, these findings align with the belief that names are not mere labels but carry certain mystical powers that can influence the destiny of their bearers. Parents bestow names on their children with great care and consciousness, either based on their own desires or as expressions of their hopes for the children's future. Sukuma children are often assigned personal names like *Laβu* 'caretaker', *Kafumu* 'healer', *Katemi* 'chief/ruler', and *Nkwaβi* 'wealth collector', which reflect their parents' aspirations. Other names relate to seasons and events in the year, such as *Lunyili* 'cold', *Magesa* 'harvesting', *Ng'hamo* 'drought', and *Malima* 'ploughing', all of which are metonymic.

These findings align with and confirm the findings of Asheli (2017) in Kuria and Maasai, indicating that metonymy is one of the guiding principles in bestowing names on children. The practice of giving children personal names that express various birth circumstances, parents' wishes, or seasonal events is also observed in communities like Vatsonga (Chauke, 2015) and Chasu (Msuya, 2021). For example, Msuya (2021) provides examples of Chasu personal names, such as *Senkondo* 'born during wartime', *Thembua* 'born during the rainy season', *Nzota* 'hunger', *Maxangu* 'suffering', and *Nyimpini* 'born during war', which reflect the prevailing circumstances at the time of birth. While metonymy appears to be widely employed in personal naming across diverse communities, it is worth noting that this principle does not apply universally, as evidenced by its absence in Iraqw, one of the three languages studied by Asheli (2017). This highlights that while a principle may be widely used, it does not necessarily make it universal.

4.5 The Construal Principles

Parents or name-givers in Sukuma also make use of construal principles when naming newborns. Construal principles are rooted in the idea that "meaning is conceptualisation," as articulated by Langacker (2007:431). These principles are based on the notion that people use various operations, termed "construal operations" (Croft & Cruse, 2004), to conceptualize the meaning of linguistic forms, including personal names. The critical aspect of the construal principle is that meaning is shaped by subjective perspectives. The choice of

names for children is determined by what name-givers consider important when a child is born, highlighting the subjectivity inherent in the naming process.

Since personal naming involves assigning a linguistic form (name) as an identity to an individual, the construal of that linguistic form depends on the perspective of the name-giver. A name-giver's perspective is continually influenced by their experiences and worldview. This means that an entity may be construed differently by different people, or the same entity may have different construals by the same person. Similarly, two entities may be construed as the same or different by the same or different individuals. For example, parents in Kemunasukuma bestow personal names such as *Maßuli* 'goats', *Makolo* 'sheep', *Kasußi* 'small leopard', *Kamunda* 'puppy', *Sußuya* 'antelope', *Mashimba* 'lions', *Mbiti/Maßiti* 'hyenas', *Mapuli* 'elephants', *Nhiga* 'giraffe', and *Ngoso/Magoso* 'rat/rats' on their children, drawing inspiration from the behaviours, appearances, or hunting instincts of specific animals. However, each animal is construed differently when attention is focused on its specific behaviours or attributes. *Nhiga* 'giraffe', for instance, is construed as visionary due to its long neck, symbolising the ability to see far and foresee danger. *Kamunda/Kawa* 'a puppy/dog', on the other hand, is construed both as a domestic animal used for security and as a symbol of sexual promiscuity. *Maßuli* 'goats' and *Makolo* 'sheep', despite both being domestic animals, are construed differently. A goat is viewed as disobedient but intelligent, while a sheep is considered obedient but lacking in intelligence. Similarly, *Mashimba* 'lions' and *Mapuli* 'elephants', although both aggressive and assertive animals, have varying degrees of aggressiveness and power attributed to them. It is noteworthy that these personal names are metaphorically assigned to children, but their construal is metonymic.

The observation that personal names in Sukuma are metaphorically assigned but metonymically construed suggests that personal names can exhibit both metonymic and metaphoric characteristics. This contradicts the findings of Asheli (2017), who reported that, while names like *Wandwi* 'of a lion' in Kuria and *Diraangw* 'lion' in Iraqw are metonymic, the name *Olowuaru* 'lion' in Maasai is metaphoric. The variation in these findings can be attributed to Langacker's (2007:431) proposition that "meaning is conceptualisation". Thus, the observed variation is a result of individuals' diverse conceptualisations of meaning. A similar trend to the one observed by Asheli (2017) is also reported in Chasu (Kileng'a, 2020) and Datooga (Charwi, 2019). Kileng'a (2020:26) mentions names of animals like *Kitojo* 'hare', *Kagoswe* 'rat', and *Nguve* 'pig', which are construed as clever, stubborn, and greedy, respectively, reflecting metaphorical instances in Chasu society. Similarly, Charwi (2019:100) reports that names like *Gidang'adid* 'lion' and *Gidamarird* 'tiger/leopard' are construed positively in Datooga, as they are bestowed on male children, symbolising their role as hunters and providers for the family.

4.6 The Folk Theory Principle

The last naming principle derived from Sukuma naming practices relates to folk theories, reflecting cultural wisdom and perspectives. Folk theories are an integral part of cultural understanding and often guide people's behaviour within a specific culture or society. According to Lakoff (1987), everyone possesses language folk theories with folk theories of reference. Folk theories not only reflect cultural understanding but also echo beliefs and perspectives.

In many African societies, including Sukuma, there is a tradition of naming children after living or deceased relatives. Interviews and focus group discussions emphasized that elders, who play a crucial role in the naming process, bestow newborns with personal names of departed relatives to ensure their memory is preserved and to honour influential figures within the family or clan. One interviewee noted,*amiina gaangi dugafunyaga ukoßaana ga mußukoo nulu gamundugu; dugaßinhaga aßaana gugalinda gadizujimila* 'Some of the names we bestow on children are family names or names of relatives; we give them to children to protect them from getting lost'. Newborns are also named after living relatives to ensure that family names are passed down through generations. This practice is grounded in the belief that names serve as a bridge between the worlds of the living and the dead. Sukuma children often receive personal names of their deceased and living relatives, including grandparents, aunts, uncles, and others, as a way of celebrating and preserving family lineage. personal names such as *Masonga* 'arrows', *Machimu* 'spears', *Magembe* 'hoes',

Lushinge 'needle', *Lugoye* 'rope', *Kaβelele* 'stalk', *Cheyo* 'broom', *Ipembe* 'animal horn', *Kalang'ha* 'small stick', *Nonga/monga* 'snail's shell', *Kayungilo* 'filter', *Kanundo* 'small hammer', *Lushu* 'knife', and *Chenge* 'wooden torch' reflect the cultural wisdom of the Sukuma but lack scientific evidence to support their selection.

Furthermore, the practice of bestowing personal names associated with parents' wishes or expectations on children can be considered an illustration of folk theories in Sukuma, a practice observed in other languages as well. Importantly, this practice is not grounded in scientific rationale. While children may receive names like *Mpanduji* 'path maker', *Nkumingi* 'wealth collector', *Kishosha* 'restorer', *Shilunguja* 'comforter', and *Nkundi* 'victorious', it does not guarantee that they will necessarily fulfill the expectations inherent in their names. This practice is rooted in the belief that a name has the power to shape the destiny of its bearer (Mutunda, 2016; Asheli, 2017). This observation in Sukuma aligns with the findings in Gogo by Chipalo (2019), where parents' or name-givers' wishes and prayers are embedded within Gogo personal names given to children. As mentioned earlier, folk theories are prevalent not only in Sukuma but also in other languages. For example, Hussen (2018) revealed that the Oromoo people also have a tradition of expressing their feelings and desires through personal names. Additionally, children among the Vatsonga (Chauke, 2015) and Luvale speakers (Mutunda, 2016) are bestowed with personal names that convey parents' expectations or wishes. This implies that parents use personal naming as a means to express their desires or hopes for themselves and their children.

