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Empowering Tanzanian Women: The Moderating Role of Awareness on Stock Market Participation

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Abstract

Women are identified as having limited investment opportunities associated with different social, economic and awareness factors. Stock markets such as the Dar es Salaam Stock Exchange (DSE) facilitate women's ownership of the key sectors of the economy through share ownership. Thus, this paper seeks to examine the moderating role of awareness in empowering women through participation in the DSE. The study involved women who are direct participants in DSE located in the Dar es Salaam region. Multi-stage sampling was applied, and quantitative data collected were analysed using a Multiple regression model. The findings show that women who are employees increase investment size and trading frequency due to increased awareness of DSE activities. Similarly, high income, age and high level of education positively affect women's investment size and trading frequency of shares in DSE. Therefore, awareness increases knowledge of investment opportunities for women, leading to high investment in DSE. Also, working age and high education level increase women's knowledge of investment, hence improving investment size and trading frequency in DSE. Thus, the DSE and Capital Market and Securities Authority should increase awareness creation seminars among women to promote financial independence. Apart from that, investment studies should be incorporated into different secondary education syllabi to instill investment knowledge.

Keywords: *Women, Investment size, Trade frequency, Awareness, Empowerment*

1.0 Introduction

Limited women's investment is among the significant concerns in the asset management industry in this era of women's empowerment (CFA, 2016). The significance of women's investment is associated with world efforts to increase women's participation in economic opportunities such as asset ownership (World Bank Report, 2022; UNDP, 2015). In Tanzania, as in other parts of the world, financial inclusion and asset ownership remains a critical challenge for women. The reasons behind limited women's investment in assets are linked to limited opportunities, income, norms and culture, risks and expected returns (WB, 2022; Bacher, 2022; Barasinska and Schäfer, 2017). Impliedly, cultural practices which give more economic opportunities to male individuals to own assets and participate in different economic activities demoralise women's engagement in economic activities. Therefore, more equal economic and investment opportunities should be provided to women. Capital markets, which are among the facilitators of increasing wealth over time by acquiring and trading stocks, have a role to play in ensuring women's inclusion in stock market investments.

Dar es Salaam Stock Exchange (DSE) in Tanzania is among the emerging capital markets in Africa that trade financial assets, facilitating the flow of funds from surplus to deficit areas and economic growth (Iddrisu and Abdu-Malik, 2017). DSE facilitates the flow of funds to 28 listed companies and benefits 556,121 direct individual investors (DSE, 2022). Despite the benefit of financial asset ownership among individuals, there exists inequality in ownership of the assets between men and women (Khan *et al.,* 2020). According to a World Bank report (2022), women have limited economic opportunities, as only 33% have access to mobile money accounts. Among them, only 10% of women had access to bank services, while more than 50% accessed non-bank formal financial services, especially microfinance and informal groups (Lambin & Nyyssölä, 2022). In the capital markets, individual investors are less than one per cent of the population (Finscope, 2017). Similarly, a limited number of women have been reported to participate in the stock market (Bacher, 2022; Bucher-Koenen, 2021).

Capital market theory encourages households' investments in risky assets such as shares for expected premiums (Akhter & Hoque, 2022). With investment in financial assets such as shares, women are expected to increase their willingness to invest, hence transforming their financial future through confidence and risk tolerance. Additionally, financial asset ownership is important as it facilitates the socio-economic development of individuals because it is the source of security and resilience against changes in the market (Najjar *et al.,* 2020). Furthermore, assets, whether financial or non-financial, facilitate the generation and diversification of income for future benefits. Thus, individuals with assets can use them as collateral to access funds and reduce illiquidity in their business.

Behavioural finance theory, as an important part of individuals' investment decisions, suggests that individuals are normal and not rational investors who focus on price and profit generation to make investment decisions; therefore, with limited knowledge of investment, they invest their portfolios based on their irrational behaviour and psychology, leading to behavioural biases, such as overconfidence, excess optimism, herd behaviour, and the disposition effect (Prosad *et al.*, 2015). On the contrary, the judge-advisor framework, as per Bonaccio & Dalal (2006), suggests that judges (individuals) are the final decision makers in any activity, regardless of the influence of other variables such as advice. Therefore, women's participation in the stock market may not be influenced by only the benefits and risks associated with the stock market but rather by their own judgement based on their behavioural factors or awareness of stock market operations. The theory is supported by Bacher (2022) and Bucher-Koenen (2021), who argued that men participate in stock market more than women due to less confidence level of women, household size managed by single women, limited income and limited financial awareness among women. Therefore, apart from confidence, personal judgement, awareness of financial issues, and investment opportunities influence women's participation in the stock market (Gumbo & Sandada, 2018).

