



Received: 14-02-2025
Accepted: 24-03-2025

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Analyzing the effects of demographic factors on household consumption pattern in Mufulira District

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DOI: <https://doi.org/10.62225/2583049X.2025.5.2.4002>

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Abstract

The background of the study is based on the Zambia National Census of Population and Housing (2010) [6], Mufulira district of Copperbelt experienced rapid urbanization, with an urban population growth rate of 4.4% per annum between 2000 and 2010. This growth has significant implications for household consumption patterns, as urbanization often correlates with changes in lifestyle, income levels, and expenditure patterns. Education allows marketers, to tailor products and services to meet the specific needs and preferences of different consumer) The problem at hand was to analyse the effects of demographic factors on household consumption pattern in Mufulira District. The three specific objectives were to analyse the effects of age structure on household consumption patterns in Mufulira district. To assess the effects of household family size on household consumption patterns in Mufulira District. To assess the effect of educational levels on the household consumption patterns in Mufulira. The theoretic framework used was the Life Cycle Hypothesis, developed by Modigliani and Brumberg, posits that individuals plan their consumption and savings behavior over their lifetime based on expected income. The case study design was used with target population of Mufulira District and 50 respondents aged 18 years and above with a simple random sampling technique in order to reduce biasness. Linear regression analysis was used to test the hypothesis and also the correlation among the four variables. Not only that but also both the qualitative and quantitative approaches were

employed with structured questionnaire as a tool for data collection, and confidentiality was maintained during data collection. Results showed that Family size influences household consumption and family size is really key in determining consumption in every age category. The regression model was significant based on the p-value of less than 0.05 level of significance across age structures. In conclusion, the study showed that a relationship exists among the three variables of study which are consumption, family size and education level except, education had no influence on consumption levels. However, across all the age structures, educational level when the one way Anova was done by sorting the age structure on effect of consumption on education, it indicated no significance as the f statistics were very low and the p values were greater than 0.05. So education is not significant in determining household consumption. The recommendations were to Strengthen social protection programs to provide vulnerable households with access to basic necessities and financial support during times of crisis. Enhance access to education and skills training opportunities to empower residents to secure stable employment and increase their earning potential. Promote sustainable livelihoods by supporting small businesses, cooperatives, and community-based enterprises in Mufulira District. Collaborate with local stakeholders, NGOs, and government agencies to implement targeted interventions that address the unique needs of low-income households in the community.

Keywords: Household, Demographics, Consumption Patterns, Age Structures, Mufulira

1. Introduction

1.1 Background of the Study

Household consumption patterns are heavily influenced by demographic factors, including age, family size, income levels, and urbanization. In Asian countries, where economies are rapidly evolving, these factors play a pivotal role in shaping consumer behavior and economic development. For instance, aging populations in Japan and South Korea contrast with younger, growing populations in South Asia, leading to varying spending priorities on healthcare, education, and luxury goods (Park &

Shin, 2020)^[1]. Urbanization has also contributed to a shift from traditional to modern consumption patterns, driven by access to better infrastructure and increased incomes (UNESCAP, 2019)^[2].

Above all, Sub-Saharan Africa is experiencing rapid population growth and urbanization, which have profound implications for household consumption patterns. The region's population is expected to double by 2050, with urban areas experiencing the fastest growth rates (United Nations, 2019)^[3]. Urbanization often leads to changes in lifestyle, employment status, and consumption preferences, as urban dwellers tend to have different consumption patterns compared to rural populations (Fox & Moini-Araghi, 2016)^[4]. As countries undergo demographic transitions, there are shifts from larger extended families to smaller nuclear families or even single-person households. These changes impact consumption patterns, with implications for the types of goods and services households prioritize (Caldwell, 2001)^[5]. Moreover, demographic insights enable businesses to anticipate changes in consumer demand and adjust their marketing efforts accordingly, thereby enhancing their competitiveness in the market. Mufulira District is characterized by dynamic population dynamics, driven primarily by economic activities such as mining and a bit of agriculture. According to the Zambia National Census of Population and Housing (2010)^[6], the district experienced rapid urbanization, with an urban population growth rate of 4.4% per annum between 2000 and 2010. This growth has significant implications for household consumption patterns, as urbanization often correlates with changes in lifestyle, income levels, and expenditure patterns (World Bank, 2018). Education allows marketers to tailor products and services to meet the specific needs and preferences of different consumer groups (Kotler & Keller, 2016)^[8]. Moreover, demographic insights enable businesses to anticipate changes in consumer demand and adjust their marketing efforts accordingly, thereby enhancing their competitiveness in the market. Above all, Sub-Saharan Africa is experiencing rapid population growth and urbanization, which have profound implications for household consumption patterns. The region's population is expected to double by 2050, with urban areas experiencing the fastest growth rates (United Nations, 2019)^[3]. Urbanization often leads to changes in lifestyle, employment status, and consumption preferences, as urban dwellers tend to have different consumption patterns compared to rural populations (Fox & Moini-Araghi, 2016)^[4]. As countries undergo demographic transitions, there are shifts from larger extended families to smaller nuclear families or even single-person households. These changes impact consumption patterns, with implications for the types of goods and services households prioritize (Caldwell, 2001)^[5]. Moreover, demographic insights enable businesses to anticipate changes in consumer demand and adjust their marketing efforts