This paper aimed to examine the principles underpinning personal naming practices in Sukuma culture. The findings have illuminated the existence of multiple guiding principles in personal naming among the Sukuma. These results affirm the presence of implicit principles that guide name-givers in their selection of names for newborns. Furthermore, this study underscores that personal naming is a regulated process, not a random one, guided by unspoken principles such as salience, metaphoricity, and metonymy. Among the principles discussed in this paper, those of salience, metonymy, folk theory, construal principles, and metaphoricity appear to be more pronounced and prevalent in Sukuma culture than the iconicity principle, which is somewhat less emphasized. Consequently, this emphasizes that the principles governing personal naming practices may vary across communities and languages, with certain principles being applicable in one society but not necessarily in another. For instance, as previously noted, Asheli (2017) observed that the iconicity principle is applicable among the Iraqw and Maasai but not among the Kuria. This variation can be attributed to the deeply ingrained cultural orientation, perspective, and lived experience that influence personal naming practices.

One intriguing observation concerning construal principles is that a single entity may be construed differently by distinct individuals, and even the same individual may have varying construals of the same entity. Similarly, two entities may be construed identically or differently by the same or different individuals. For example, in Sukuma culture, *Mashimba* 'lions' and *Mapuli* 'elephants' are both considered aggressive and powerful animals, yet the degree of aggressiveness and power attributed to them varies. Notably, while these names are metaphorically bestowed upon children, their construal leans toward the metonymic. It is essential to recognize that whether a name is metonymic or metaphoric often depends on the specific society to which the name belongs. For instance, Asheli (2017) reported that while names like *Wandwi* 'of a lion' in Kuria and *Diraangw* 'lion' in Iraqw are metonymic, the name *Olowuaru* 'lion' in Maasai is considered metaphoric. The observed variations may be attributed to Langacker's (2007:431) proposition that "meaning is conceptualisation". Consequently, the differences observed can be attributed to diverse conceptualisations of meaning among individuals.

5. Conclusion and Recommendation

This study delved into the intricate principles that underlie personal naming within the Sukuma community. The findings underscore the presence of a multitude of guiding principles shaping the landscape of personal naming practices among the Sukuma. A notable revelation arising from this inquiry is the substantiation of personal naming as a structured and systematic endeavor, wherein multiple principles interact harmoniously within a given linguistic context. These outcomes collectively indicate that the act of bestowing personal names is informed by a diverse array of principles, thereby imbuing the

process with profound depth and significance. The pivotal contribution of this study lies in its unveiling of the underlying principles that inform the Sukuma personal naming tradition. This elucidation not only underscores the methodical and potentially rule-bound essence of personal naming but also highlights its broader implications. The study has brought to light that several of these naming principles exhibit a cross-linguistic universality, transcending the confines of individual languages, while others remain confined to specific linguistic and cultural contexts. Nevertheless, it is imperative to acknowledge the potential limitations inherent in the generalizability of the study's findings to encompass all languages and cultures. As a result, it is recommended that further research be undertaken to validate, ascertain, and explore the existence, applicability, and universality of these identified principles in diverse linguistic and cultural settings. Such investigations would contribute to a more comprehensive and nuanced understanding of the intricate personal naming process. By extending the scope of research beyond the Sukuma community, scholars can draw a more comprehensive portrait of the underlying principles that govern personal naming practices. Additionally, comparative studies across various languages and cultures would shed light on both the shared and distinct aspects of personal naming, enriching the broader field of onomastics. Otherwise, this study has paved the way for an enriched comprehension of the intricate fabric of personal naming principles within the Sukuma community. The ongoing exploration of these principles, within a cross-cultural framework, promises to unravel a more comprehensive tapestry of human nomenclature practices, thereby enhancing insight into the fascinating realm of personal names.

References

- Adjah, O. A. (2011). What is in a name? Ghanaian personal names as information sources. *African Research & Documentation*, 11: 3–17. DOI: 10.1017/S0305862X00019889.
- Agyekum, K. (2006). The sociolinguistics of Akan personal names. *Nordic Journal of African Studies*, 15(2): 206–235. DOI: 10.53228/njas.v15i2.24
- Aljbour, A. and Al-Haq, F. A. (2019). An investigation of feminine personal names in Beni Sakhr tribe of Jordan: A Sociolinguistic Study. *International Journal of Linguistics*, 11(6): 41–67. <https://doi.org/10.5296/ijl.v11i6.14960>.
- Al-Sayyed, S. W. (2021). The causal theory of names: Between theory and practice. *Arab World English Journal*, 12(1): 152–164. DOI: <https://dx.doi.org/10.24093/awej/vol12no1.11>
- Al-Zumor, A. W. Q. G. (2009). A sociocultural and linguistic analysis of Yemeni Arabic personal names. *GEMA Online Journal of Language Studies*, 2: 15–27. <http://ejournal.ukm.my/gema/article/view/155/131>
- Ansu-Kyeremeh, K. (2000). Communicating nominatim: Some social aspects of Bono personal names. *Research Review New Series*, 16(2): 19–33.
- Asheli, N. (2017). The semantics of personal names among the Kuria, Iraqw, and Maasai. Unpublished Doctoral Thesis. Dar es Salaam: University of Dar es Salaam, Tanzania.
- Athanas, F. (2019). A Semantic Analysis of Kisukuma Personal Names. *Africa Tomorrow*, 21(1-2): 41–50.
- Buberwa, A. (2018). Sexism in Haya language personal names selection. *JULACE: Journal of University of Namibia Language Centre*, 3(2): 111–126. <http://hdl.handle.net/11070/2672>
- Charwi, M. Z. (2019). A semantic analysis of personal names in Datooga society. *Ethnologia Actualis*, 19(1): 90–105. DOI: 10.2478/eas-2019-0011.
- Chauke, M. T. (2015). Personal names and naming practices among the Vatsonga. *Anthropologist*, 19(1): 303–312.
- Chipalo, A. J. (2019). Implicative denotations of Cigogo personal names. *UTAFITI*, 14(1): 55–78.
- Cienki, A. (2007). Frames, idealised cognitive models and domains. In D. Geeraerts & H. Cuyckens (Eds.), *The Oxford Handbook of Cognitive Linguistics* (pp. 170–184). Oxford: Oxford University Press.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: qualitative, quantitative, and mixed methods approaches* (5th ed.). Los Angeles: SAGE Publications.
- Croft, W., & Cruse, D. A. (2004). *Cognitive linguistics*. Cambridge: Cambridge University Press.
- Daymon, C., & Holloway, I. (2010). *Qualitative research methods in public relations* (2nd ed.). New York, NY: Routledge.
- Didena, M. D. (2021). Dawro personal names and naming practices. *Nordic Journal of African Studies*, 30(4): 1–31. DOI: <https://doi.org/10.53228/njas.v30i4.837>.

