

Analyzing Educational Attainment and Gender Employment Patterns as Determinants of Household Economic Condition in High-Density Urban Settlements: Evidence from Kanyama, Lusaka

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ARTICLE INFORMATION	ABSTRACT
<p>Article history: Published on 2nd Jan 2026</p> <hr/> <p>Keywords: Educational Attainment Gender Employment Household Wellbeing Savings Behavior Dual-Earner Households</p>	<p>This article investigates the effects of educational attainment and gender employment patterns on household economic wellbeing among 100 households in Kanyama, Lusaka. Descriptive analysis showed that 44% of respondents had secondary education, while only 20% attained tertiary education. Households with at least one tertiary-educated member reported average monthly incomes 1.7 times higher than those without formal education. Pearson correlation results indicated a significant positive relationship between educational attainment and household income ($r = 0.521, p = 0.000$), and between education and household savings ($r = 0.463, p < 0.001$). Regression analysis is confirmed educational attainment as a strong predictor of household economic condition ($\beta = 0.416, p = 0.000$). Regarding gender employment, households where both male and female adults were employed showed a 40% higher savings rate than single-earner households. However, a significant gender disparity was observed, with women disproportionately represented in informal and lower-paying jobs. The correlation between women's employment participation and household savings was moderate but significant ($r = 0.318, p = 0.012$).</p>

1. Introduction

Household economic wellbeing in urban settings is influenced not only by income levels and cost of living, but by the educational and employment characteristics of household members. In high-density settlements such as Kanyama in Lusaka, households encounter persistent economic challenges arising from unemployment, informal sector dependence, and fluctuating income sources. Within this context, education plays a pivotal role in shaping the capacity of household members to secure stable employment, engage in informed financial planning, and accumulate assets over time. Higher educational attainment is closely associated with access to formal employment opportunities, which typically provide more predictable income streams, social protection, and career mobility. Conversely, low educational attainment often confines individuals to casual labor or subsistence economic activities, which offer limited earnings and high vulnerability to economic shocks.

Similarly, gender employment patterns significantly influence household economic resilience. In many low-income urban communities, men and women do not participate equally in the labor market. Women may be constrained by childcare responsibilities, cultural expectations, or limited access to skills training, resulting in lower participation in stable or well-paying work. Men may dominate wage employment, while women take on informal or domestic roles that are unpaid or underpaid. These employment disparities shape how income is generated, controlled, and allocated within households, influencing overall economic outcomes. Understanding how educational attainment and gendered employment patterns interact is therefore essential to assessing household economic wellbeing in high-density urban environments.

1.1 Statement of the Problem

Urban households in Zambia continue to experience significant socio-economic disparities, especially in high-density areas such as Kanyama where unemployment, low incomes, and limited access to social support systems are prevalent. Although considerable research has explored poverty, cost of living, and informal sector dynamics, there remains limited empirical focus on how educational attainment and gender employment patterns jointly shape economic conditions at the household level. Many households in Kanyama depend on informal employment, where income is uncertain and savings are difficult to sustain.

Educational limitations reduce opportunities for formal sector employment and financial inclusion, while unequal employment opportunities between men and women constrain the household’s ability to diversify income sources. Without understanding how these factors interact, interventions aimed at improving household economic wellbeing risk failing to address underlying vulnerabilities. Therefore, this study seeks to examine how educational attainment and gender employment patterns affect household economic conditions in Kanyama.

1.2 Objectives of the Study

The study was guided by the following objectives:

1. To assess the effects of educational attainment within households on their economic condition.
2. To investigate how gender employment patterns within households affect overall economic wellbeing.

1.3 Research Questions

The study addressed the following research questions:

1. How does the level of educational attainment within a household influence its economic condition in Kanyama?
2. In what ways do gender employment patterns shape household economic outcomes in Kanyama?

1.4 Conceptual Framework

This study is guided by the understanding that household economic wellbeing is influenced by human capital and intra-household labor allocation. Educational attainment serves as a key form of human capital, increasing employability, income potential, and financial decision-making capacity. Gender employment patterns determine how labor and income contributions are distributed among household members. When women and men have unequal access to employment opportunities, household income diversification is limited, which increases economic vulnerability..