1.2 Statement of the problem

The problem at hand was to analyse the effects of demographic factors on household consumption pattern in Mufulira District. The increasing diversity of household demographics in Zambia characterized by varying age structures and household size, employment status and dependency ratio poses a challenge for policy makers and businesses seeking to understand and cater to the complex

consumption needs of different demographic group. Understanding how demographic factors influence household consumption patterns is essential for effective policymaking, resource allocation, and market targeting. While there is existing research on household consumption patterns, there is a need for a comprehensive analysis that specifically examines the influence of demographic factors. This study aims to address this gap by investigating how demographic factors such as age, family size and education levels impact household consumption patterns. This case study aims to investigate the effects of demographic factors on household patterns in Mufulira. Research by Chanda and Phiri (2019)^[9] suggests that income inequality in Zambia has widened in recent years, leading to disparities in consumption patterns between affluent urban households and rural communities. Urban households tend to spend more than rural dwellers. A study by Tembo and Simwanza (2020)^[10] revealed that urban households in Zambia tend to spend more on housing, food, and entertainment compared to rural households, reflecting the influence of urbanization on consumption behaviors. groups (Kotler & Keller, 2016)^[8] Population growth can also lead to cultural shifts that influence household consumption patterns in Zambia, including changes in dietary preferences, leisure activities, and lifestyle choices. Kemi & Dayo (2014)^[11] argued that low education has negative relationship with economic growth. Hence, change in aggregate demand leads to change in industrial production pattern that in turn result to change in labor demand which alters educational levels of a country. A study by Mwale and Kabwe (2018)^[12] found that Zambia's youthful population contributes to a higher demand for education, healthcare, and consumer goods, shaping household consumption preferences and expenditure patterns therefore the educational status of the population has an impact in the consumption pattern of the household. However, across the globe, debate on the economic and social implications of population aging is intensifying among policymakers and public and private sectors (Beard, *et al.*, 2012^[13], 2016; Fried, 2016; Goldman, *et al.*, 2018). Aging populations impact productivity, labor markets, health, social security systems, social cohesion, and societal development. Efforts to understand and respond to key challenges and opportunities of population aging have become central concerns in high-income countries and emerging economies in Europe, Northern America, Asia, and Latin America (Olshansky, Goldman, and Rowe, 2015)^[14]. Demographic transitions such as changing family structures, educational attainment levels, and occupational patterns further influence household consumption behaviors in Mufulira District. The transition from traditional extended families to nuclear or single-person households, for instance, alters consumption dynamics, affecting both the composition and allocation of household expenditures (Gauthier & Hatzius, 1997)^[15]. For marketers and businesses operating in Mufulira District, understanding demographic factors is paramount for developing effective marketing strategies. Consumer segmentation based on demographic variables such as age, educational levels and family size.

1.3 Objectives

1.3.1 The purpose of this study was to analyse the effects of demographic factors on household consumption pattern in Mufulira District.

1.3.2 Specific Objectives

The specific objectives of the study were;

1. To analyse the effects of age structure on household consumption patterns in Mufulira district.
2. To assess the effects of household family size on household consumption patterns in Mufulira District.
3. To assess the effect of educational levels on the household consumption patterns in Mufulira.

1.4 Theoretical framework

Life cycle hypothesis was the theoretic framework used because it proposes that the household goes through various life cycles which includes, young single, young married with no children, married with children, mid-aged with dependent children, older with dependent children and retired. Each life cycle stage is associated with a different kind of consumption patterns influenced by either the dependency ratio, age structure, household size or the employment status. The Life Cycle Hypothesis, developed by Modigliani and Brumberg, posits that individuals plan their consumption and savings behavior over their lifetime based on expected income. In this context, demographic factors such as age and household composition significantly influence consumption decisions. For example, younger households may spend more on education and housing, while older households prioritize healthcare and savings (Ando & Modigliani, 1963) [17]. This theory underpins the role of age structure in shaping consumption patterns across different households.

2. Literature Review

2.1 Effects of age structure on household consumption patterns

Canada has experienced steady population growth over the years, driven primarily by natural increase and immigration. According to Statistics Canada (2020) [18], the country's population increased by 1.4% from 2018 to 2019, reaching a total of 37.6 million. This growth has implications for household consumption, as changes in age structure and composition influence demand for goods and services.

Age structure can affect the household consumption patterns in various ways including changes in the eating patterns such as the younger tend to eat outside and far from home (Landenberg *et al* 2017) [19]. This adds an extra on the household expenditures therefore affecting the income distribution and cultural shifts.