- Evans, V. (2007). *A glossary of cognitive linguistics*. Edinburgh: Edinburgh University Press Limited.
- Evans, V., & Green, M. (2006). *Cognitive linguistics: an introduction*. Edinburgh: Edinburgh University Press.
- Ezeudo, C. O., Aboh, S. C., & Idika, K. M. (2021). Morphosyntactic analysis of Onitsha personal names. *Journal of Language Teaching and Research*, 12(3): 411–418. DOI: <http://dx.doi.org/10.17507/jltr.1203.11>.
- Feldman, J. A. (2006). *From molecule to metaphor: a neural theory of language*. Massachusetts: Massachusetts Institute of Technology.
- Fillmore, C. J. (1982). Frame semantics. *Linguistics in the Morning Calm: Selected Papers from SICOL-1981*: 110–136.
- Fillmore, C., & Baker, C. (2010). A frames approach to semantic analysis. In B. Heine & H. Narrog (Eds.), *The Oxford Handbook of Linguistic Analysis* (pp. 313–340). Oxford: Oxford University Press.
- Hussen, A. J. (2018). Descriptive analysis of Oromoo personal names and naming practices in Eastern Wollega zone of Oromia National Regional State. Unpublished Doctoral Thesis. Addis Ababa: Addis Ababa University.
- Kileng'a, A. (2020). An investigation into the sociolinguistics of Asu personal names in Same, Tanzania. *East African Journal of Education and Social Sciences*, 1(2): 20–29. DOI: <https://doi.org/10.46606/eajess2020v01i02.0018>.
- Kinyua, S. W. (2020). A Morpho-semantic study of anthroponymy: Turkana personal names. Unpublished Master's Dissertation. Nairobi: University of Nairobi.
- Lakoff, G. (1987). *Women, fire, and dangerous things: what categories reveal about the mind*. Chicago: University of Chicago Press.
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. London: The University of Chicago Press.
- Langacker, R. W. (2007). Cognitive grammar. In D. Geeraerts & H. Cuyckens (Eds.), *The Oxford Handbook of Cognitive Linguistics* (pp. 421–462). Oxford: Oxford University Press.
- Langendonck, W. (2007). Iconicity. In D. Geeraerts & H. Cuyckens (Eds.), *The Oxford Handbook of Cognitive Linguistics* (pp. 394–418). Oxford: Oxford University Press.
- Lungu, B., Hirst, S., Kapau, H. M., & Simwinga, J. (2022). Naming by reference: a socio-semantic analysis of selected Namwanga personal names. *International Journal on Studies in English Language and Literature (IJSELL)*, 10(3): 1–12. DOI: <https://doi.org/10.20431/2347-3134.1003001>.
- Lusekelo, A. (2018). An account of intercultural contact in Nyakyusa personal names. *African Study Monographs*, 39(2): 47–67. DOI: <https://doi.org/10.14989/231403>
- Lusekelo, A., & Manyasa, J. (2022). "Doing Gender" in the first-names of persons in Nyamwezi and Sukuma. *SKASE Journal of Theoretical Linguistics*, 19(2): 42–59. <http://www.skase.sk/Volumes/JTL51/03.pdf>
- Maho, J. F. (2009). NUGL Online: The online version of the new updated list, a referential classification of the Bantu languages (4 June 2009), 1-124.
- Manyasa, J. (2009). Investigating the basis of naming people in Kisukuma. Unpublished Master's Dissertation. Dar es Salaam: University of Dar es Salaam.
- Mashiri, P., Chabata, E., & Chitando, E. (2013). A sociocultural and linguistic analysis of postcolonial christian naming practices in Zimbabwe. *Journal for Studies in Humanities and Social Sciences*, 2(2): 163–173.
- Mheta, G., Mangoya, E., & Makondo, L. (2017). Shona personal names of spiritual significance. *Nomina Africana*, 31(1): 1–9. DOI: <https://doi.org/10.2989/NA.2017.31.1.1.1304>
- Minkailou, M., & Abdoulaye, I. (2020). Traditional personal names: An investigation into Songhay anthroponomastics. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 4(9): 49–58.
- Msuya, E. A. (2021). Ethno-linguistic analysis of names and naming in Northern Chasu. *Kioo cha Lugha*, 19(2): 173–191.
- Musonda, C., Ngalande, S., & Simwinga, J. (2019). Daring death among the Tumbuka: A socio-semantic analysis of death-related personal names. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 6(7): 109–120. DOI: <http://dx.doi.org/10.20431/2349-0381.0607012>
- Mutegi, D. M., Nabea, W., & Gwachi, M. (2017). Onomastics of personal names among the Meru People of Tharaka Nithi County in Kenya. *Scholars Journal of Arts, Humanities and Social Sciences*, 5(7A): 669–675. DOI: <https://doi.org/10.21276/sjahss>

- Mutunda, S. (2016). Luvale personal names and naming practices: a sociocultural analysis. *International Journal of Education, Culture and Society*, 1(3): 75–81.
- Nyumba, T. O., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution*, 9: 20–32. DOI: <https://doi.org/10.1111/2041-210X.12860>
- Punch, K. F. (2009). *Introduction to research methods in education*. London: Sage.
- Saarelma-Maunumaa, M. (2003). Edhina ekogidho - Names as links: The encounter between African and European anthroponymic systems among the Ambo People in Namibia. DOI: <http://dx.doi.org/10.21435/sflin.11>
- Schimid, H. (2007). The notion of entrenchment and salience in cognitive linguistics. In D. Geeraerts & H. Cuyckens (eds). *The Oxford handbook of cognitive linguistics* (pp118-138). Oxford: Oxford University Press.
- Shigini, P. G. (2020). The semantic nature of Sukuma personal names. *East African Journal of Social and Applied Sciences*, 2(1): 14–21.
- Shigini, P. G., & Mapunda, G. (2023). Personal naming among the βanasukuma: a linguistic analysis. *Journal of Linguistics and Language in Education*, 17(1): 74–96. DOI: 10.56279/jlle.v17i1.5
- Tahat, A. (2020). Morphological patterns of personal naming practice: a case study of non-concatenative Arabic language. *International Journal of Academic Research in Business and Social Sciences*, 10(6): 572–585. DOI: <http://dx.doi.org/10.6007/IJARBS/v10-i6/7333>
- Viriri, M. (2019). Naming, identity and gender constructions: a phenomenological study of Zezuru personal names. Unpublished Doctoral Thesis. South Africa: University of KwaZulu-Natal.



PUBLIC PRIVATE PARTNERSHIP MODEL INTERVENTIONS FOR ENHANCING PRIMARY EDUCATION QUALITY: A CASE STUDY OF KILIMANJARO REGION, TANZANIA

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ABSTRACT

Tanzania has employed the Public Private Partnership (PPP) model to deliver education since the 1970s. Despite its long-standing use as a means to improve the quality of primary education in Tanzania, its tangible impact on public schools remained largely unexplored. Therefore, it was imperative to scrutinize the educational advantages accrued and the strengths of the PPP model in enhancing primary education quality in the Kilimanjaro Region, Tanzania. The study's specific objectives were to identify the types of private educational partners, the nature of support they provided, and the educational benefits derived from such support. A cross-sectional research design was employed, with data collection encompassing questionnaires, focus group discussions, key informant interviews, and observations using a comprehensive checklist. The study randomly selected 32 teachers and 128 pupils from 16 primary schools that received support and were jointly operated by public and private partners. The findings revealed a prevalence of international private partners, who offered substantial support in terms of educational infrastructure and materials. Consequently, this support translated into numerous educational benefits, including increased pupil attendance and enhanced academic performance, resulting in an overall improvement in the quality of education in the Kilimanjaro region. In general, the PPP model demonstrated several strengths, notably in creating a more conducive learning environment and mitigating educational challenges. In conclusion, the PPP model emerged as pivotal for development, particularly in the context of bolstering the provision of quality education. It is recommended that local and central governments, in collaboration with the Ministry of Education, Science, and Technology, formulate strategies to fortify their partnerships with private entities, thereby enhancing the teaching and learning environment within schools.