Women's participation in the stock market and accessibility to financial assets could enable them to be self-financial sufficiency and reduce poverty, leading to economic development. In that regard, women's limited accessibility to financial assets such as shares increases dependency. Apart from that, limited access to financial assets led women to lack income of their own, which limited their economic growth (Magambo & Nyamwesa, 2022). Limited financial assets indicate less influence of women in corporate behaviour and on the capital formation of firms in which they have invested their resources. According to Smits (2022), women's participation in the capital market can lead to an extra inflow capital of $1.08 trillion if women and men invest equally. However, there exists inequality in the ownership of assets among men and women (Khan *et al.,* 2020). Therefore, examining the role of awareness and its influence on women's participation in the stock market can enhance the generation of profit, capital gain and economic growth among women in Tanzania.

Addressing women's participation in the stock market supports worldwide efforts to empower women and reduce gender inequality. This is because of Sustainable development goals, whereby Goal 5 aims at ensuring gender equality in economic activities and decision-making by 2030 (UNDP, 2015). SDGs further strain women's access to economic resources, land, property, and financial services. At the same time, Agenda 2063 Aspiration Six (6) focuses on empowering African women, and Aspiration One (1) aims at inclusive growth and sustainable development through mobilising domestic resources and promoting increased savings and investments (AUC, 2015). Similarly, the government of Tanzania has introduced numerous numbers of policies requiring equal participation of individuals. For example, Tanzania Development Vision 2025 targets racial and gender balance in economic activities by 2025 (URT, 1999). Moreover, DSE has been providing awareness creation seminars encouraging individuals to invest in the stock market even through groups where women are high in number.

Despite the Government and DSE's efforts, women's participation in asset ownership in Tanzania still needs to be improved, especially in owning financial assets such as shares (Epaphra & Kiwia, 2021). Different research (Bacher, 2022; Bucher-Koenen *et al.,* 2021) have been conducted to examine the causes behind limited ownership of financial assets among women around the world. Magambo and Nyamwesa (2022) revealed that lack of knowledge and awareness, lack of income and traditions and customary norms are among the factors affecting asset ownership among women. Apart from that, fear of risk, financial literacy, and limited knowledge of the stock market affect share ownership decisions among women (Epaphra & Kiwia, 2021; Bucher-Koenen *et al.,* 2021). Certainly, limited income, traditions and norms relating to asset ownership for women, awareness, and financial literacy could affect women's decision to invest in the stock market. However, the studies mainly focused on cultural and social outcomes of limited women's participation in different economic activities. They further focused on livestock, land ownership, and financial inclusion especially on using formal financial systems (World Bank, 2022). However, in Tanzania, more attention needs to be provided to how awareness moderates empowering women to participate in the stock market.

Therefore, this study sought to establish the influence of awareness in empowering women to participate in the Dar es Salaam Stock Market through share acquisition. The dependent variable women empowerment (WP), measured by income level, and employment status. The empowerment can be enhanced using independent variable stock market participation (SMP), which is indicated by investment decision, frequency of participation, and investment size. Additionally, the relationship between the dependent and independent variables is moderated by awareness (AW), which is indicated by awareness of DSE activities. Although different studies have examined the factors influencing women's participation, while others have analysed the gender investment gap (Shee, 2022; Bacher, 2022; Dong et al., 2023). However limited studies have examined how awareness moderate the relation between women empowerment and participation by investing in the stock market. Thus, addressing women's empowerment through the stock market facilitates government efforts to reduce investment inequality and increase women's financial independence through investment enhanced by awareness.

2.0 Literature Review

2.1 Theoretical Review

Behaviour finance theory, developed and improved by Statman (2008), states that investors are normal, not rational, and the market is inefficient; thus, the expected return is measured by factors more than risk. Therefore, an investor's decision to invest is not rationally based on risk and return but rather behavioural factors. Therefore, women's decision to participate in the stock market for their empowerment may be associated with their irrational decision-making due to limited awareness, which hinders them from investing in the stock market. Additionally, according to Prosad *et al.* (2015), behavioural finance considers investors' psychology, which leads to behavioural biases, such as over-confidence and excess optimism, which are measured by past success experience and frequency of trading for an individual. Therefore, through awareness creation, women can become thinkers, consider price and profit and decide to invest in the stock market for their empowerment. This theory focuses more on the behaviour of individuals and does not include decision-making, which might be impaired by friends, family and social groups; thus judge-advisory framework seems necessary.

The Judge-advisory framework/system model, as developed by Sniezek & Buckley (1995), assumes that decision-makers engage in social information search in order to make decisions that have uncertainty and are important. Therefore, it suggests that the judge can seek information known as advice from different groups of people, media or other social groups. However, the final/ultimate authority for final decision-making is left in the hands of the judge/individual herself (Sniezek, 1999). Therefore, the advice is there to add value and ensure the decision made is accurate. Hence, the theory is applied in this paper in the sense that no matter the advice, risk and return, the final decision is left in the hand of the woman herself, but it can be enhanced through awareness, empowerment, socialisation, experience and access to information.