2.2 Effects of household family size on consumption patterns

For a demographic factor such as the household size has a large impact on the household consumption patterns. Garcia (2017) suggested that large household size has high demand for household durables. There is higher expenditure on education and children including the consumption of food and utilities compared to a smaller household size.

The smaller household size enjoys savings and spends less on healthcare, food and education. However, most spending is done in entertainment, travelling and luxury goods and services (Ladenburg 2017). There is also increased demand for convenience and ready to eat food. Larger family sizes are often associated with reduced investments in education per child. Resource constraints in large families lead to trade-offs, where parents may prioritize the education of a few children or limit overall educational spending. This

phenomenon has been extensively documented in both developed and developing countries (Black *et al.*, 2005) [20]. Larger family sizes often face greater food insecurity due to the strain on limited household resources. Studies show that larger households are more likely to allocate resources to low-cost, calorie-dense foods, leading to reduced dietary diversity and heightened risks of malnutrition (Drammeh *et al.*, 2019) [21]. Smaller households, in contrast, often achieve better nutritional outcomes, as resources are distributed among fewer individuals.

2.3 Effects of education on household consumption patterns

According to a report by the World Bank (2018), nearly 30% of school-age children in Haiti do not attend school, with poverty being a significant barrier to education. Children from low-income households are more likely to drop out of school due to the inability to pay for school fees, uniforms, and textbooks (Kang *et al.*, 2017). Moreover, inadequate funding of schools by the government results in poorly resourced schools, particularly in low-income areas, where there are inadequate teachers, teaching materials, and poor infrastructure (World Bank, 2018). According to the World Health Organization (WHO) (2019), Haiti has one of the lowest life expectancies in the Western Hemisphere, partly due to inadequate access to healthcare. Households with lower incomes have limited access to healthcare facilities, particularly in rural areas, where there are few hospitals and health centers (Kang *et al.*, 2017). Moreover, households with lower incomes are less likely to seek medical attention due to the inability to pay for healthcare services, resulting in poor health outcomes.

3. Research Methodology

3.1 Overview

This chapter outlined the research design, target population, sample design, sample size determination, data collection methods, data analysis, triangulation, limitation and ethical considerations.

3.2 Research design

This study adopted the case study research design. Case study design was explained by Nwogu (2001) [23] as a procedure used in obtaining information from a sample or relevant population that is familiar with the ideas relating to the objectives of the study. In the opinion of Maxwell (2012) [24], case design is one that studies large or small populations by selecting and Analyzing (sample) data collection from telephone or personal interviews. The case study research design was used to collect data, Al-khatib, (2015) [25] further defines A case study as a research method that involves an in-depth and detailed examination of a particular individual, group, organization, event, or phenomenon. In a case study, the researcher collects and analyzes data from various sources such as interviews, observations, documents, and artifacts to gain a holistic understanding of the case under investigation. The focus is on exploring the unique characteristics, behaviors, experiences, and relationships within the case. The purpose of a case study is to generate rich and detailed insights rather than providing generalized findings. It allows researchers to explore complex issues, identify patterns, and develop in-depth explanations or theories. Case studies are often used when existing literature is limited, when the research topic is

unique or context-specific, or when the researcher wants to investigate a phenomenon in its natural setting. The findings of a case study are typically presented in a narrative format, providing a detailed account of the case, the research process, the data analysis, and the researcher's interpretations. The aim is to provide a comprehensive and contextually rich understanding of the research topic.

The nature of the study requires information which is quantitative. The researcher chose to use a case study design in this study for several justifications. A case study design allows for a comprehensive and detailed examination of a specific context or phenomenon. By focusing on the Mufulira District, the researcher can gain a deeper understanding of the relationship between household income and living conditions in a specific geographic area. Case studies are effective in capturing the complexities and nuances of real-life situations. By conducting a case study in Mufulira District, the researcher can explore the unique socio-economic and cultural factors that influence demographic factors and consumption patterns in that specific context. Case studies offer the opportunity for rich data collection through various methods such as interviews, observations, and document analysis. These methods Larger family sizes often face greater food insecurity due to the strain on limited household resources. Studies show that larger households are more likely to allocate resources to low-cost, calorie-dense foods, leading to reduced dietary diversity and heightened risks of malnutrition (Drammeh *et al.*, 2019) [21]. Smaller households, in contrast, often achieve better nutritional outcomes, as resources are distributed among fewer individuals.

enable the researcher to gather detailed and diverse data from multiple sources, providing a comprehensive view of the research topic. The case study design allows for the examination of multiple variables and their interrelationships within a specific setting. a case study in Mufulira District holds practical relevance for policymakers, development organizations, and stakeholders who are directly involved in addressing the challenges faced by households with lower incomes. The findings of the study can provide valuable insights and inform the design and implementation of targeted interventions and policies specific to the context of Mufulira District. The research topic is relatively unexplored or lacks extensive existing literature, a case study design is suitable. In this case, by investigating the effects of demographic factors on consumption patterns in Mufulira District, the researcher can contribute to the existing body of knowledge on the subject.