Keywords: Public-private partnership, Education quality, Primary school, Kilimanjaro, Tanzania

Paper type: Research paper

Type of Review: Peer Review

1. Introduction

Since the mid-19th century, there has been a notable expansion of the private sector's involvement in the provision of public services, including healthcare and education, in many countries worldwide (Buffie et al., 2016). Factors such as budgetary constraints, technical expertise, and the efficiency of the private sector have prompted governments to increasingly adopt the Public Private Partnership (PPP) model to deliver social services that were previously the sole domain of the public sector. This paradigm shift has led numerous countries to embrace collaboration with private individuals and organizations in an effort to augment government initiatives for national development. The driving forces behind these partnerships, or PPPs, are multifaceted, encompassing deliberate policy formulation, the public sector's inability to



consistently deliver quality services universally, and the organic rise in demand for improved access to high-quality social services (Prachitha et al., 2015).

A study by Aleksandar and Biljana (2021) unveiled that developed nations, including Italy and Hong Kong, have extensively leveraged the PPP model, particularly in sectors such as healthcare, electricity, and housing infrastructure, contributing significantly to the provision of high-quality services. In the realm of education, PPP studies conducted in regions like Northern Brazil, India, Pakistan, and Ghana have revealed substantial educational benefits resulting from such collaborations. Research by Paola et al. (2020) in Colombia demonstrated that PPPs played a pivotal role in enhancing the quality of education by creating conducive school environments through the construction of school infrastructure and the provision of teaching and learning materials. Investments in such infrastructures and educational services, including access to water and electricity in primary schools, have translated into improved academic performance among pupils.

For the PPP model to make substantial contributions to quality education in Tanzania, the presence of private partners supporting the process is crucial. International development partners, exemplified by organizations like Child Reach International, offer distinct advantages owing to their substantial capital, expertise, and experience in supporting the education sector. However, their support may not always be sustainable over a short timeframe. In contrast, local development partners, including community members, make smaller contributions to quality education and at times exhibit reluctance to donate, but they tend to support sustainable education initiatives over extended periods. Nevertheless, it is essential to note that the nature of education partners, whether local or international, does not inherently guarantee significant educational benefits; the critical factor lies in the nature of the support provided to enhance the quality of education (Mpamila, 2007).

In line with global educational recommendations, such as those from the World Education Forum in Dakar (1992) and the World Forum for the Review of Achievements towards Millennium Development Goals in Sodertorn, Sweden (2002), Sub-Saharan African governments were advised to embrace the PPP model. This counsel was rooted in the belief that PPPs would support the realisation of Universal Primary Education (UPE) and expand access to high-quality education, thereby accelerating the attainment of other Millennium Development Goals by the end of 2015.

Consequently, the Tanzanian Government adopted the PPP model for service delivery, particularly in education, starting in the late 1980s. During the mid-1990s, there was a notable surge in private sector participation in the provision of education services across all levels (TEN, 2004). Both local and international partners collaborated and provided diverse forms of support to enhance the quality of primary education, which included the construction and renovation of school infrastructure and the provision of teaching and learning materials (URT, 2006). Mpamila (2007) observed that many private educational partners made significant contributions towards the provision and improvement of quality education in Tanzania. However, the empirical extent of their contributions remained largely uncharted, possibly due to undocumented interventions and educational support provided to PPP schools. There is limited empirical evidence available to conclusively demonstrate that the PPP model has substantially contributed to improved primary education quality in the Kilimanjaro region of Tanzania. Hence, this study was conducted to bridge this knowledge gap and provide comprehensive insights into the widespread application of the PPP Model in Tanzania. The specific objectives of this study were to identify the types of private educational partners, document the interventions undertaken, assess the support provided, and determine the educational benefits accrued by PPP schools as a result of the support extended by private partners.

2. Literature Review

2.1 Quality Education

The Dakar World Education Forum in 2000 firmly established the conventional definition of quality education, encompassing not only academic excellence in reading, numeracy, and essential life skills but

also the inculcation of sound values and behaviors. These components are intricately interwoven with and influenced by a conducive learning environment, effective policies, a qualified teaching staff, a learner-centered curriculum, and the availability of appropriate educational materials (UNESCO, 2005). Pigozzi (2008) emphasises that strategies to enhance access to quality education should encompass the rehabilitation and expansion of school infrastructure, including classrooms, laboratories, dining facilities, staff housing, administrative offices, sanitation facilities, kitchens, and water supply systems. Additionally, the provision of teaching and learning materials in appropriate quantities is deemed essential. The provision of nutrition programmes, access to water services, electricity, and playgrounds within the school compound also plays a pivotal role in attaining education quality (URT, 2006).

In the context of this study, quality education is defined as the presence of adequate school infrastructure, instructional materials, and access to food and water services in the vicinity of the school, all of which support the teaching and learning processes. Ansari (2020) argues that learning can transpire anywhere, but optimal learning outcomes are most likely to occur within a high-quality learning environment equipped with the requisite school infrastructure and sufficient instructional materials.

2.2 Public Private Partnership (PPP) Model

The World Bank, in conjunction with the Asian Development Bank (ADB) and the Inter-American Development Bank (2014), collectively defines the PPP model as a long-term contractual arrangement between a private entity and a government body. This arrangement pertains to the provision of a public asset or service, with the private entity assuming substantial risk and management responsibility, and compensation tied to performance. The United Kingdom's Development Commission, as articulated by Pfisterer (2017), characterises the PPP model as a risk-sharing collaboration founded on a mutual agreement between public and private sectors to achieve a specific public policy outcome, with a focus on quality education within the context of this study.

In this study, the term "private development partners" encompasses both profit and non-profit organisations, philanthropic groups, and individuals engaged in collaborative efforts to support primary schools in improving the quality of education. A "PPP school" in this context refers to a public primary school that receives educational support from private development partners through established agreements aimed at enhancing the quality of education. The existence of a Memorandum of Understanding (MoU) serving as a partnership arrangement between the school administration and the respective private development partner serves as a key indicator for identifying a PPP school.

2.3 Empirical Literature

Kumari (2016) asserts that the primary responsibility for providing and financing social services, including quality education, largely resides with central governments, but they often receive support from private development partners. Moreover, Patrons et al. (2009) note that there has been a scarcity of research in the field of PPP models and their impact on public service provision in African countries. Existing PPP studies in developing countries have predominantly focused on productive sectors such as transportation, agriculture, and environmental sub-sectors. There has been limited exploration of education partnerships, their roles, and how the PPP model can be a potent tool for improving education quality. An illustrative example of the impact of the PPP model can be found in Bangladesh, where a privately operated primary school programme, initiated in 2001 with just 22 pupils in a single-room school, expanded to serve over 1,500 rural children in more than 200 primary schools by 2007. This effort greatly increased access to quality education and reduced illiteracy rates among rural youth in Bangladesh (Paola et al., 2020). In India, government engagement with private partners in the education sector has been extensive. A study by Ansari (2020) revealed that the PPP model has succeeded in enhancing the school learning environment through the construction of classrooms, modern kitchens, toilets, and offices in select rural primary schools. Similarly, literature from Ghana underscores how the construction of new classrooms through PPP initiatives in primary schools has enabled many school-aged children to attend and complete basic education with the requisite knowledge and skills (UNESCO, 2005).