2.2 Empirical Review and Hypotheses Development

The study focused on how awareness can mediate the relationship between women's empowerment and participation in the stock market. Apart from awareness, other factors can direct or indirectly affect the relationship between stock market participation and women empowerment, such as age, education, and marital status. Thus, the empirical review covered all the variables, including participation in the stock market, awareness, women empowerment, age, marital status and education, which are treated as control variables as follows:

Stock Market Participation (SMP)

Stock market participation includes ownership of shares individually or through mutual funds of any listed company. According to Nyakurukwa and Seetharam (2022), individual participation includes individuals and households who save and own mutual funds, stocks or shares. Risk perception and willingness to take risks are among the key economic factors identified to affect participation decisions among individuals (Shehata et al., 2021; Svetlova and Thielmann, 2020). Additionally, Cheng (2019) noted that economic changes tend to influence an individual's financial risk perception, which in turn affects the intention to invest in the stock market, as suggested by behavioural finance theory. Apart from that, investment returns and advice accessed from media sources influence individuals' investment decisions (Merkoulova and Veld, 2021; Choi and Robertson, 2020; Hu *et al*., 2021).

Apart from initial investment decisions, the frequency of trading shares among individuals is also among the noted challenges among individuals. Ozenbas *et al*. (2022) attributed this to a lack of understanding of financial markets, technology, socio-economic factors, and fear of incurring a loss. Therefore, the number of trades by individuals determines the size and frequency of trading in the market (Chong *et al.,* 2020; Du and Zhu, 2017). However, Cardoza (2019) associated trade frequency and investment size with the investment strategy of an individual. Therefore, the decision to invest, the amount to invest and the frequency of investment depend on the strategy of the investor because he is the final decision maker, as argued by the judge-advisory framework.

Regarding women and participation, Shree (2022) analysed documents indicating that the factors influencing women investors' trading behaviour include the socio-economic influence and portfolio composition of first-time investors. Sociocultural factors, personal factors, economic factors, firm-related factors, investment-specific factors, behavioural factors and personal factors influence women's choice to invest. Also, it indicated that, for group investment, the presence of males in groups increases the probability of selecting higher-risk investments. However, according to the Judge-advisor framework, individuals/judges are the final decision makers regardless of the manipulation of independent variables such as expertise and financial initiatives (Bonaccio & Dalal (2006). Impliedly, for investment decisions, women are the judges /final decision makers on the investment size and trading frequency despite advice from friends, media or other factors.

Women's Empowerment (WP) and participation

Globally, different studies indicated low investment among women which is supported by the World Bank (2022), which indicates that women have limited access to investment opportunities than men; hence, they have low portfolio allocation. Different issues have been associated with the limited empowerment of women in investment opportunities. Bacher (2022) examined The Gender Investment Gap over the Life-Cycle *and* noted that single women tend to hold less risky investment portfolios compared to single men due to lower income and large household size for single women. Dong *et al*. (2023) also noted the negative association between female individuals and stock/share ownership. On the other hand, Plieger *et al*. (2020) found that males are more associated with risk-taking behaviour than females. Also, a self-directed personality positively predicts success in stock market participation. Therefore, women can be empowered to invest when they have high access to income, enabling them to manage their families and save in shares. The findings are supported by Melcangi & Sterk (2020), that high income enhances participation in the stock market.

Apart from income, employment/ access to roles with lower gender asymmetry (For example, in Austria, the Netherlands and Spain) enables women to invest in the stock market (Barasinska and Schäfer, 2017). They further found that in Italy, women refrain from participating in the stock market more than their risk tolerance level, which can associated with behavioural factors and not just risk as per behavioural finance theory. Also, women who self-select to participate in the stock market invest the same as men in all countries. Additionally, married couples in Dutch, women and men, are less different in propensity to invest in stocks. Therefore, for women to be empowered, there is a need for access to employment and high income for proper portfolio allocation. Therefore, the following hypotheses are developed:

HE_1: Income level among women influences the decision to invest in the stock market.
HE_2: Employment status influences investment decisions among women.

Awareness (AW) and participation

Because the decision to invest is on an individual herself and not advice or other independent factors as per the judge-advisor framework, then awareness of the stock market is important as it indicates knowledge and exposure to information related to share ownership (Clavery, 2018). The awareness of the stock market can be in knowing the market itself, knowledge of benefits, challenges, trading and financial issues. Wangmo *et al.* (2018) examined the awareness and challenges of the Bhutan stock market and found that limited awareness of the stock market itself, trading activities, and benefits affects participation among individuals. Apart from general awareness, Arts (2018) revealed a positive relationship between financial literacy/awareness and stock market participation. Similarly, Gowela (2020) identified financial awareness as a fundamental obstruction to participation.