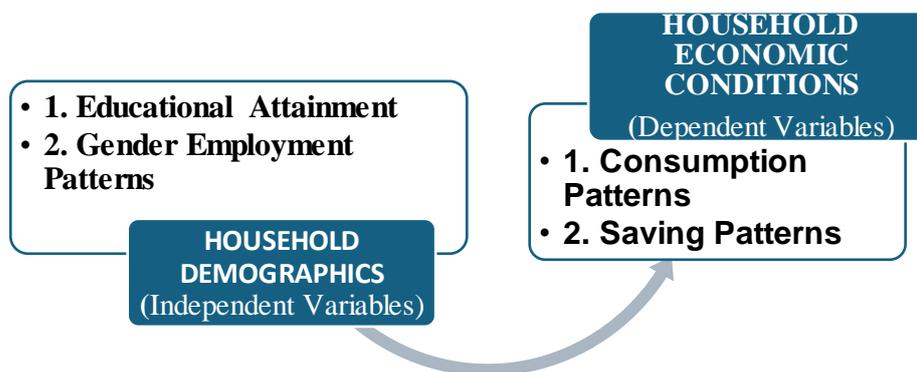


Figure 1: Conceptual Framework

The framework illustrates that household size and dependency structure influence the economic ability of households. Larger household sizes and high dependency ratios increase consumption burdens, reducing income flexibility and savings potential, thereby weakening the household’s economic wellbeing.

1.5 Significance of the Study

This study is significant in several ways. First, it contributes empirical evidence to ongoing discussions on urban poverty and household resilience in Zambia by highlighting the central role of education and gendered labor dynamics. Second, the findings will assist policymakers in designing poverty reduction strategies that go beyond income support to include targeted educational and employment interventions. Third, the study offers insights for NGOs, community-based organizations, and development practitioners working in urban livelihoods, gender empowerment, and skills enhancement programs. Finally, the research provides a basis for further academic inquiry into socio-economic factors that shape household wellbeing in rapidly growing urban communities.

2. Literature Review

2.1 Educational Attainment and Household Economic Condition

Kabayiza and Mutesi (2023), using panel data from East Africa, found that households with members who attained secondary education or above earned 20–35% more than those whose members had only primary education. Similarly, Mwale and Phiri (2022) reported that higher levels of education significantly increased access to formal-sector employment, which offers more reliable earnings and social security benefits. These findings are consistent with earlier regional evidence from Ssewanyana and Kasirye (2021), who showed that households with secondary or higher education earned between 25% and 40% more than those without schooling. Together, these studies suggest that education improves not only employment prospects but also strengthens household resilience through diversified income sources.

Kabeer (2022) highlighted that female education contributes substantially to household wellbeing by improving decision-making on nutrition, healthcare, and children's schooling. This is supported by MoGE (2021) data showing that households where women possess secondary education demonstrate higher child school attendance and better health-seeking behaviors. Shilumbu et al. (2019) in Namibia also found that households with educated female members experienced improved living standards due to more efficient resource allocation. However, ZDHS (2019) revealed persistent gender gaps in literacy in Zambia, especially in rural and informal urban settlements, which limits women's participation in income generation and reduces the potential economic returns from education at the household level.

2.2 Gender Employment Patterns and Household Economic Condition

Ahmed and Lee (2022) found that female participation in formal employment contributed positively to household financial stability, noting that women's earnings improved both monthly savings and long-term asset accumulation. Statistics Botswana report (2020) shows that women's labor force participation is increasing but remains lower than men's, with many women engaged in informal or subsistence activities. Research by Sebusang and Molebatsi (2020) highlighted that women's earnings are often supplementary rather than primary income sources in many households. Eurostat (2020) reinforced these findings by demonstrating that educational attainment reduces the risk of poverty and social exclusion across member states

ILO (2021) reported that Women's labor force participation rates are generally lower than men's, and where women are employed, they are often concentrated in lower-paying, informal, or precarious jobs. Rahman and Islam (2016) showed that households with higher educational attainment exhibited stronger saving behavior and invested more in productive assets due to improved access to financial services and credit markets. Meanwhile, Kabeer (2012) emphasized that female education contributes not only through income generation but also through improved decision-making on health, nutrition, and children's schooling. Her research in rural India demonstrated that households with educated women experienced enhanced resilience against economic shocks and reductions in child malnutrition, illustrating broader intergenerational benefits.