The importance of adequate school infrastructure and instructional materials is underscored in sections 3.2.11 to 3.2.14 of the Tanzania Education Policy of 2014. A conducive school environment is identified as a catalyst for providing quality education and advancing Tanzania's progress towards becoming a middle-income country. Furthermore, sections 3.5.5, 3.6, and 3.6.1 of the policy emphasise the collaboration between public entities and private development partners (the PPP model) in the provision of quality education (URT, 2014a). Existing literature highlights a prevalence of PPP studies centred on "hard" partnerships involving productive sectors with commercial or business-oriented aspects such as construction, transportation, mining, and agriculture. There is a paucity of research on "soft" partnerships that focus on social service sectors without commercial undertones, particularly within the education sector. While some studies have explored the PPP model's role in improving education quality in developed countries, limited research has examined its actual influence on pupils' academic performance in the context of Moshi District Council and Moshi Municipality, Tanzania. This study aims to fill these gaps in the literature by analysing the PPP model in terms of private partner interventions, types of educational support provided, and the associated educational benefits achieved.

2.4 Theoretical Review

This study drew upon stakeholder theory, which finds its origins in the work of Stephen Ross and Barry Mitnick (1967, as cited by Lee et al., 2018). Stakeholder theory operates on the foundational premise that collaboration and synergistic relationships between diverse partners, such as government entities and private partners, are fundamentally oriented towards enhancing the delivery of desired policy outcomes to benefit the broader populace. These relationships manifest when partners engage in collaborative endeavours, sharing their expertise, resources, and experiences within a defined collaboration framework (Hong and Kim, 2018).

The study posits that involving various stakeholders in the provision of public services is more likely to address a wider array of social challenges than delegating this responsibility to a solitary entity. Central to the theoretical framework underpinning this study are the resources to be contributed by private partners and the delineation of responsibilities between each partner. Patrons (2010) argued that the roles of each partner should be clearly defined and mutually understood when the central government elects to collaborate with the private sector to achieve specific policy outcomes. Heather and Kathleen (2007) contend that the absence of a well-designed PPP framework may result in one party benefitting disproportionately, potentially leading to exploitation of one of the collaborating partners (p. 68). This study investigates key variables, including the resources provided by private partners, the interventions enacted by private partners, and the types of educational support they furnish to enhance the quality of primary education.

2.5 Hypothesis of the study

The hypothesis of this study posits that there is no significant association between the types of educational support provided by private partners and the academic performance of schools.

3. Methodology

This study was conducted at Moshi District Council and Moshi Municipality of Tanzania. These districts were purposefully selected due to their extensive history of collaboration with private educational partners since the 1960s (URT, 2014b). The study employed a cross-sectional research design, utilising a mixed-methods approach that encompassed both quantitative and qualitative data collection techniques. This design was chosen to provide a comprehensive understanding of phenomena that were not well-explored (Gorard, 2013). Sixteen primary schools, out of a total of fifty-seven, which had received collaborative support from both public and private educational partners (PPP) over the preceding decade (2005-2015), were purposefully selected for this study. These schools were chosen based on the criteria of active collaboration with private partners in the pursuit of quality education. A PPP school in this context was defined as a public primary school that received educational support from private development partners under established agreements aimed at enhancing the quality of education. The existence of a Memorandum of Understanding (MoU) serving as a partnership arrangement between the school administration and the respective private development partner was used as a key indicator for identifying

a PPP school.

From each of the selected schools, two teachers were randomly chosen, resulting in a total of 32 teachers across all sixteen schools. Additionally, eight pupils were randomly selected from two classes: standard IV and standard VII, yielding a total of 128 pupils in the study. Focus group discussions (FGDs) involved seven parents and three school board members from each of the schools. Key informants, including Ward Education Coordinators, District and Municipal Education Officers, and Managing Directors or spokespersons from surveyed private education partners, were also interviewed. Other key informants included officials from the Prime Minister's Office (PPP Unit), the Tanzania Investment Centre (Northern zone), and the Tanzania Private Sector Foundation. To assess school academic performance, scores from standard seven examination results were recorded, and the mean performance over the last four years was computed. Pupils scoring below 39.0% were classified as poor academic performers, while those scoring above 40% were deemed good academic performers.

Data collection employed a combination of quantitative and qualitative methods. Data pertaining to interventions implemented, types of educational partners, and the nature of support provided were gathered through questionnaires and observational methods using a checklist of items. Information related to educational benefits and the strengths of the PPP model were collected through focus group discussions (FGDs) with the aid of an FGD guide and key informant interviews using an interview guide. Secondary data related to the study's topics were obtained through documentary review, involving yearly reports of standard seven national examinations from 2012 to 2015. Additionally, books, journals, and other published and unpublished materials were reviewed, as evident in the reference list.

The collected data were analysed using Statistical Package for Social Sciences (SPSS) software version 21. Descriptive statistics were computed to determine frequencies, percentages, minimum and maximum values of individual variables, and averages of support provided. Furthermore, inferential analysis was conducted using cross-tabulation, with chi-square tests to establish associations between types of educational support provided and the academic performance of schools. Objective two was addressed through content analysis, wherein qualitative information, including views and arguments from FGDs and key informant interviews, was summarised. Themes were compared and discussed in relation to empirical data. Data interpretation was performed, and the results were presented in tabular format, followed by discussion of the findings with respect to specific objectives and existing empirical literature.

4. Findings and Discussion

According to Gorard (2013) analysing and interpreting the background characteristics of the surveyed respondents is integral, as these characteristics can have a positive correlation with the study's variables. Therefore, number of pupils and teachers in each type of school were considered in the context of the study topic.

4.1 Pupil-Teacher Ratio (PTR) in the Studied PPP Schools

Table 1 presents the findings regarding the pupil-teacher ratio (PTR) in the studied primary schools. Primary schools in Moshi Municipality accommodated a total of 6,380 pupils, while their counterparts in Moshi District Council had 4,003 pupils. Additionally, schools in Moshi Municipality had a higher number of teachers (168) compared to 108 teachers in Moshi District Council. However, despite the differences in the number of pupils and teachers, the pupil-teacher ratios (PTR) in the studied schools were remarkably similar. In Moshi Municipality, the PTR was 1:37.9, whereas in Moshi District Council, it stood at 1:37.0. It's worth noting that there was variation in PTR among the schools, with some having higher PTRs and others lower PTRs.

During focus group discussions (FGDs), a board member at Shirimatunda Primary School shed light on this situation, stating, "...teachers sometimes seek transfers to urban schools with better environments and fewer pupils, which can lead to discrepancies in PTR" (Board member at Shirimatunda Primary School, Field data). This implies that the allocation of teachers in primary schools was not always optimal, resulting

in differences in PTR across the study areas. High PTRs can also be attributed to high enrolment rates in schools with conducive learning environments. This observation is consistent with a study by Barrera et al. (2020), which noted that parents often advocate for their children to attend schools with conducive environments that facilitate effective teaching and learning processes.

Table 1: Pupil's teacher ratio (PTR) to schools understudy

Primary Schools in Moshi Municipality				Primary Schools in Moshi District Council			
Name of school	Pupils	Teachers	PTR	Name of school	Pupils	Teachers	PTR
Mandela	1062	23	1:46	Katanini	763	20	1:38
Azimio	1017	24	1:42	Kiyungi Mpya	543	14	1:39
Kaloleni	1069	20	1:56	Ronga	261	4	1:65
Jitegemee	996	20	1:50	Kiyungi	413	18	1:23
Muungano	382	16	1:24	James Ole Mallya	422	11	1:38
J.K.Nyerere	426	19	1:23	Dr.Omary Juma	195	12	1:16
Kilimanjaro	709	19	1:37	Benjamin Mkapa	1025	16	1:64
Shirimatunda	718	27	1:27	Arusha chini	381	13	1:29
Total	6,380	168	1:38		4,003	108	1:37

4.2 Types and Nature of Private Education Partners

The study identified three primary categories of private education partners in the research area: registered organisations, groups of individuals, and individual persons collaborating with local governments to enhance the quality of primary education. The research findings indicate that there was a higher prevalence of international organisations offering support to the education sector in the study area compared to local organisations.