A study by Dong *et al*. (2023) on business school education, motivation, and young adults' stock market participation found an increase in stock ownership during and after their studies compared to before studying. It further showed that motivated students studying accounting and finance studies are more likely to own stock. Additionally, Nyakurukwa and Seetharam (2022) noted that an increase in financial literacy boosts the odds of stock market participation. However, concerning women and awareness, Bucher-Koenen *et al*. (2021), while investigating Fearless Women: Financial Literacy and Stock Market Participation, found that women have lower financial knowledge compared to men, and this leads to a lack of confidence, hence impacting the stock market participation. On the other hand, the judge-advisory framework propounds that manipulative independent variables such as financial advice from experts and friends can not affect the decision to invest except for the judge/investor herself. Therefore, the paper hypothesised that;

HA_1: Awareness of stock market activities affects investment decisions among women

Awareness and empowerment

Awareness for an individual increases self-realisation in different matters including financial issues such as investment choices. Individuals aware of stock market trading are motivated to invest in shares as it increases risk-taking skills and appropriate allocation of financial resources (Wangmo *et al.*,2018). Williams (1985), while adding to self-awareness theory, argued that self-awareness increases self-knowledge and adherence to standards, morals and beliefs. He was supported by Wright (2005) that an individual is self-aware and can increase risk tolerance level and ability to analyse financial matters through financial awareness, self-control, and strength. Impliedly, awareness empowers an individual with decision-making skills, analytical skills, resource allocation and management skills.

Control variable (CV)

Apart from awareness, there are other common factors which may influence the relationship between participation in the stock market and women's empowerment, such as the age of women, marital status and education level. However, in this study, they are treated as control variables because apart from basic factors influencing women's empowerment, demographic characteristics (age, education and marital status) partly contribute to women's investment in the stock market. According to Shree (2022), young age individuals and women over 60 years of age perform well than men in investment; however, women aged 30 to 40 years of age do not perform well. The findings relate to Dong *et al*. (2023), who found that age is positively associated with stock ownership. Impliedly, as individuals become older, they have accessed financial knowledge and financial resources, hence increasing investment in the stock market. Similarly, Nyakurukwa and Seetharam (2022) noted that age and education level significantly influence stock market participation among individual investors. Thus, women of working age with a degree education have a high chance of investing in the stock market due to increased knowledge of investment. Regarding marital status, Choi and Robertson (2020) and Hu *et al.* (2021) found that married individuals are more likely to participate in the stock market due to financial responsibilities. Therefore, the study hypothesised demographic characteristics influence participation as follows;

HC_1: There is a positive relation between age and women's participation in the stock market.
HC_2: The level of education positively influences women's participation in the stock market.
HC_3: Marital status positively influences women's participation in the stock market.

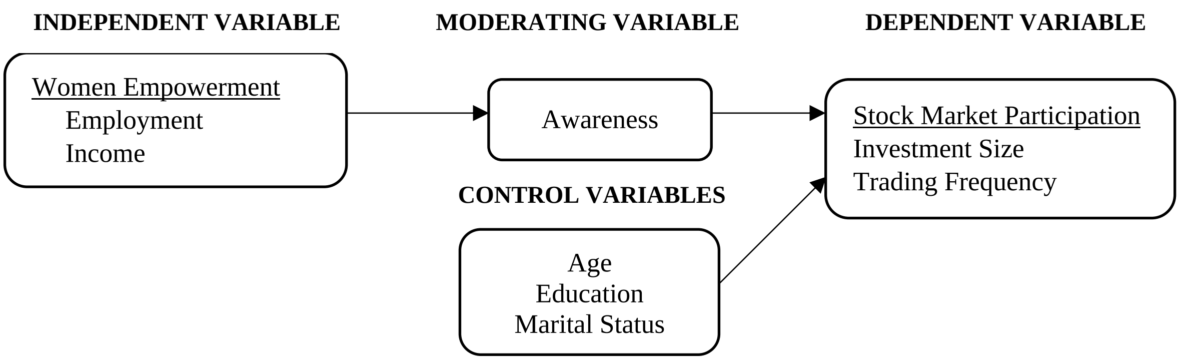

Figure 1: Conceptual Framework

3.0 Methods

3.1 Research Design

The study adopted a cross-sectional research design because it simultaneously measures the variables of women's empowerment, awareness and participation in the stock market of the study population and facilitates studying the association between them (Setia, 2016). It also facilitates the use of different models, from data collection to analysis. A quantitative approach was used in analysing the relationships between the variables (empowerment, awareness and participation). The study was conducted in the Dar es Salaam region because it is where DSE and its brokers are located. It is the largest business centre with high women's participation in economic activities; however, the distribution of share ownership among women is limited known.

3.2 Population and Sampling

The study population includes women selected from 1,859,517 women of working age in Dar es Salaam regions (NBS, 2022). Among them are 556,121 individual investors (women and men) recorded in the DSE through the depository (DSE, 2020). Therefore, multi-stage non-probability sampling was applied to select sample size for the study. The first stage involved selecting large private and public institutions with many employees and customers, such as Banks, Academic institutions, Investment centres, and other public institutions such as Hospitals. Secondly, convenience sampling was used to access women due to limited records of women invested in the stock market. From the first selected women, the researcher identified some of the women who invested in the stock market (participants). As a result, the identified women referred the researcher to other participants who also referred to others; hence, snowball was involved. The non-discriminatory snowball was appropriate due to the limited accessibility of women investors. A total of 168 women were accessed; however, the study required participants only; hence, 89 women who invested in the stock market (participants) were included in the study.