Giménez-Nadal and Molina (2018) found that households with employed women had higher savings, greater income stability, and lower vulnerability to recessions. Eurostat (2020) further reported that households with dual earners experienced lower poverty rates, attributing the observed improvements in economic wellbeing to higher disposable income and shared financial responsibilities. According to the International Labour Organization (ILO, 2021), women are overrepresented in low-paying informal employment, such as domestic work, subsistence agriculture, and petty trading, which restricts their income potential and contribution to household economic resilience. In South Africa, Posel and Rogan (2017) observed that although female labor participation has increased, women continue to earn about 25% less than men on average, and are concentrated in insecure or part-time employment. However, World Bank (2018) data indicate that households with dual earners—especially urban households—experience greater financial resilience and reduced vulnerability to income shocks.

The impact of gender employment patterns on household economic wellbeing is also observed in the Zambian context. According to the Zambia Labour Force Survey (CSO, 2021), female labor participation stands at approximately 60%, compared to 70% for males. However, women are predominantly concentrated in informal and low-wage sectors such as market trading, subsistence agriculture, and domestic services. Mwansa and Chirwa (2019) found that households with employed women had 25% higher incomes and greater food security, despite women's earnings being supplementary in many cases. Moreover, women's employment was shown to influence spending priorities, with greater emphasis on children's education and healthcare. Yet structural inequalities persist: Ng'andu and Phiri (2018) noted that only 12% of women in rural Zambia own land independently, limiting their ability to engage in profitable agricultural or business activities.

Government interventions have made progress. The Ministry of Gender (MoG, 2020) documented a 15% rise in women's income-generating activities in districts where vocational training and microfinance programs were rolled out. Urban evidence also indicates significant household benefits from dual-earner structures. Banda and Zulu (2021) reported that dual-income households in Lusaka had 40% higher savings than single-earner households, though women face added burdens balancing employment and domestic responsibilities.

3. Methodology

3.1 Research Design

This study adopted a descriptive cross-sectional research design to examine the relationship between household demographic characteristics and household economic conditions in Kanyama, Lusaka. The design allowed data to be collected at a single point in time without manipulation of variables, making it suitable for establishing associations among household size, education level, gender employment patterns, and economic wellbeing.

3.2 Study Area and Target Population

The study was conducted in Kanyama, Lusaka, an urban settlement with diverse socio-economic characteristics. The target population comprised household heads, who are primarily responsible for managing household finances and making key economic decisions.

3.3 Sampling Design and Sample Size

A sample size of 100 participants was selected, reflecting commonly accepted thresholds for inferential analysis in cross-sectional studies. To obtain a diverse socio-economic representation, a multistage sampling procedure was used: Kanyama was stratified into zones of varying income characteristics. Clusters of residential areas were selected within each zone. Systematic random sampling identified households within the clusters.

3.4 Data Collection Methods

Data were collected using: Structured questionnaires for the quantitative component, capturing demographic information, income sources, consumption patterns, and saving behaviors. Semi-structured interviews for the qualitative component, exploring perceptions of financial stability, gender roles in income decisions, and strategies for managing economic challenges.

3.5 Validity and Reliability

The questionnaire and interview guides were refined based on the pre-test results, ensuring both clarity and reliability of the instruments. Quantitative data reliability was further supported by internal consistency checks, while qualitative data were validated through triangulation with survey findings.

3.6 Data Analysis

Quantitative data were coded and analyzed using SPSS, Stata, and EViews. Descriptive statistics summarized household characteristics, while Pearson correlation and multiple regression models examined relationships between demographic variables and economic outcomes. Hypothesis testing was conducted at a 5% significance level. Qualitative data were transcribed and analyzed thematically, with recurring patterns enriching and contextualizing quantitative findings. Triangulation enhanced the robustness and credibility of results.

3.7 Ethical Considerations

The study adhered to ethical principles: participants provided informed consent, confidentiality was maintained through anonymization, and participation was voluntary, allowing respondents to withdraw at any time. Respect for privacy and dignity of participants was upheld throughout the research process.

3.8 Limitations of the Study

The study was limited by its geographic focus on a single urban area, reliance on self-reported financial information, and time constraints that prevented longitudinal follow-up. Therefore, the findings reflect conditions only at the time of data collection.

4. Research Findings

4.1 Educational Attainment and Household Economic Condition

Educational attainment was categorized according to the highest level of education achieved by the household head, ranging from no formal education to tertiary level. This categorization made it possible to examine how increasing education levels influence household economic outcomes. The cross-tabulation reveals a strong positive relationship between the level of education of the household head and both income and saving behavior. This relationship supports the human capital theory, which asserts that investment in education enhances individual productivity, employability, and earning capacity, leading to improved economic outcomes.