3.3 Target population

Caceres (2014) [27] defines population as all the items or people under considerations. According to Uma (2007) [26], the population is referred to as the totality of the items or object which the researcher is interested in. It can also be the total number of people in an area of study. For this study, the target population was the households of Mufulira district. The study involved and targeted males and females of 18 years of age and above in Mufulira district. As such the target population was the people in Mufulira district.

3.4 Sampling design

In determining those that make up the sample size, the researcher used Simple Random Sampling (SRS) using the

consulting technique. This was to ensure that all the members of the population have equal opportunity of being selected into the sampled unit (Mill, 2018) [28]. Both Interview and questionnaire methods were used to collect data (Roa, 2014) [29].

The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses (Gujarati, 2010) [30]. This method was used through personal and telephone interviews. Both structured and unstructured questions were administered to the respondents. The questions were open and flexible so as to allow greater opportunity for an individual. A set of predetermined questions were used to guide the respondent in order to provide the necessary information to meet the research objectives. The questions were distributed to respondents of Mufulira district.

Questionnaires method of data collection is quite popular, particularly in case of enquires. It is being adopted by private individual's research workers, private and public organizations and even by governments. In this method, questionnaires were sent to the person's concerned with a request to answer the questions and turn to the questionnaires. A questionnaire consists of number of questions printed or typed in a definite order on a form or set of forms. The respondents had to answer the questions on their own.

3.5 Sample size determination

Sample size refers to the number of items to be selected from the universe to constitute the sample, and this answer how many sampling units should be surveyed and interviewed (Kothari 2010). Large sample give more reliable results than small samples. The sample size of fifty (50) in number was used.

3.6 Data collection methods

The major source of data in this work was mainly through primary and secondary sources of data collection. The primary sources are data collected at first hand from original sources for the user's express purpose. Such data are usually collected from oral interview, questionnaires and face to face observation of the respondents. The secondary data are simple data collected on a secondhand base. This type of data was obtained through the use of textbooks, seminar papers, journals, newspapers, internet and magazines collected mostly from university, public and specialized libraries (Gujarati, 2010) [30].

The research study employed the combination of different data collection methods. This included primary data and secondary data collection method. This enhanced the validity and reliability of data. Secondary data may either be published or unpublished data. Usually published data are available in various publications of the central state or local government or various publications of foreign governments or international bodies and their subsidiaries organizations, technical and trade journals, books magazines and newspapers, reports and publications of various associations connected with business and industries, banks, stock exchanges etc. Report prepared by research scholars, universities, economists etc. (Leo, 2019) [31]. In this work, the researcher used many books, minimum wage policy and other important articles to collect data.

3.7 Data analysis

The collected data was analyzed using statistical software. Descriptive statistics was used to summarize the characteristics of the sample population. Inferential statistics, such as regression analysis, was employed to examine the relationship between demographic factors and consumption patterns. The data collected was both qualitative and quantitative in nature, however, data processing and analysis included computation, classification and tabulation to enable the analysis to be done well. Quantitative data was presented using descriptive statistic methods including table and charts. Qualitative techniques were used to analyze qualitative data from the views of respondents. This increased the validity and reliability of information (Leo, 2011).

3.8 Triangulation

Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena (Patton, 2019) [32]. Triangulation also has been viewed as a qualitative research strategy to test validity through the convergence of information from different sources. Denzin (1978) [33] and Patton (1999) identified four types of triangulations: (a) method triangulation, (b) investigator triangulation, (c) theory triangulation, and (d) data source triangulation. This research presented the four types of triangulations followed by a discussion of the use of focus groups (FGs) and in-depth individual (IDI) interviews as an example of data source triangulation in qualitative inquiry.

3.9 Limitations of the study

Financial limitation and also combining theory into practice needed extra effort.

3.10 Ethical considerations

The researcher protected the anonymity and confidentiality of individuals who participated in the answering of the questionnaire and assurance was given that the information given is confidential and strictly used for academic purposes. The other ethical consideration was informing the respondents about the purpose for the study to obtain an informed consent before the interview. Ethics are important in research in order to protect people who participate in the research from psychological and physical harm.

4. Model and Data Specificication

The main objective of this empirical investigation was to Analyze the effect of demographic factors on consumption patterns.

According to Sala-i-martin (1997) [34], “economic theories are not sufficient to pinpoint the precise determinants of household living conditions. As a solution for this problem, they suggested a cross-sectional regression model of the form: -

$$\gamma = \alpha + \beta_1x_1 + \beta_2x_2 + \dots + \beta_nx_n + \varepsilon$$

Where γ is the dependent variable, Consumption patterns and x_1, \dots, x_n are explanatory variables which can vary from researcher to researcher.” “The methodology usually used by empirical household Demographic analysts consists of simply “trying” the variables that are thought to be

potentially vital determinants of household consumption patterns.” Based on the above stated suggestions, this study uses Consumption(C), education levels (EL), family size (FL), and Age (A).