3.3 Instruments

A questionnaire was used to collect quantitative data from the 100 women participants. A questionnaire is a form created with a methodical collection of questions and sent to numerous respondents in order to get information from them (Pandey & Pandey, 2015). The present study employed a closed or structured questionnaire, as per Walliman's (2011) and it was split into two sections. The first section asked questions about general demographics and socioeconomic characteristics. The second section concentrated on DSE involvement and covered topics including DSE participation, trading frequencies, and awareness.

3.4 Validity and Reliability

Pre-testing of the questionnaire was done on 10 women different from those involved in the main data collection to measure the validity and reliability of the questionnaire. Problems, suggestions, recommendations, and observations related to questions in the questionnaire were improved and incorporated for final data collection. Therefore, acquired data were put through a reliability test using Cronbach's Alpha coefficient. The results of the 14 items tested indicated Cronbach's Alpha coefficient of 0.8, which is considered acceptable.

3.5 Statistical Treatment of Data

Quantitative data were analysed using descriptive (Frequency and Percentage) and Moderated Multiple Regression models as adopted and improved by Mahaboob *et al.* (2020). The model was selected because it enables to estimate relationships between multiple variables simultaneously. The data analysed met all the assumptions: The dependent variables were normally distributed; there was independence in the observation of dependant variables; There was no Multicollinearity among independent variables ($r < 0.8$), and there was a constant variance of observation from one DV to another. The Dependent variable, Participation, was measured using investment size (amount) done by respondents and the frequency (often, rarely and holding) of trading in the stock market. Participation was measured against awareness, access to income, employment, and control variables (age, education level and marital status) to show the causal relationship. Therefore, Table 1 indicates the variable measurements as per the model:

Table 1: Variables Measurement

	Variables	Variables Description and Measurements	Measurement
P1	**Dependent Variable** Participation in the Stock Market	Ownership of shares in different companies listed at DSE and benefit returns, measured by; - Investment Size (Amount) of shares owned - Frequency of trading (Often, Rarely, Hold)	 +/- +/-
	Control Variables		
Age	Age of respondents	Years; 15-24: 25-34: 35-44: 45-54: 55-64: >65	+/-
MS	Marital Status	Single; Married; Divorced; and Widow	+/-
Edu	Education Level of respondents	Lower education; Secondary; Vocational; Non-degree; and Degree	+/-
	Independent Variables		
Inc	Income level	From TZS 50,000 to TZS 100,000,000	+/-

Emp	Employment	Gvt employee, Private, Self-employed, Farmer	+/-
Rpe	Risk perception	Risk taker; and Risk averse	+/-
Fa	Financial Awareness	Book-keeping, financial analysis, budgeting, financial management	+/-
Smk	Aware of the Financial Market	Know DSE, Know DSE activities	+/-

3.6 Ethical Considerations

From data collection to analysis, ethical considerations were followed, ensuring that respondents suffered no harm and that the researcher had their full consent before beginning data collection. Participants in the research were guaranteed their privacy, secrecy, and anonymity because no respondent name was included in the data gathering. Moreover, plagiarism, exaggeration, and dishonesty were avoided.

4.0 Findings and Discussion

The study findings are divided into two groups. The first includes control variables showing demographic characteristics and preliminary findings of women's empowerment and stock market participation. Women's empowerment was measured using income and employment as key indicators. Also, participation was measured by using investment size, and frequency of participation by individuals. Awareness of DSE was also measured among individual participants. The second part shows the results of the relationship between women's empowerment and participation in the stock market.

4.1 Control Variables

Women who invest in the stock market have different demographic characteristics. Therefore, this section provides an analysis of the demographic characteristics of women participating at DSE, including their age, education level and marital status, as indicated in Table 2:

Table 2: Demographic Characteristics of Respondents

Age	**25-34 Years**	**35-44 Years**	**45-54 Years**	**55-64 Years**	**>65 Years**
Number	9	22	30	17	11
Percent	10.1	24.7	33.7	19.1	12.4
Level of Education	**Lower education**	**Secondary Education**	**Vocational education**	**Non-degree education**	**Degree education**
Number	12	8	10	40	19
Percent	13.5	9.0	11.2	44.9	21.3
Marital Status	**Single**	**Married**	**Divorced**	**Widow**	
Number	6	65	15	3	
Percent	6.7	73	16.9	3.4	

Table 2 shows that 33.7% of women aged 45 to 54 years participate more in the stock market than younger and older age women, followed by 24.7% of women aged 35 to 44 years. The findings relate to Dong *et al*. (2023) findings, and they can be associated with an increase in commitment and financial stability as it is working age and an increase in the maturity level of participants. Similarly, findings show that women who are married participate more (73 percent) in the stock market than single, divorcees and widows. Impliedly, commitment related to marriage, shared responsibilities, and family future financial stability can influence participation (Choi and Robertson, 2020; Hu *et al.,* 2021). This is because sharing responsibility for working men and women enables meeting the family's basic needs and still remaining with excess, which can be invested for the family's future. Apart from that, findings indicate that 44.9% of women have non-degree (Diploma and Certificate) education, followed by 21.3% of degree graduates (First and postgraduate degree), invest more in the stock market than women with lower-level education. The findings are associated with the type of education they gain during their studies and exposure to investment opportunities, as supported by Dong *et al.* (2023). Impliedly, women with advance education, due to an increase in knowledge they learn about different opportunities which enhance their investment capacity.