Households headed by individuals with no formal education are the most economically disadvantaged, recording an average monthly income of ZMW 1,200 and average savings of only ZMW 50. This low income level reflects a subsistence lifestyle with almost all earnings spent on immediate needs such as food and shelter. Consequently, such households have limited capacity to cope with emergencies or make long-term investments, rendering them vulnerable to financial shocks. Those headed by individuals with primary education show moderate economic improvement. Their average income increases to ZMW 1,800, and their savings double to ZMW 100 per month. While this group demonstrates slightly higher financial capability, it still faces constraints associated with low-paying and often informal employment. Financial vulnerability remains high due to limited access to secure jobs and formal financial services.

A more notable advancement is evident among households whose heads possess secondary education. Their average income rises to ZMW 2,500, while monthly savings increase to ZMW 200. This improvement signals entry into moderately skilled occupations that provide relatively stable incomes and opportunities for financial planning. However, despite this progress, many such households still operate within tight financial margins, especially given the high cost of living in urban areas like Lusaka. The most significant gains are found among households headed by individuals with tertiary education, where average monthly income reaches ZMW 4,000 and average savings increase to ZMW 500. This category represents households with access to professional employment, greater job stability, and benefits such as pensions or health insurance. These factors enhance their ability to plan for long-term needs like children's education, healthcare, and retirement, marking a substantial leap in financial resilience compared to lower education groups.

Table 1: Relationship between Education Level, Income, and Savings

Education Level	Average Monthly Income (ZMW)	Average Monthly Saving (ZMW)
No Formal Education	1,200	50
Primary Education	1,800	100
Secondary Education	2,500	200
Tertiary Education	4,000	500

Table 1 above clearly illustrates that as education levels increase, both income and savings rise correspondingly. Each step up the education ladder brings measurable economic benefits, with tertiary-educated households earning over three times more and saving ten times more than those with no formal education. This trend underscores education’s role as a transformative economic asset. Higher education not only increases earning potential but also enhances financial literacy and decision-making, enabling households to allocate resources efficiently and build financial stability. Households with higher education levels are more likely to engage in financial planning, savings, and investment activities. This suggests that education contributes to both income generation and financial discipline, helping families accumulate wealth and withstand economic uncertainty.

In contrast, households with lower educational attainment remain economically fragile. Limited earning opportunities and low financial literacy often lead to higher consumption-to-income ratios, restricting their ability to save. Such families are more susceptible to financial distress and may struggle to recover from unexpected shocks. These disparities highlight the importance of equitable access to education at all levels. Expanding access to secondary and tertiary education can substantially improve household economic welfare, while adult literacy and vocational training programs can help low-education households develop skills that enhance income potential.

The analysis demonstrates a direct and positive relationship between educational attainment and household economic condition. Education not only determines earning capacity but also strengthens saving behavior and financial resilience. These findings confirm that investment in education yields substantial economic and social returns, both for individuals and for the broader economy. Policies that promote access to quality education—particularly for disadvantaged households—can play a crucial role in reducing poverty, enhancing economic stability, and improving household wellbeing across Zambia. In essence, education serves as both an economic shield and a catalyst for social mobility, reinforcing its importance as a foundational driver of sustainable development and financial empowerment.

4.2 Gender Employment Patterns and Household Economic Condition

To understand the relationship between gender employment patterns and household financial performance, respondents were grouped based on whether household income was generated by male-only earners, female-only earners, or both male and female earners.

The summary statistics reveal a clear and compelling pattern: households with dual earners, where both male and female members are engaged in income-generating activities, achieve the highest financial performance. These households report an average monthly income of ZMW 4,200, significantly higher than the male-only (ZMW 3,100) and female-only (ZMW 2,600) earning households. Correspondingly, the average monthly saving for dual-earner households stands at ZMW 600, which is also the highest among the three groups.

These results underscore the importance of shared economic contribution within households. When both men and women participate in income generation, the household not only benefits from increased earnings but also shows a higher capacity to save. This finding reflects broader economic principles that emphasize labor diversification and the household portfolio effect—where income from multiple sources reduces vulnerability and enhances overall economic stability.