Following the advantages suggested by Baltai, the study uses panel data, as they give “More informative data, more variability, less collinearity among variables and more degrees of freedom and more efficiency”.

The General econometric model for the study is:

$$y = \beta_0 + \beta_1 \text{ family size} + \beta_2 \text{ education levels} + \beta_3 \text{ age} + u$$

Consumption(C), Family size(FS), Education levels (EL), employment levels (EL), gender(G) and age (A).

4.1 Overview

This described the background characteristics of respondents, presentation of results from objectives, discussion of research findings, conclusion and recommendations. The study requested respondents to indicate their province, and it was found that 100% of the majority respondents indicated they come from Copper-belt Province. The study requested respondents to indicate their district, and it was found that 100% of the majority respondents indicated that they come from Mufulira District. This information implies that the data collected in this study is solely representative of individuals residing in Mufulira District. This data is crucial for clear and effective communication in reports or studies, allowing for easy comparison and analysis of different regions within the province and can be essential for decision-making and further research.

4.2 presentation of background characteristics of the respondent

Table 4.1: Provide results on the characteristics of the respondent

residential area 1. low density 2. high density	house head			Total
	Younger	Middle	Older	
1	6	8	7	21
2	9	9	11	29
Total	15	17	18	50

The data presented in the table categorizes households based on the density of their residential area and the age group of the house heads. The table distinguishes between low-density and high-density residential areas and further breaks down the data into three age groups: younger, middle, and older. The totals for each category are also provided. Specifically, the table shows that in low-density areas, there are 6 younger, 8 middle-aged, and 7 older house heads, totaling 21. In high-density areas, there are 9 younger, 9 middle-aged, and 11 older house heads, totaling 29. The overall total across both residential densities is 50 house heads. This structured presentation of data is essential for urban planning and demographic studies, as it allows for a clear comparison of household distributions across different residential densities and age groups.

house head	highest qualifications				Total
	1	2	3	4	
Younger	2	4	4	5	15
Middle	3	5	6	3	17
Older	8	3	3	4	18
Total	13	12	13	12	50

Figure 4.1:

Based on Table 4.1 provides an overview of the highest qualifications attained by household heads across three age groups: Younger, Middle, and Older. The Younger group has a total of 15 individuals, with the highest number (5) holding Qualification 4. The Middle group comprises 17 individuals, with the majority (6) having Qualification 3. The Older group, totaling 18 individuals, shows a significant concentration (14) with Qualification 4. Overall, the data reveals that out of 50 household heads, the distribution of qualifications is fairly balanced, with each qualification level having between 12 and 13 individuals, except for Qualification 4, which is notably higher in the older age group. This distribution highlights trends in educational attainment among different age demographics within the sample.

4.3 Presentation of results on the effects of education level on household consumption pattern

Table 4.4 of the result of the effects of education on household consumption patterns

house head	A4. Education level of household head (in years of formal education)				Total
	Never bee	Primary	Secondary	Tertiary	
Younger	5	4	2	4	15
Middle	6	4	6	1	17
Older	3	6	6	3	18
Total	14	14	14	8	50

Based on Figure 4.1.2 provides data on the education levels of household heads, categorized by age groups: Younger, Middle, and Older. The education levels are divided into four categories: Never been to school, Primary, Secondary, and Tertiary. For the Younger age group, there are 5 household heads who have never been to school, 4 with primary education, 2 with secondary education, and 4 with tertiary education, totaling 15. In the Middle age group, there are 6 household heads who have never been to school, 4 with primary education, 6 with secondary education, and 1 with tertiary education, totaling 17. For the Older age group, there are 3 household heads who have never been to school, 6 with primary education, 6 with secondary education, and 3 with tertiary education, totaling 18. Overall, the total number of household heads is 50, with 14 having never been to school, 14 with primary education, 14 with secondary education, and 8 with tertiary education.

This data highlights the distribution of educational attainment among household heads across different age groups, showing a balanced spread across the categories,

with a slightly lower number in the tertiary education category.

```
. tab a4maritalstatus
```

A4. marital status?	Freq.	Percent	Cum.
divorced	3	6.00	6.00
married	31	62.00	68.00
single	13	26.00	94.00
widow	2	4.00	98.00
widower	1	2.00	100.00
Total	50	100.00	

Figure 4.1.3:

The results showed that out of the 50 respondents, 3 were divorced making 6%, 31 were married making 62%, 13 were single making 26%, 2 were widows Making 4% and 1 was a widower making 2%.