4.2 Women Empowerment

Women's empowerment was measured using access to income and employment opportunities, which can provide access to investment opportunities. Therefore, income and employment were measured as indicated in Table 3:

Table 3: Frequency distribution of women's empowerment

Variable	Categories	Frequency	Percent (%)
Annual Income	50,000-1,000,000	1	1.1
	1,000,000-5,000,000	21	23.6
	5,000,000-10,000,000	27	30.3
	10,000,000-30,000,000	24	27.0
	30,000,000-50,000,000	13	14.6
	50,000,000-100,000,000	3	3.4
Employment	Government employee	16	18.0
	Private Comp Employee	10	11.2
	Self-employed	25	28.1
	Own company/school	15	17.4
	Farming	32	37.2

The findings show that women who are participants mostly earn an income of TZS 5,000,000 to 10,000,000 per annum with a proportion of 30.3 percent, followed by groups of those earning TZS 10,000,000 to TZS 30,000,000. The findings imply that women earning an average income invest more in the stock market than lower-income earners and higher-income earners. This is due to the fact that share acquisition can cost TZS 50,000 and above, and therefore, any woman with an average income can invest. However, investment can occur from savings after consumption for basic needs is attained. The findings contradict those of Bacher (2022) and Magambo and Nyamwesa (2022), who noted that lower income hinders women from investing and, therefore, women with high incomes could invest viably. Thus, this study clearly shows that average income earners are the key participants in the stock market as they seek more investment opportunities for future return than high income earners. Furthermore, the findings indicated that farmers and self-employed women participate in the stock market more than employees, as they form 37.2 per cent and 28.1 per cent, respectively. The findings are because self-employed farmers invest in divest opportunities, seeking extra funds from different investments. Thus, women involved in employment/ roles with lower gender asymmetry invest in the stock market (Barasinska and Schäfer, 2017).

4.3 Stock Market Participation

Women's participation in stock was measured using the investment size done by them (portfolio allocation) and frequency of trading in the stock market. The results of investment size and trading frequency are indicated in Tables 4 and 5:

Investment size

The size of the investment (portfolio investment size) indicates the amount of money invested in shares by an individual. The share price varies; however, an individual can invest as much funds as possible. Thus, the investment size for women is as follows;

Table 4: Descriptive statistics for investment size

Variable	Range	Min	Max	Mean	Std. Error	Std. Deviation
Investment size	47,950,000	50,000	48,000,000	9,847,752.81	1,050,812.866	9,913,348.755

The results in Table 4 show that the minimum amount invested was TZS 50,000, while the maximum amount was TZS 48,000,000. Therefore, women invest a diverse amount of money in shares depending on fund accessibility; on average, they invest TZS 9,847,752 in shares. The average amount invested is considered reasonable because it can cover costs in trading and generate profit/return from it; however, due to high levels of volatility, individuals should invest only an amount of money they can afford to risk (Yochim and Davis, 2021). The finding relates to the average income earned by women, where it indicated that they invest more and therefore invest the average amount in shares, which might be due to fear of risk associated with shares, as noted by Plieger *et al*. (2020). The findings relate to the real-world situation where many women fear risk investment but prefer safer assets.

Frequency of Participation

The frequency of participation was determined by the number of times a woman traded in the stock market and grouped into not trading (holding for dividend), rarely trading, often and very often, as indicated in Table 5:

Table 5: Frequency of participation

Variable	Categories	Frequency	Percent (%)
Frequency of participation	Very often	3	3.4%
	Often	59	66.3%
	Rarely	15	16.9%
	Not at all	12	13.5%

The findings in Table 5 show that women often trade in the stock market, as they form 66.3% of the respondents. Therefore, most of the women investors are traders, but they do not trade very frequently, and this could be due to lack of confidence to trade as supported by Bucher-Koenen *et al*. (2021). This implies that women are investors and traders who benefit through capital gain (change in price), however they do not trade much often which has been observed in the DSE whereby the trading frequency is low among local traders than foreign investors.

Awareness of DSE Activities

Awareness as a moderating variable was categorised from those unaware to those who are completely aware of DSE activities, including listing securities, trading, and mobilising resources. Thus, the results are presented in Table 6 as follows:

Table 6: Awareness of DSE Activities

Variables	Categories	Frequency	Percent (%)
Aware of DSE activities	Completely Un-aware	10	11.2
	Un-aware	8	9.0
	Somehow aware	19	21.3
	Aware	23	25.8
	Completely aware	29	32.6

The findings in Table 6 show that 58.4 percent (25.8% and 32.6%) of women participating in the stock market were aware of DSE activities, including listed companies, trading securities, providing awareness seminars, and mobilising resources for listed companies. The findings imply that the aware individual knows how to trade the stocks and are ready for associated risk which resulted into making the right investment, as argued by Wangmo *et al.* (2018). On the other hand, only 20 percent of the respondents showed limited awareness of DSE and its activities. However, for those unaware, their participation in the stock market might be due to influence from friends, families, and social groups.