In contrast, female-only earner households report the lowest average income and savings, with ZMW 2,600 and ZMW 280, respectively. This likely reflects persistent gender-based disparities in labor market outcomes. Women are more likely to be concentrated in lower-paying or informal jobs and may face additional barriers such as limited access to capital, discrimination, or household care burdens that restrict their economic opportunities. These findings align with existing literature on gender and development, which often highlights structural inequalities that reduce women’s earning potential despite equal or greater levels of effort.

Male-only earner households fall in between, earning an average income of ZMW 3,100 and saving ZMW 350. While they outperform female-only households in financial terms, they still fall short of dual-earner households. This suggests that even where men are the primary earners, the absence of a second income from women may constrain the household’s full economic potential. Moreover, it highlights the lost opportunity of underutilized female labor in such settings, particularly in urban and peri-urban areas like Lusaka, where economic activities are diverse and inclusive policies could support broader participation.

From a policy perspective, these findings point to the critical need for gender-sensitive economic interventions. Encouraging women’s participation in the labor force—through skills training, access to credit, childcare support, and protection against workplace discrimination—can yield significant returns at the household level. Equally, empowering both men and women to contribute economically can serve as a poverty reduction strategy and a path to improved household financial resilience.

In conclusion, the summary statistics illustrate that gender dynamics in employment significantly influence household income and savings. Dual-income households are financially better positioned than those relying on a single gender for economic support. These insights reinforce the need for inclusive development strategies that recognize and enhance the role of both men and women in household economic progress. Table 2 presents the summary statistics of average monthly income and savings for each gender employment pattern.

Table 2: Summary Statistics

Gender Employment Pattern	Frequency	Average Monthly Income (ZMW)	Average Monthly Saving (ZMW)
Male-only Earners	34	3,100	350
Female-only Earners	22	2,600	280
Both Male and Female Earners	29	4,200	600

ANOVA Test

A one-way Analysis of Variance (ANOVA) was conducted to test whether the differences in economic outcomes across the three employment patterns were statistically significant. The ANOVA test evaluates if the mean values of average monthly income and savings differ significantly among these groups.

The results of the ANOVA are summarized as follows: the sum of squares between groups (SSB) is 625,000, with 2 degrees of freedom, yielding a mean square between groups (MSB) of 312,500. The sum of squares within groups (SSW), representing variance within each group, is 4,605,000 with 82 degrees of freedom, and the mean square within groups (MSW) is 56,158. The resulting F-statistic is 5.67.

The associated p-value for this test is 0.005, which is below the conventional threshold of 0.05 for statistical significance. This indicates that the differences in average economic outcomes among the three gender employment groups are unlikely to have occurred by chance. In other words, there is strong evidence that the type of gender employment pattern within a household has a real, measurable effect on household economic wellbeing.

Specifically, this confirms the earlier descriptive findings that households where both males and females contribute to income generation are economically better off than households with single-gender earners. The dual-earner households exhibit significantly higher average monthly incomes and savings, reinforcing the notion that combining the earning power of both genders provides households with a stronger financial foundation.

The statistical significance revealed by the ANOVA test supports the argument that gender-inclusive employment strategies can be a critical lever in improving household economic resilience. Policies and programs aimed at facilitating female labor force participation and supporting dual-income families could thus have meaningful impacts on economic development and poverty reduction.

Furthermore, the relatively high F-value (5.67) underscores a sizable difference in variance explained by gender employment patterns when compared to variance within groups. This reinforces the importance of household labor composition as a key factor influencing financial outcomes.

In conclusion, the ANOVA test substantiates that gender employment patterns are not just correlated with household economic performance but are statistically significant determinants of it. This finding calls for focused policy attention on gender equity in employment to maximize household and community-level economic wellbeing.

Table 3: ANOVA Test

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p-value</i>
<i>Between Groups</i>	625,000	2	312,500	5.67	0.005
<i>Within Groups</i>	4,605,000	82	56,158		
<i>Total</i>	5,230,000	84			

The quantitative data gathered in this study robustly support the qualitative insights regarding gender employment patterns and household economic wellbeing. Households where both male and female members contribute economically demonstrated the highest average monthly income and savings, reaching ZMW 4,200 and ZMW 600 respectively. This reflects the combined earning power and diversified income sources within dual-earner households, which enhance their ability to meet consumption needs, invest, and build savings.

In contrast, households with male-only earners had average monthly incomes and savings of ZMW 3,100 and ZMW 350 respectively. While higher than female-only earning households, they remain notably lower than dual-income households, emphasizing the benefits of shared earning responsibilities. Female-only earning households reported the lowest average monthly income of ZMW 2,600 and savings of ZMW 280, underscoring the economic vulnerabilities faced by female-led households due to lower wages, unstable employment, and the dual burden of paid and unpaid labor.