Table 2: Private education partners supporting schools

Private educational partners	Types and nature of private educational partners	Teachers' Responses		Pupils' Responses	
		n	Percent	N	Percent
Child reach International	Registered International organisation	18	21.4	64	24.8
FT Kilimanjaro	Registered International organisation	12	14.3	33	12.8
Compassion	Registered International organisation	8	9.5	25	9.7
TPC Limited	Registered International organisation	8	9.5	18	7.0
Team visitor (friends from Australia)	International Group	0	0.0	24	9.3
Camara Education of Tanzania	Registered International organisation	6	7.1	24	9.3
Aghakani University (MaishaniUfunguo)	Registered International institution	6	7.1	0	0.0
ViAFRICA	Registered International organisation	2	2.4	16	6.2
HakiElimu Tanzania	Registered local organisation	6	7.1	0	0.0
KIWAKUKI	Registered local organisation	6	7.1	8	3.1
Rotary club of Moshi	Registered International organisation	4	4.8	8	3.1
International School of Moshi	Registered International institution	4	4.8	0	0.0
Umoja group from Belgium	International Group	0	0.0	8	3.1
TBL	Registered local organisation	0	0.0	8	3.1
Munich International school from German	Registered institution	0	0.0	8	3.1
Bonite Company	Registered International organisation	2	2.4	8	3.1
MKUKI	Registered organisation	2	2.4	0	0.0
Jean (individual person from German)	International Individual	0	0.0	6	2.3
Total		84	100.0	258	100.0

*32 respondents (teachers) gave 84 responses. Therefore, the percentage was over 84

*120 respondents (pupils) gave 258 responses. Therefore, the percentage was over 258

Table 2 reveals that a total of eighteen private partners collaborated with both Moshi District Council and Moshi Municipality to enhance and improve the quality of primary education. Among these partners, 4 (22.3%) were local, while 14 (77.7%) were international. Furthermore, the table indicates that some individuals, such as Jean Shoperzee from Germany, and groups of individuals or teams of visitors, like friends from Australia, actively supported the government's efforts to provide quality education in the Kilimanjaro Region.

Based on the responses from teachers, it was found that Childreach International (21.4%) and FT Kilimanjaro (14.3%) were the leading international organisations providing substantial support to numerous primary schools in Kilimanjaro Region. Childreach International, a UK-based organisation, operates in five countries worldwide and envisions a world where all children have the opportunity to fulfil their potential through access to education, protection, and healthcare. Among local private partners, HakiElimu (7.1%) and KIWAKUKI (7.1%) played significant roles in supporting multiple primary schools in the study area. During focus group discussions at Katanini Primary School, many parents commented, "Being financially strong does not guarantee an individual or organisation's effectiveness as development partners; instead, it's about having a giving heart and a genuine concern for community development" (Parents, Katanini Primary School, Field data). This finding underscores the idea that participation in development activities is not limited to large, registered groups or organisations, but it is equally important for individuals, both local and international, to collaborate with governments to enhance the quality of primary education in their respective regions.

4.3 Kinds of Support Provided to PPP Schools by Private Educational Partners

Private educational partners, as discussed in section 3.2, offered various forms of education-related support with the aim of enhancing the quality of primary education in Moshi District Council and Moshi Municipality. Table 3 presents the various types of educational support most frequently provided to public primary schools in Kilimanjaro Region. A quantitative analysis, using Pearson chi-square, was conducted to ascertain whether the implemented interventions were significantly associated with school academic performance. Table 3 displays the Pearson Chi-square values used to investigate the association between the types of educational support provided and school academic performance over the preceding four years. Most of the support was centred on improving school infrastructure, teaching and learning materials, and other education-related services, as described in the following paragraphs.

Table 3: Intervention implemented, kinds of educational supports provided by private educational partners and its association with school academic performance for the last five years (2011 – 2015)

Interventions and kinds of educational supports provided to schools/pupils	Teachers' Responses		Categories of educational Academic performance		Association between kinds of support and academic performance from 2011 – 2015	
	n	%	Good Academic performance (≥ 40% Average score)	Poor Academic performance (≤ 39% Average score)	Chi-square value	p-value
Installation of water system	42	12.5	28	4	32.00**	0.006
Provision of school uniforms, shoes & bag	32	9.5	28	4	32.00**	0.006
Provision of food and cooking materials to pupils	28	8.3	28	4	27.34*	0.026
Renovation and construction of modern toilets for pupils	23	6.8	28	4	32.00**	0.006
Construction of modern kitchen/cooking stoves	19	5.6	28	4	32.00**	0.006
Provision of subject text books	17	5.0	28	4	29.9*	0.012
Provision of exercise books, pens and pencils	14	4.1	28	4	29.9*	0.012
School, Water, Sanitation and Hygiene project (SWAS)	14	4.1	28	4	29.92*	0.012
Renovation and construction of classrooms	13	3.8	28	4	29.92*	0.012
Renovation and construction of teachers' offices	12	3.5	28	4	27.73*	0.023
Free transport to teachers, go and from school	12	3.5	28	4	32.00**	0.006
Payment of school fees to pupils	10	2.9	28	4	32.00**	0.006
Construction of play grounds and provision of playing tools	10	2.9	28	4	32.00**	0.006
Free electricity and water around school	9	2.6	28	4	29.52*	0.014
Construction of school fence and library	8	2.3	28	4	32.00**	0.006
Financing seminars to members of the school board and teachers teaching lower classes	2	0.5	28	4	64.00***	0.000
Renovation and construction roofed corridors	2	0.5	28	4	15.48 ^{ns}	0.417
Total	334	100.0				

32 respondents gave 334 responses. Therefore, the percentages are over 334, *** significant at the 0.001, ** at 0.01, * at 0.05, ⁿ No significant association

The top-ranked type of support provided was the installation of water points, water harvesting systems, and storage tanks within school compounds (12.5%). The Pearson Chi-square test revealed a significant association between the availability of water within school compounds and the schools' good academic performance (Chi-square = 32.00, $p < 0.01$) over the previous four years. The second most common type of educational support was the provision of school uniforms, shoes, and bags (9.5%) to pupils at PPP schools. The Pearson's Chi-Square test also demonstrated a significant association (Chi-square = 16.34, $p \leq 0.01$) between pupils receiving school uniforms and the schools' good academic performance. Several other forms of educational support were less frequently provided in PPP schools. These included desks and tables for pupils (1.7%), mosquito nets for pupils (1.1%), financing for teacher job training (0.5%), construction of school fences (2.3%), and the construction of playgrounds and provision of playing tools (2.9%).

Many of the identified materials in Table 3 align with the educational materials described by Kumari (2016) as key variables that influence the provision of quality education. This finding suggests that most of the materials provided by private educational partners significantly contributed to the improvement of the quality of primary education. However, despite the various educational interventions implemented, Table 3 highlights that the majority of the educational support provided to public schools in Kilimanjaro Region was geared towards improving school infrastructure rather than enhancing the availability of materials that facilitate the teaching and learning processes for both pupils and teachers. Furthermore, Table 3 indicates that 27 out of the 28 types of educational support provided were significantly associated with good academic performance in the intervention schools. The exception was the renovation and construction of roofed corridors for classrooms and teachers' offices, which did not show a significant association (Chi-square = 15.48, $p \geq 0.05$) with school academic performance. However, it's worth noting that during FGDs at J.K. Nyerere Primary School, parents emphasised the positive impact of roofed corridors on the school environment, stating that they made it more attractive and conducive for teaching and learning, especially during inclement weather. These corridors were primarily used by teachers and pupils during breaks and extra time, with teachers often observed using them to grade pupils' exercises or for other activities.