Women's empowerment and participation

In examining the moderating role of awareness of DSE activities on the relationship between women empowerment and stock market participation, multiple regression was used, and the results are as presented in Table 7:

Table 7: The moderating role of awareness on women's Empowerment and Participation

Variables	1	2	3	4
Government employed		-1.654***	-1.846***	-5.321***
		-0.369	-0.328	-0.894
Private employed		-0.653	-0.765*	0.211
		-0.418	-0.389	-0.913
Self-employed		0.0596	-0.0746	0.049
		-0.313	-0.296	-0.871
Income		0.673***	0.758***	0.617***
		-0.124	-0.109	-0.208
govxaw				1.622***
				-0.298
privxawe				-0.41
				-0.26
selxawa				-0.0504
				-0.207
incxawe				0.0136
				-0.0397
Age	0.631***	0.198		
	-0.14	-0.135		
Marital	-0.0925	-0.167		
	-0.288	-0.235		
Education	0.196**	0.0576		
	-0.0744	-0.0663		
Constant	12.35***	12.16***	12.50***	12.92***
	-0.801	-0.819	-0.541	-0.47
Observations	89	89	89	89
R-squared	0.257	0.541	0.525	0.689

Key: 1,2, 3 & 4 = Different regression models

1, 2, 3: Base models without a moderating variable with differences in coefficients and standard errors.

4: Awareness moderates the relationship between women's empowerment and participation.

The paper hypothesised that employment status influences investment decisions among women. The findings in Table 7 show that the three models' regression coefficients for government employment show a statistically significant inverse relationship with stock market participation (-1.654***, -1.846***, and -5.321***); hence the hypothesis is accepted. Findings imply that compared to other forms of employment, women who are government employees have lower levels of trade frequency and investment amount. Additionally, awareness was found to have a significant moderating influence (1.622***) on the relationship between government employment and participation in the stock market. Impliedly, the diminishing effects of government employment on trading frequency and amount invested decrease as public awareness of stock market operations rises. Thus, more understanding of the stock market increases the likelihood that women working in government organisations to invest more and trade often. The results relate to those of Wangmo *et al.* (2018) and Magambo and Nyamwesa (2022), who found that knowledge and awareness affect asset ownership among women. On the other hand, self-employed individuals tend to invest large amounts and trade more frequently compared to other groups; however, awareness of the stock market decreases their investment size and trading frequency as it is mind opener to other new and safer assets which may trigger a person to try other investment opportunities. This is because self-employed individuals seek more beneficial and attractive investments, so an increase in awareness of opportunities may decrease their investment in shares. Thus, the findings relate to the Judge-advisory theory because empowered women are the final decision-makers in investment decisions despite the awareness creation.

Regarding income, the findings in Table 7 confirm the hypothesis that income level influences the decision to participate in the stock market, thus enhancing empowerment. This is because the regression coefficients for income show a statistically significant positive relationship with stock market participation across the models (0.673***, 0.758***, and 0.617***). These results indicate a significant relationship between increased income and higher stock market participation. This implies that, as income increases among women, it is more likely to influence larger investment sizes and more frequent trading in the stock market. Hence, individuals with high incomes are more active in investment activities. The findings relate to those of Melcangi and Sterk (2020), who found an increase in participation driven by households' high incomes. However, the interaction of stock market awareness had no significant impact on moderating income and participation in the stock market. Thus, an increase in awareness of the stock market can enhance participation, but for women with high income, it limitedly affects the participation decision because it adds to their knowledge on share ownership and trading for capital gain.

The study hypothesised that the interaction of awareness of stock market activities affects investment decisions in the stock market among empowered women. The findings in Table 7 show that awareness of DSE activities moderates the relationship between government-employed women with income and participation in the stock market. Increased awareness affects their investment and trade frequently in the stock market (1.622***, -0.410, -0.0504 and 0.0136) for government, private, self-employed and income levels. Awareness of DES activities reduces the diminishing effect of employment in participation. Hence, the alternative hypothesis is accepted and rejects the null hypothesis that awareness does not influence women's participation in the stock market. Impliedly, women who have high incomes and are employed can easily invest with increased awareness of investment opportunities. However, women who are self and privately employed, continuously seeking investment opportunities, may divert their resources to other investment opportunities due to increased awareness and, therefore, invest less. The findings relate to Wright (2005) and Wangmo et al. (2018), who found that individuals who are aware of stock market trading are motivated to invest in shares as it increases risk-taking skills and appropriate allocation of financial resources. Additionally, the findings relate to behaviour finance theory because awareness can influence the behaviour of an individual towards stock market participation.