4.4 Presentation of results on the effects of age structure on household consumption patterns

Table 4.2: Provide results on age structure and consumption

```
. oneway Consumption ageGroup
```

Source	Analysis of Variance				
	SS	df	MS	F	Prob > F
Between groups	1813.02142	3	604.340474	4.55	0.0072
Within groups	5974.75119	45	132.772249		
Total	7787.77261	48	162.245263		

Bartlett's test for equal variances: chi2(2) = 1.4525 Prob>chi2 = 0.484

note: Bartlett's test performed on cells with positive variance:
1 single-observation cells not used

A one way Anova test was done on effect of consumption on age structure of household heads and based on the results shown on the diagrammatic presentation of the data, the f-statistics of 4.55 is significant as it shows that the means of the two variables or groups is not the same. Above all, the probability value of 0.0072 is less than the 5% conversional level implying the significance of age structure of house hold head in the determination of household consumption.

Hypothesis

Null Hypothesis(H0): the means of the two groups are the same and age structure of household heads does not influence consumption.

Alternative Hypothesis(Ha): it suggests that means of the two groups are different and age structure of household heads determines the household consumption. Conclusion of this result is that we reject the null hypothesis and accept the alternative hypothesis since looking at the f-statistics of 4.55, the means of the two groups are not the same. also the

probability is less than 0.05 implying significance of age structure of household heads in determination of household consumption. Since the Bartlett’s test for equal variance is not significant, that gives more confidence that indeed household heads age structure determines household consumption.

4.5 presentation of results on the effects of family size on household consumption.

Table 4.3 provides results on family size on household consumption patterns.

The model used in this study was simple linear regression where the effect of family size on consumption was done. The equation of the model came out as $y = b_0 + b_1X_1 + u$ where y is the dependent variable consumption and the x_1 represents the family size. The error term u as well as the b_0 which is a constant and b_1 constant for the independent variable. The results are displayed as below on the Stata test

```
. reg Consumption FamilySize
```

Source	SS	df	MS	Number of obs =	50
Model	20301891.9	1	20301891.9	F(1, 48)	= 145.15
Residual	6713903.86	48	139872.997	Prob > F	= 0.0000
				R-squared	= 0.7515
				Adj R-squared	= 0.7463
Total	27015795.8	49	551342.772	Root MSE	= 374

Consumption	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FamilySize	328.1804	27.24026	12.05	0.000	273.4101 382.9506
_cons	1270.54	128.5209	9.89	0.000	1012.132 1528.949

The equation of the Model in the appeared as $Y = 1270.54 + 328.1804X_1 + U$. the results showed that 75% of information was explained by the model or dependent variable while the remaining 25% was explained by other variables. One-unit increase in family size consumption increases by 328.18 and the relationship is very strong and positive. Above all, since the p value is less than the 0.05 conversional level, the model was significant and educational level helps in determining consumption levels.

Hypothesis testing:

Null hypothesis(H0): this states independence or family size does not determine consumption. Alternative Hypothesis(H1): family size affect consumption levels Since F-statistics $145.15 > 0.05$, the test was significant and also the p value is less than the 0.05 alpha level. Hence family size impacts the consumption.

```
--> agestructure1835young3655 = Middle
```

Source	SS	df	MS	Number of obs =	18
Model	97098882.9	1	97098882.9	F(1, 16)	= 438.11
Residual	3546117.05	16	221632.316	Prob > F	= 0.0000
				R-squared	= 0.9648
				Adj R-squared	= 0.9626
Total	100645000	17	5920294.12	Root MSE	= 470.78

Consumption	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FamilySize	1048.773	50.10613	20.93	0.000	942.5526 1154.993
_cons	-352.6746	256.3097	-1.38	0.188	-896.0269 190.6777


```
--> agestructure1835young3655 = Older
```

Source	SS	df	MS	Number of obs =	13
Model	67331947.2	1	67331947.2	F(1, 11)	= 77.76
Residual	9524975.88	11	865906.899	Prob > F	= 0.0000
				R-squared	= 0.8761
				Adj R-squared	= 0.8648
Total	76856923.1	12	6404743.59	Root MSE	= 930.54

Consumption	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FamilySize	838.8264	95.12553	8.82	0.000	629.4565 1048.196
_cons	292.2026	554.0446	0.53	0.608	-927.2413 1511.646


```
--> agestructure1835young3655 = Young
```

Source	SS	df	MS	Number of obs =	18
Model	105069439	1	105069439	F(1, 16)	= 248.65
Residual	6761005.53	16	422562.846	Prob > F	= 0.0000
				R-squared	= 0.9395
				Adj R-squared	= 0.9358
Total	111829444	17	6578202.61	Root MSE	= 650.05

Consumption	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FamilySize	975.1131	61.83929	15.77	0.000	844.0197 1106.207
_cons	-168.6777	373.0344	-0.45	0.657	-959.4754 622.1199

Fig 4.1.4:

The regression analysis was done in which the age structures were by sorted into three categories of 18-35 years as young,36-55 as middle age and 56-100 as older people and they were regressed against consumption and family size. As shown above. For the middle age group of 36-55 years old of the household heads, the regression results indicate significance of the model as the p-value of 0.00 was less than 0.05 conversional level. A single person increases in the family increases consumption by 1048.773 keeping other variables constant in the young and older age structure categories. Above all, the r^2 was 97% implying significance of the model. For the older age group of 56-100 years old of the household heads, the regression results indicate significance of the model as the p-value of 0.00 was less than 0.05 conversional level. An additional person in the family within older structure of between 56 -100 years old increases consumption by 838.8264.773 keeping other variables constant in the young and middles age structure categories. Above all, the r^2 was 86% implying significance of the model. For the young age group of 56-100 years old of the household heads, the regression results indicate significance of the model as the p-value of 0.00 was less than 0.05 conversional level. An additional person in the family within older structure of between 18-35 years old

increases consumption by 975.11 keeping other variables constant in the older and middle age structure categories. Above all, the r^2 was 94% implying significance of the model.

Hypothesis testing:

Null hypothesis(H0): family size and consumption are independent across age structures

Alternative hypothesis: (Ha) the family size and consumption across three categories of age structures are not independent.

Family size influences household consumption and family is really key in determining consumption in every age category. The model was significant based on the p-value of less than 0.05 level of significance across all categories of age structures.

-> agestructure1835young3655 = Young					
Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	9010158.73	2	4505079.37	0.66	0.5326
Within groups	102819286	15	6854619.05		
Total	111829444	17	6578202.61		
Bartlett's test for equal variances: chi2(2) = 0.3439 Prob>chi2 = 0.842					
-> agestructure1835young3655 = Older					
Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	8426506.41	2	4213253.21	0.62	0.5595
Within groups	68430416.7	10	6843041.67		
Total	76856923.1	12	6404743.59		
Bartlett's test for equal variances: chi2(2) = 0.2411 Prob>chi2 = 0.886					
-> agestructure1835young3655 = Middle					
Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	1262878.79	2	631439.394	0.10	0.9096
Within groups	99382121.2	15	6625474.75		
Total	100645000	17	5920294.12		
Bartlett's test for equal variances: chi2(2) = 0.5357 Prob>chi2 = 0.765					

Across all the age structures, educational level when the oneway Anova was done by sorting the age structure on effect of consumption on education, it indicated no significance as the f statistics were very low and the p values were greater than 0.05. So education is not significant in determining household consumption.

4.6 Discussion of research Findings/Results

Consumption is a significant component of household economic activity and plays a crucial role in determining the overall economic well-being of individuals and families. In

developing countries like Zambia, where a large proportion of the population resides in poverty-stricken areas such as urban slums, understanding the dynamics of household consumption patterns becomes particularly important. This research aims to examine the effects of household demographic patterns on consumption in Mufulira District, one of the poorest informal settlements in Zambia. The study explored how varying family size, education status and age structures influence household consumption practices in this community. The research findings highlight the complex interplay between household economic conditions, consumption patterns, savings behavior, investment decisions, and demographic situations in Mufulira District. The results underscore the importance of addressing economic inequalities and providing support for households to improve their financial stability and well-being. Future interventions should focus on promoting savings culture, providing access to financial education, and creating opportunities for income generation within the community. Hence the relationship among the four variables existed and family size, education levels and age are key in determining household consumption patterns. The findings of this research are expected to contribute to the existing literature on poverty and consumption in developing countries, particularly in urban slum settings. By shedding light on the factors that shape consumption behavior in low-income households, this study has the potential to inform policy decisions aimed at improving the economic well-being of marginalized communities like Mufulira District.

We discussed the implications and meaning of the findings obtained from the data analysis. We explored the patterns and relationships identified in Chapter Four, drawing on relevant literature and theories. We provided explanations for the results, discussed their significance, and offered possible explanations for any unexpected findings. The total number of respondents in this survey is 50. The survey found that 58% of the respondents identified as males, while 42% identified as females. This indicates a higher percentage of male respondents than female respondents in the sample, suggesting a gender imbalance that may affect the representativeness of the results. The study examined the age distribution of respondents. The primary finding is that the largest group of respondents falls within the age range of 35-44 years, representing 40% of the total. There is also a significant concentration of respondents in the 55 and above category, while the younger age groups (18-24 and 25-34) have smaller proportions of respondents.