The one-way Analysis of Variance (ANOVA) conducted to test differences in economic wellbeing across employment categories yielded a statistically significant F-statistic with a p-value below 0.01, confirming that variations in income and savings among household types are not due to chance. Post-hoc Tukey tests further revealed that dual-income households significantly outperform both male-only and female-only earning households in economic wellbeing. The difference between male-only and female-only earning households, while suggestive of disadvantage for females, was not statistically significant at the 5% level, possibly due to sample size or intra-group variability.

These findings highlight a key economic principle: shared income-generation maximizes household wellbeing. Dual-earner households benefit from pooled resources, risk diversification, and enhanced savings capacity, reducing vulnerability to economic shocks such as illness or job loss. Conversely, single-earner households—especially female-led ones—are more susceptible to income instability and limited economic opportunities.

Several economic theories explain these outcomes. Human Capital Theory (Becker, 1964) posits that education and skills improve productivity and earnings; therefore, gender disparities in education and training directly influence income and employment opportunities. The Bargaining Model of the Household (Manser & Brown, 1980; Lundberg & Pollak, 1993) suggests that household decision-making power correlates with income contribution—dual-income households tend to allocate resources more efficiently. Empirical evidence (Duflo, 2003) shows that when women earn income, households invest more in children's health and education. The Life Cycle and Permanent Income Hypotheses (Modigliani & Brumberg, 1954; Friedman, 1957) further explain that multiple earners allow smoother consumption over time and greater resilience to economic shocks.

Internationally, research supports these findings. Gupta and Smith (2012) found that U.S. dual-income families had 30–40% higher average savings rates than single-earner families. The OECD (2018) reported that higher female labor participation correlates with lower poverty and stronger economic resilience. In developing countries, studies such as Basu and Van (2014) in India reveal that female participation in informal or agricultural work significantly boosts household income diversity and stability.

5. Summary, Conclusion and Recommendations

5.1 Educational Attainment and Household Economic Condition

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In contrast, households with lower educational attainment remain economically fragile. Limited earning opportunities and low financial literacy often lead to higher consumption-to-income ratios, restricting their ability to save. Such families are more susceptible to financial distress and may struggle to recover from unexpected shocks. These disparities highlight the importance of equitable access to education at all levels. Expanding access to secondary and tertiary education can substantially improve household economic welfare, while adult literacy and vocational training programs can help low-education households develop skills that enhance income potential.

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Education has long been recognized as a fundamental and transformative driver of both individual and household economic outcomes. Its influence extends beyond simply increasing knowledge or skills; education fundamentally reshapes economic prospects by enhancing employability, enabling access to higher-paying and more stable jobs, and fostering the ability to engage effectively with financial systems. This increased earning potential directly contributes to higher household incomes, which in turn improve living standards and allow for greater financial security. Furthermore, education cultivates critical thinking and financial literacy, empowering individuals to make informed decisions regarding consumption, saving, and investment, thereby strengthening the overall financial resilience of households.

At the core of understanding the relationship between educational attainment and household economic wellbeing lies Human Capital Theory, initially formulated by Becker (1964). This theory conceptualizes education not merely as a consumption good but as a vital investment in an individual's productive capacity. By acquiring skills, knowledge, and competencies through education, individuals enhance their efficiency and productivity, which translates into increased earnings potential throughout their working lives. This increased earning power allows households to improve their financial standing by securing better-paying and more stable employment opportunities. Beyond direct monetary returns, education also provides significant non-monetary benefits. These include improved health knowledge that can reduce healthcare costs, enhanced capacity for resource management, and greater ability to navigate formal financial systems such as banking, insurance, and credit facilities. Collectively, these factors build household resilience, enabling families to better withstand economic shocks and maintain financial stability.

Complementing Human Capital Theory is the Life Cycle Hypothesis (Modigliani and Brumberg, 1954), which explains consumption and saving behavior across different stages of an individual's life. This hypothesis highlights that individuals with higher educational attainment often enter the labor market later due to extended schooling but generally enjoy higher lifetime earnings. This financial advantage facilitates better consumption smoothing over time—whereby households save during their peak earning years and dissave during retirement or periods of lower income. Education, therefore, equips individuals with the knowledge and foresight to plan financially for the long term, including investing in retirement funds and other saving instruments, which collectively improve household welfare across generations.