4.4 Educational Benefits Gained by PPP Schools from Types of Support Provided

This study has played a crucial role in reducing previous ambiguity regarding the significance of the benefits gained from different types of support provided by private educational partners in Tanzania. Table 4 presents information on the major educational benefits derived from private educational partners based on the support they offered, as described in the previous subtopics. The table outlines the educational benefits obtained from the support provided by private partners through the PPP model. These benefits encompassed an increased rate of pupils' attendance at school, a rise in pupil enrolment, enhanced academic performance among pupils, and improvements in the pupil-to-desk and teacher-to-house ratios.

Table 4: Educational Benefits gained by PPP Schools from Private Partners

Benefits gained	Before PPP			After PPP					Average change for the two districts%
	Ye ar	M M	MD C	Ye ar	M M	Change%	MD C	Change%	
Increased in the rate of pupil's attendance to school	2010	87	73	2014	93	6	87	14	10
Increased academic performance among pupils	2010	84	78	2014	91	7	83	5	6
Increased access to primary education among school age children	2010	71	69	2014	96	25	92	23	24
Increased pupils text book ratio	2010	1:7	1:9	2014	1:4	1:3	1:7	1:2	1:2.5
Improved pupil's classroom ratio	2010	61	42	2014	49	12	35	7	9.5
Improved pupils desk ratio	2010	3.2	3.7	2014	3.0	0.2	3.4	0.3	0.25
Improved teachers house ratio	2010	1:6	1:8	2014	1.5	0.1	1:72	0.08	0.09
Improved pupil's latrine ratio	2010	38.5	29	2014	36.5	2.0	24.5	4.5	3.25
Reduced walking distance for fetching water go & return to school in kilometres	2010	0.9	1.8	2014	0.05	0.85	0.8	1.0	0.925
Improved teachers' attendance to school	2010	89	91	2014	94	5	93	2	3.5

MM =Moshi Municipality, MDC = Moshi District Council

Increase in the rate of pupils' attendance at school was the most significant educational benefit gained from the support provided by private partners, as reported by teachers. Prior to the introduction of the PPP model in 2010, the pupil attendance rate was 87% in Moshi Municipality and 73% in Moshi District Council. After the implementation of PPP (2014), the pupil attendance rate increased to 93% in Moshi Municipality and 87% in Moshi District Council. This increase in attendance rates represents a 12% improvement in the studied areas. The head teacher at Benjamin Mkapa Primary School noted that the installation of water points around the school compound and the modern kitchen had reduced pupils' chores at school, leading to a significant increase in attendance. This finding suggests that the implemented interventions had a substantial impact on the quality of education, as frequent pupil attendance at school creates a conducive learning environment and has a direct influence on pupils' academic performance, as observed in the study by Felipe Barrera-Osorio et al. (2022).

Improvement in academic performance among pupils and schools was another highly ranked educational benefit reported by teachers in schools collaborating with private partners. The study's findings indicated that before the implementation of PPP in 2010, most primary schools in Moshi Municipality had a standard seven national examination pass rate of 84%, while in Moshi District Council, it was 78%. After PPP (2014), the academic performance improved to 91% in Moshi Municipality and 83% in Moshi District Council.

Additionally, 84.5% of pupils who completed standard seven in these schools over the previous four years scored above 100 out of 250 marks in the final national examinations, enabling them to proceed to secondary education. The provision of subject textbooks, exercise books, pens, pencils, and school uniforms was reported as a direct and indirect influence on academic performance among pupils by the head teacher at Jitegemee Primary School. This suggests that collaboration between public and private partners helped reduce the financial burden on school management and parents for providing learning materials, ultimately leading to improved academic performance. The provision of school uniforms also encouraged pupils to attend school regularly, as pupils who lacked proper uniforms often felt shy attending school, leading to lower attendance rates and poorer academic performance (Barrera-Osorio et al., 2020). Qualitative data collected during the survey was used to further enrich the analysis, and Table 5 presents educational benefits gained from educational support provided by private partners based on focus group discussions (FGDs) and key informant interviews.

Table 5: Educational benefits gained (Analysed from FGDs and Key informants' interview)

Safety among pupils, teachers and other school assets
Civilised pupils and teachers (good habits)
Pupils have got more time for learning
Increased working morale among teachers
Experience sharing among teachers and pupils
It has reduced communicable diseases among pupils (SWAS project)
Enabled teachers and pupils to get many sources of reference materials through internet
Reduced wastage of time through regular searching of firewood
It has made school environment conducive for T/L process to pupils and teachers
Experience sharing between pupils and teachers
It has reduced educational burden to our government

Safety among pupils, teachers, and other school assets emerged as a crucial educational benefit described primarily by school board committee members, especially parents. A safe school environment is essential for ensuring active participation in the teaching and learning process (Badu et al., 2018). Respondents pointed out that prior to private partnership interventions, many schools in the area faced safety challenges, including old and unsafe buildings, noisy surroundings, and inadequate facilities. However, the introduction of private partners and their initiatives to improve school infrastructure, such as constructing school fences, significantly enhanced the safety and overall conduciveness of the learning environment. This finding underscores how private development partners play a pivotal role in addressing challenges that hinder the provision of quality education, particularly in creating a secure and favourable atmosphere for learning.

Private partners have played significant roles in enhancing the learning environment in public schools by implementing projects that provide students with more time for studying while at school. The availability of water services, for instance, reduced the time students spent fetching water from distant sources, allowing more time for teaching and learning. As a result, the provision of water services within school compounds led to improved academic performance among students. Additionally, the construction and use of modern (flush) toilets in schools modernized students' daily lives and raised their awareness of hygiene practices. This not only improved the overall health and hygiene of students but also contributed to the quality of education. Such interventions have a positive impact on students' habits, which they can transfer to their homes, friends, and relatives, promoting good hygiene practices in the community (Jacob, 2018).

The reduction of the education burden on the central government emerged as another significant educational benefit of the PPP model. The adoption of public-private partnerships in education shared the responsibility of providing education services between the government and private sectors. Private partners directed significant resources toward providing public assets and services, thereby reducing the financial burden on the central government. This reduction in government expenditure allowed for more focus on other areas of development and improved targeted services (Borodiyenko et al., 2021). The study

highlighted the substantial support provided by private partners to primary schools in the Kilimanjaro region. This support has made the learning process in the region more conducive and efficient, with private education partners significantly contributing to improving the quality of education, creating safer and more hygienic learning environments, and alleviating the financial burden on the central government.