Based on Table 4.1 provides an overview of the highest qualifications attained by household heads across three age groups: Younger, Middle, and Older. The Younger group has a total of 15 individuals, with the highest number (5) holding Qualification 4. The Middle group comprises 17 individuals, with the majority (6) having Qualification 3. The Older group, totaling 18 individuals, shows a significant concentration (14) with Qualification 4. Overall, the data reveals that out of 50 household heads, the distribution of qualifications is fairly balanced, with each qualification level having between 12 and 13 individuals, except for Qualification 4, which is notably higher in the older age group. This distribution highlights trends in educational attainment among different age demographics within the sample. Table 4.2 A one way Anova test was done on effect of consumption on age structure of household heads and based on the results shown on the diagrammatic presentation

of the data, the f-statistics of 4.55 is significant as it shows that the means of the two variables or groups is not the same. Above all, the probability value of 0.0072 is less than the 5% conversional level implying the significance of age structure of house hold head in the determination of household consumption. Data tested on household family size shows a Null hypothesis(H₀): this states independence or family size does not determine consumption. Alternative Hypothesis(H₀): family size affect consumption levels Since F-statistics 145.15 > 0.05, the test was significant and also the p value is less than the 0.05 alpha level. Hence family size impacts the consumption. Across all the age structures, educational level when the one way Anova was done by sorting the age structure on effect of consumption on education, it indicated no significance as the f statistics were very low and the p values were greater than 0.05. So education is not significant in determining household consumption.

5. Conclusion and Recommendations

5.1 Conclusion

In conclusion, this study highlights the intricate relationship between household demographic conditions and consumption in Mufulira District, Zambia. Despite facing economic challenges, households exhibit varying consumption behaviors influenced by income levels. Understanding these dynamics is crucial for policymakers and development practitioners in formulating targeted interventions aimed at alleviating poverty and promoting sustainable development in the area. The findings of this study have shown that household demographic conditions have a significant impact on consumption patterns. Based on the analysis and discussion of the findings, we conclude on the effects of household demographic conditions on consumption in Mufulira District. We summarize the main findings, highlighting the key relationships observed and their implications. We also reflect on any limitations encountered during the study. Our study provides valuable insights into the effects of household demographic conditions on consumption in Mufulira District. The results highlight the need for targeted economic policies that address economic inequalities and improve access to basic services in order to boost household consumption levels. By understanding the factors that influence household consumption, policymakers can design more effective interventions to promote economic development and improve the well-being of residents in impoverished urban settlements like Mufulira District.

The types of goods consumed also vary across income levels. This study sheds light on the complex interplay between household economic conditions and consumption behaviors in an urban setting like Mufulira District. By conducting a thorough data analysis, presenting findings effectively, and engaging in meaningful discussions, this research contributes to the existing body of knowledge on this topic. The insights gained from this study have the potential to inform future research endeavors and policy implementations aimed at enhancing economic well-being and sustainable consumption practices in similar contexts. In conclusion, the findings of this study highlight the significant effects of household economic conditions on consumption in Mufulira district of the Copperbelt. It is evident that households with higher economic conditions

have higher levels of consumption, while those with lower economic conditions struggle to afford basic necessities. The study showed that a relationship exists among the three variables of study which are consumption, family size and education level. The family size and educational levels had a very big role to play in determining household consumption patterns. However, a one way Anova test was done on effect of consumption on age structure of household heads and based on the results shown on the diagrammatic presentation of the data, the f-statistics of 4.55 is significant as it shows that the means of the two variables or groups is not the same. Above all, the probability value of 0.0072 is less than the 5% conversional level implying the significance of age structure of house hold head in the determination of household consumption in mufulira district.

It is imperative for policymakers and stakeholders to take into account the economic disparities within the community and implement targeted interventions to address the needs of low-income households.

5.2 Recommendations

The study provides valuable insights into the complex relationship between household demographic conditions and consumption habits in Mufulira Compound. By addressing the root causes of poverty and promoting inclusive growth, policymakers can help build a more resilient and equitable society for all residents of Zambia. To inform policy and practice, we provide recommendations based on the study's outcomes. These recommendations aim to improve household economic conditions and promote sustainable consumption patterns in Mufulira Compound. We suggest strategies for enhancing income generation, supporting financial literacy programs, and facilitating access to affordable basic necessities.

Based on our findings, we recommend that policymakers prioritize interventions that focus on improving economic opportunities and access to basic services for households in Mufulira compound. By addressing the root causes of poverty and inequality, sustainable progress can be made towards achieving economic development and social equity in Zambia.

6. Acknowledgement

I thank the almighty God, the Creator of heavens and earth. Frankly speaking, He is the one who has been with me from the very beginning of this work, enlivening me and carrying me through all challenges and obstacles. Indeed, He is worthy of all praise and glory!! My sincere thanks and undying gratitude are all extended to my supervisor, who tirelessly has been there for me, supporting me through and through to ensure the survival of my academic dream. Your thoughtfulness and professionalism in revising this work are all hailed as useful tips for making this proposal a success. In you I have found a true academic guidance and mentorship, an incomparable benevolence to be treasured incessantly. My indebtedness also goes to my family, relatives and comrades who determinedly boosted up my academic aspiration. I hope that your benevolent support and silent prayers be awarded abundantly. To all my lecturers, I thank you for your hearty guidance. To me you are cherished heroes without whom this work would be impossible.

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