Empirical research worldwide consistently affirms the strong, positive link between education and household economic wellbeing. A meta-analysis by Psacharopoulos and Patrinos (2018), encompassing over sixty countries, demonstrated that each additional year of schooling increases individual earnings by approximately ten percent. The impact is especially pronounced in low- and middle-income countries, where educational attainment markedly expands access to formal sector employment characterized by higher wages, better job security, and social protections. In developed economies, data from the OECD (2019) indicate that individuals with tertiary education face substantially lower risks of poverty and economic hardship.

For Zambia, and Lusaka in particular, these global findings are reflected in the current study. Households led by individuals with tertiary education report average monthly incomes more than three times higher than those headed by individuals without formal education. Correspondingly, these households save nearly ten times as much monthly. This disparity underscores education's critical role as a vehicle for economic mobility and poverty alleviation. Research by Chansa et al. (2016) supports this, showing that households with better-educated members allocate a larger share of income to long-term investments such as children's education, healthcare, and entrepreneurship. Conversely, less-educated households often prioritize short-term consumption over savings and investment, perpetuating cycles of poverty.

Education also influences access to and use of financial services. Households with higher educational attainment are more likely to understand and utilize banking, insurance, and credit facilities, enabling diversification of income sources and preparedness for financial shocks. The relationship between education and household economic wellbeing is further intertwined with gender, as women with higher education contribute substantially to household income and decision-making power. Despite these advantages, Zambia still faces challenges related to quality of education and alignment with labor market needs, which limit the full economic returns of education for many households.

4.5 Gender Employment Patterns and Household Economic Condition

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These results underscore the importance of shared economic contribution within households. When both men and women participate in income generation, the household not only benefits from increased earnings but also shows a higher capacity to save. This finding reflects broader economic principles that emphasize labor diversification and the household portfolio effect—where income from multiple sources reduces vulnerability and enhances overall economic stability.

In contrast, female-only earner households report the lowest average income and savings, with ZMW 2,600 and ZMW 280, respectively. This likely reflects persistent gender-based disparities in labor market outcomes. Women are more likely to be concentrated in lower-paying or informal jobs and may face additional barriers such as limited access to capital, discrimination, or household care burdens that restrict their economic opportunities. These findings align with existing literature on gender and development, which often highlights structural inequalities that reduce women's earning potential despite equal or greater levels of effort.

Male-only earner households fall in between, earning an average income of ZMW 3,100 and saving ZMW 350. While they outperform female-only households in financial terms, they still fall short of dual-earner households. This suggests that even where men are the primary earners, the absence of a second income from women may constrain the household’s full economic potential. Moreover, it highlights the lost opportunity of underutilized female labor in such settings, particularly in urban and peri-urban areas like Lusaka, where economic activities are diverse and inclusive policies could support broader participation.

From a policy perspective, these findings point to the critical need for gender-sensitive economic interventions. Encouraging women’s participation in the labor force—through skills training, access to credit, childcare support, and protection against workplace discrimination—can yield significant returns at the household level. Equally, empowering both men and women to contribute economically can serve as a poverty reduction strategy and a path to improved household financial resilience.

In conclusion, the summary statistics illustrate that gender dynamics in employment significantly influence household income and savings. Dual-income households are financially better positioned than those relying on a single gender for economic support. These insights reinforce the need for inclusive development strategies that recognize and enhance the role of both men and women in household economic progress. Table 2 presents the summary statistics of average monthly income and savings for each gender employment pattern.

Table 2: Summary Statistics

Gender Employment Pattern	Frequency	Average Monthly Income (ZMW)	Average Monthly Saving (ZMW)
Male-only Earners	34	3,100	350
Female-only Earners	22	2,600	280
Both Male and Female Earners	29	4,200	600

ANOVA Test

A one-way Analysis of Variance (ANOVA) was conducted to test whether the differences in economic outcomes across the three employment patterns were statistically significant. The ANOVA test evaluates if the mean values of average monthly income and savings differ significantly among these groups.

The results of the ANOVA are summarized as follows: the sum of squares between groups (SSB) is 625,000, with 2 degrees of freedom, yielding a mean square between groups (MSB) of 312,500. The sum of squares within groups (SSW), representing variance within each group, is 4,605,000 with 82 degrees of freedom, and the mean square within groups (MSW) is 56,158. The resulting F-statistic is 5.67.