5. Conclusion and Recommendations

The study revealed that international private educational partners played a more significant role in supporting the provision of quality education compared to their local counterparts in the Kilimanjaro region. Moreover, the majority of the educational support provided to public schools in the region was primarily directed toward improving school infrastructure rather than enhancing teaching and learning materials for both students and teachers. Based on these findings, several conclusions can be drawn including to ensure a more balanced and effective intervention from private educational partners, there is a need to establish clear arrangements that enable these partners to contribute equitably to key areas essential for facilitating the teaching and learning process within schools. Hence, the following is recommended: Building on these conclusions, the following recommendations are put forward:

- (i) The central government, particularly the Ministry of Education, Science, and Technology, should encourage private educational partners to align their support with the specific plans and needs of schools for improving the teaching and learning process. This alignment will help ensure that interventions address the most critical areas for enhancing education quality.
- (ii) Local citizens and local private partners should be motivated and incentivized to actively participate in supporting the processes of quality education provision within their communities. Local partners often have a strong sense of ownership and can play a crucial role in improving education as primary or secondary beneficiaries of these interventions.
- (iii) The various educational benefits gained from private partners' support have significantly contributed to improving the quality of education in public schools. To sustain these benefits, government bodies and the wider community should establish strategies to ensure the continued maintenance of the accrued improvements.
- (iv) Private partners, in collaboration with governments, should prioritize interventions that have a significant association with improving pupils' academic performance. This focus on academic outcomes is essential for achieving the ultimate goal of providing quality education.

Therefore, by implementing these recommendations, it is possible to enhance the impact of private educational partnerships in the Kilimanjaro region, leading to sustained improvements in the quality of education in public schools.

6. Implications of the Study

The findings of this study carry important implications for educational practices, the body of knowledge, and existing theories, particularly in the context of Public Private Partnerships (PPP) in the education sector. The findings have demonstrated that the PPP model can effectively extend beyond traditional areas of hard partnerships with commercial aspects to encompass soft partnerships that involve social services, such as education. This expansion of scope suggests that the PPP model can be a versatile tool for addressing educational challenges and improving the quality of primary education. Thus, educational practitioners and administrators can draw inspiration from these findings to explore and implement PPP initiatives in the education sector to address various educational challenges and enhance the quality of primary education.

Also, the study has contributed to the scientific documentation of the significant interventions that the PPP model can bring to the education sector. By systematically examining the education benefits accrued from PPP support, the study sheds light on the concrete improvements in school teaching and learning environments, leading to better academic performance among pupils.

In terms of the theoretical contribution; the study's theoretical framework, which combines the PPP model with stakeholder theory, has been validated and found applicable in the context of improving the quality

of education. The successful application of this theoretical framework suggests that joint efforts and collaboration between private partners and public entities can effectively address educational challenges and contribute to enhancing the learning processes within schools.

Therefore, this study extends the practical application of the PPP model in the education sector, provides valuable insights into the significance of PPP interventions, and validates a theoretical framework for addressing educational challenges collaboratively. These implications have the potential to shape future educational practices, expand the body of knowledge in the field, and refine existing theories related to educational partnerships and stakeholder engagement.

References

- Aleksandar Đorđević & Biljana Rakić (2021). Macroeconomic Aspects of Public-Private Partnership. *Academic Journal of Social Development*, 45(1): 367-382. DOI: 10.22190/TEME200213020D
- Ansari, Ali H. (2020). Cream skimming? Evaluating the access to Punjab's Public-Private Partnership programs in education. *International Journal of Educational Development*, 72. DOI: 10.1016/j.ijedudev.2019.102126.
- Badu, E., Kissi, E., Boateng, E.B., & Antwi-Afari, M.F. (2018). Tertiary educational infrastructural development in Ghana: *Financing, Challenges and Strategies*. *Africa Education Review*, 15(2), 65-81. DOI: 10.1080/18146627.2016.1251295.
- Barrera-Osorio, F., D. Galbert, P. Gaspard, J. P. Habyarimana, & S. Sabarwal (2020). The Impact of Public-Private Partnerships on Private School Performance: Evidence from a Randomised Controlled Trial in Uganda. *Economic Development and Cultural Change*, 68(2): 429-469.
- Borodiyenko O. (2021) Public-private partnership in education as a prerequisite for the growth of regional labor markets: analysis of foreign experience. In O. Borodiyenko, N. Nychkalo, Ya. Malykhina at el (eds.). *Financial and credit activity: problems of theory and practice*, 1(36): 408-420.
- Buffie, E., Andreolli, M., Li, B.G., & Zanna, L-F. (2016). Macroeconomic Dimensions of Public-Private Partnerships. *International Monetary Fund, Working Paper*, WP/16/78.
- Felipe Barrera-Osorio, David S. Blakeslee, Matthew Hoover, Leigh Linden, Dhushyanth Raju, Stephen P. Ryan. (2022). Delivering Education to the Underserved through a Public-Private Partnership Program in Pakistan. *The Review of Economics and Statistics*, 104 (3): 399-416. DOI: https://doi.org/10.1162/rest_a_01002.
- Gorard, S. (2013). *Research designs: robust approaches for the social sciences*. London: SAGE Publisher.
- Heather, S. and Kathleen, B. (2007). *Public private partnership handbook*, Yerevan: Asian Development Bank.
- Hong, S. & Kim, T.K. (2018). Public-private partnership meets corporate social responsibility: the case of H-JUMP school. *Public Money and Management*, 38(4): 297-304.
- Horris, R. T. (2010). How can we capitalize the concept of PPP in education sector?: *Proceedings of the Conference on Public Private Partnership in Education- Opportunities and Challenges*, Hong Kong, 22-23 February 2010.
- Jacob, W.J. (2018). Integrated rural development from a historical and global perspective. *Asian Education and Development Studies*, 7(4): 438-452.
- Kumari, J. (2016). Public-private partnerships in education: an analysis with special reference to the Indian school education system. *International Journal of Educational Development*, 47: 47-53.
- Lee, M., Han, X., Gaspar, R., & Alano, E. (2018). Deriving macroeconomic benefits from public-private partnerships in developing Asia. *Asian Development Bank; ADB Economics Working Paper Series No. 551*.
- Mpamila, M. M. (2007). Contribution of NGOs to primary education in Kibaha and Kisarawe District Councils: the case of plan Tanzania. Unpublished doctoral thesis. Morogoro: Sokoine University of Agriculture.
- Paola Franco-Isaza, Iván Darío López-López, and Carlos Daniel Acosta-Medina. (2020). The public-private partnership (PPP) for quality education in the framework of Colombia in peace. *Journal of International Development*, 26(6): 875-886.

- Patrons, H., Anthony, F., Barrera O, and Juliana, G. (2009). The role and impact of public-private partnerships in education. Washington, DC: The World Bank.
- Patrons, H. A. (2010). Public private partnership in education: an option for Thailand. Washington, DC: The World Bank.
- Pfisterer, S. (2017). Public-private partnership for development: governance promises and tensions. In Leitão, J., de Morais Sarmiento, E. and Aleluia, J. (Ed.), *The Emerald handbook of public-private partnerships in developing and emerging economies*. Bingley: Emerald Publishing Limited.
- Pigozzi, M. J. (2008). "Quality Education and the Global Learning Group, AED New York."
- Prachitha, J., Mahalingam, A., Deep, A., and Thillairajan, A. (2015). "Impact of Private Sector Participation on Access and Quality of Services: Systematic Review of Evidence from the Electricity, Telecommunications and Water Supply Sectors." *Journal of Development Effectiveness*, 7(1), 64–89.
- Tanzania Education Network (2004). Performance of civil society organisations in delivery of quality education in Tanzania. Dar es Salaam: Tanzania Education Network.
- UNESCO (2005). Education for all: a global monitoring report. Dakar: The Dakar Framework for Action in 2000.
- United Republic of Tanzania (2006). Primary education development programme (2002- 2006), Dar es Salaam: Ministry of Education and Culture.
- United Republic of Tanzania (2014a). National Education and Training Policy. Dar es Salaam: Ministry of Education and Vocational Training.
- United Republic of Tanzania (2014b). Pre-primary, primary and secondary education statistics. Dodoma: Prime Minister's Office Regional Administration and Local Government.