The observed values in Table 7 are consistent with the hypothesis model prediction that there is a positive relationship between age and women's participation in the stock market. This is because the findings show a positive coefficient of age towards participation (0.631***); hence, the alternative hypothesis is accepted. The findings imply that, as women grow in age, they increase their investment size and trading frequency in the stock market. Thus, older individuals tend to have larger investment sizes and trade more frequently. However, the investment size and trading frequency decrease in significance as they get much older because the behaviour towards risk-taking and confidence changes as per behaviour finance theory. The findings relate to those of Gumbo and Sandada (2018) and Hu et al. (2021), who noted that working age participate more in the stock market than young individuals. Impliedly, aged women commit to diversifying their resources for future stability, but as they grow older, they invest in less risky assets.

The initial hypothesis predicts that marital status has a positive effect on women's investment decisions. However, contrary to the hypothesis, the findings in Table 7 indicated a negative coefficient of marital status, whereby being married had a negative impact on stock market participation; hence, it reduces women's investment size and trading frequency in the stock market (-0.0925). Thus, the alternative hypothesis is not accepted. The findings contradict those of Choi and Robertson (2020) and Hu et al. (2021), who noted that married individuals have a high likelihood of participating in the stock market. The unexpected results can be attributed by the fact that married women mostly depend on their husbands (men) to invest, and they focus on taking care of the family, which reduces their investment size and trading frequency in the stock market. The findings thus suggest an increase in awareness because aware women having enough income the marital status cannot affect their investment decision because the decision to invest mainly relies upon the investor despite the advice and influence of the third party as per the Judge-advisory framework.

The observed findings in Table 7 are consistent with the hypothesised model prediction that the level of education positively influences women's participation in the stock market, hence accepted. The findings indicate that the coefficient of education is positive and statistically significant, with a value of 0.196**. Impliedly, women with high education levels accessed knowledge of investment, benefits and risks of share investment through university education; as a result, they invested in large sizes of funds and traded more often compared to those with lower-level education. The findings align with those of Dong *et al*. (2023), who noted that higher education, especially in business studies, has a significant influence on women's participation in the stock market. They further agree with behavioural finance theory as education influences change in behaviour, which triggers changes in investment decisions. The findings can be due to the accessibility of different courses related to business and investment acquired in higher learning education, which increases the knowledge of different investment opportunities.

5.0 Conclusion and recommendations

The study on which this paper is based revealed that income, employment, awareness of DSE, age, and education level influence the investment size and trading frequency of women in Dar es Salaam stock exchange, thus it can be concluded that;

Higher income levels among women significantly boost their investment size in the stock market and increase the frequency of share trading. Thus, women with enough income should be encouraged to invest the excess funds by acquiring shares for their future return. To harness this potential, it is essential to create more income-generating opportunities for women. By empowering women with greater financial resources, we not only enhance their future investments but also drive the economic development of their families and communities.

Government-employed women tend to invest and trade less as they rely on secure earnings for basic needs, different from self-employed women who need diverse income sources and adopt more proactive investment strategies. However, increased awareness is crucial in bridging this gap, as seminars empower women and enhance their investment behaviour towards stock market participation. Hence, employment type influences women's investment behaviour; however, financial awareness bridges the gap. Therefore, the DSE should launch targeted awareness programs for government employees to educate them on the benefits of stock market investments, promoting greater financial independence and growth for women.

Furthermore, awareness of DSE activities is found crucial for increasing women's investment size and trading frequency. Thus, increased awareness of DSE activities boosts stock market participation. Therefore, the DSE and brokerage firms should implement a comprehensive awareness campaign, including seminars, workshops, and tailored educational programs. Highlighting the benefits of stock market investments and offering practical trading guidance, even through digital platforms and social media, will equip more women with the knowledge to make informed decisions, fostering economic growth.

Regarding age, it is revealed that investment size and trading frequency among women rise with age, and this can be due to experience and accumulation of wealth, but they decline in very advanced years due to limited income and a focus on risk-free assets. Thus, DSE should develop investment strategies and educational programs for older women, emphasising other safer investments such as bonds to maintain market engagement and support financial stability throughout their lives.

Additionally, married women tend to invest and trade less in the stock market, primarily because they rely on their husbands for investment decisions and financial responsibilities, which limit their participation. Hence, married women tend to be financially dependent on their husbands, highlighting the need for more awareness. As a result, the government should develop training/awareness programs on the management of personal funds and programs enabling women to access investment funds.

Furthermore, regarding education, highly educated women tend to invest and trade more due to enhanced financial awareness gained through advanced studies. Hence, higher education enhances financial awareness, among women. Thus, to boost financial literacy, the Ministry of Education should integrate finance studies into secondary and vocational curricula. This will equip young individuals with essential investment skills, fostering informed financial decisions and a more financially savvy generation.

6.0 Limitations and areas for further studies

The findings on which this paper is based focus on women participants only who are located in the Dar es Salaam region. Therefore, the findings cannot be generalised to all women investors in Tanzania. Future studies should increase the number of respondents by expanding the horizon through the inclusion of women from different regions in Tanzania apart from Dar es Salaam with different social and cultural practices. This will enable the assessment of whether social or cultural practices influence women's investment decisions and provide detailed recommendations for policy implementation.

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