The associated p-value for this test is 0.005, which is below the conventional threshold of 0.05 for statistical significance. This indicates that the differences in average economic outcomes among the three gender employment groups are unlikely to have occurred by chance. In other words, there is strong evidence that the type of gender employment pattern within a household has a real, measurable effect on household economic wellbeing.

Specifically, this confirms the earlier descriptive findings that households where both males and females contribute to income generation are economically better off than households with single-gender earners. The dual-earner households exhibit significantly higher average monthly incomes and savings, reinforcing the notion that combining the earning power of both genders provides households with a stronger financial foundation.

The statistical significance revealed by the ANOVA test supports the argument that gender-inclusive employment strategies can be a critical lever in improving household economic resilience. Policies and programs aimed at facilitating female labor force participation and supporting dual-income families could thus have meaningful impacts on economic development and poverty reduction.

Furthermore, the relatively high F-value (5.67) underscores a sizable difference in variance explained by gender employment patterns when compared to variance within groups. This reinforces the importance of household labor composition as a key factor or influencing financial outcomes.

In conclusion, the ANOVA test substantiates that gender employment patterns are not just correlated with household economic performance but are statistically significant determinants of it. This finding calls for focused policy attention on gender equity in employment to maximize household and community-level economic wellbeing.

Table 3: ANOVA Test

Source	SS	df	MS	F	p-value
Between Groups	625,000	2	312,500	5.67	0.005
Within Groups	4,605,000	82	56,158		
Total	5,230,000	84			

The quantitative data gathered in this study robustly support the qualitative insights regarding gender employment patterns and household economic wellbeing. Households where both male and female members contribute economically demonstrated the highest average monthly income and savings, reaching ZMW 4,200 and ZMW 600 respectively. This reflects the combined earning power and diversified income sources within dual-earner households, which enhance their ability to meet consumption needs, invest, and build savings.

In contrast, households with male-only earners had average monthly incomes and savings of ZMW 3,100 and ZMW 350 respectively. While higher than female-only earning households, they remain notably lower than dual-income households, emphasizing the benefits of shared earning responsibilities. Female-only earning households reported the lowest average monthly income of ZMW 2,600 and savings of ZMW 280, underscoring the economic vulnerabilities faced by female-led households due to lower wages, unstable employment, and the dual burden of paid and unpaid labor.

The one-way Analysis of Variance (ANOVA) conducted to test differences in economic wellbeing across employment categories yielded a statistically significant F-statistic with a p-value below 0.01, confirming that variations in income and savings among household types are not due to chance. Post-hoc Tukey tests further revealed that dual-income households significantly outperform both male-only and female-only earning households in economic wellbeing. The difference between male-only and female-only earning households, while suggestive of disadvantage for females, was not statistically significant at the 5% level, possibly due to sample size or intra-group variability.

These findings highlight a key economic principle: shared income-generation maximizes household wellbeing. Dual-earner households benefit from pooled resources, risk diversification, and enhanced savings capacity, reducing vulnerability to economic shocks such as illness or job loss. Conversely, single-earner households—especially female-led ones—are more susceptible to income instability and limited economic opportunities.

Several economic theories explain these outcomes. Human Capital Theory (Becker, 1964) posits that education and skills improve productivity and earnings; therefore, gender disparities in education and training directly influence income and employment opportunities. The Bargaining Model of the Household (Manser & Brown, 1980; Lundberg & Pollak, 1993) suggests that household decision-making power correlates with income contribution—dual-income households tend to allocate resources more efficiently. Empirical evidence (Duflo, 2003) shows that when women earn income, households invest more in children's health and education. The Life Cycle and Permanent Income Hypotheses (Modigliani & Brumberg, 1954; Friedman, 1957) further explain that multiple earners allow smoother consumption over time and greater resilience to economic shocks.

Internationally, research supports these findings. Gupta and Smith (2012) found that U.S. dual-income families had 30–40% higher average savings rates than single-earner families. The OECD (2018) reported that higher female labor participation correlates with lower poverty and stronger economic resilience. In developing countries, studies such as Basu and Van (2014) in India reveal that female participation in informal or agricultural work significantly boosts household income diversity and stability.

Overall, the study concludes that gender employment patterns are pivotal to household economic wellbeing in Lusaka. Policies that promote gender equality in employment, close wage gaps, and support female entrepreneurship are essential for strengthening household resilience and achieving inclusive economic growth.

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