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A Composite Index to Measure Consumerism Among University Students: Evidence from Angola

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Abstract

This paper proposes a composite index to measure the level of consumerism among university students. The study is based on an undergraduate monograph completed in 2016 and contributes to the literature by developing a methodological framework that integrates indicators related to purchasing behaviour, income, and expenditure. The index is constructed through the selection, normalisation, and aggregation of multiple indicators, using equal weights for its three dimensions.

The empirical application uses data collected in 2016 from 133 students at the Faculty of Economics of Katyavala Bwila University, Angola. Although the dataset is not recent, it provides an opportunity to illustrate the application and interpretability of the proposed index. The resulting index score is 0.55 on a scale from 0 to 1, indicating a moderate level of consumerism under the classification adopted in the original study.

The findings illustrate how different dimensions of consumption can be combined into a single measure, offering a broader perspective than individual indicators considered separately. Robustness analyses based on alternative weighting schemes and normalisation methods indicate consistency in the index results across alternative specifications. The proposed index represents an exploratory measurement framework that may support research on consumer behaviour and inform financial education initiatives. Further applications using more recent data and different populations are needed to assess its robustness and suitability across contexts.

Keywords: consumerism; consumer behaviour; composite index; impulsive buying.

JEL Classification: D12; D91; C43; C21.

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1 Introduction

Understanding consumer behaviour requires more than examining how much individuals spend. Consumption decisions are influenced by income constraints, individual preferences, perceived needs and social factors, which may jointly shape the way individuals allocate their financial resources. Although consumption is a central component of economic activity, the distinction between consumption that reflects actual needs and consumption driven by non-essential or excessive purchasing decisions remains an important issue for both economic analysis and household financial management.

The literature on consumer behaviour has examined several dimensions of the purchasing process, including individual preferences, purchase decisions, consumption habits and the influence of social and psychological factors (Giglio, 2005; Cardoso, 2009; Barracho, 2011). Related research has also developed indicators to assess specific aspects of consumption, such as consumer confidence, consumption intentions and conscious or sustainable consumption. These approaches provide useful insights into particular dimensions of consumer behaviour. However, they do not necessarily offer a measure that combines purchasing behaviour with individuals' financial resources and the perceived need for the goods and services they acquire.

This distinction is relevant because high levels of expenditure do not necessarily indicate excessive consumption. The interpretation of consumption requires consideration of the resources available to the individual and the nature of the purchasing decisions being made. An individual may spend a relatively large proportion of their income on essential goods and services, while another may engage in non-essential purchases despite having more limited financial resources. Consequently, measuring consumerism through expenditure alone may provide an incomplete picture of individual consumption behaviour.

A composite measure can help address this problem by bringing together different dimensions of consumption within a single analytical framework. In particular, the relationship between purchasing behaviour, income and expenditure provides a basis for examining whether consumption decisions are consistent with individual financial circumstances. The construction of such a measure nevertheless raises methodological questions concerning the selection of indicators, their normalisation, the aggregation procedure and the interpretation of the resulting index.

This paper revisits and develops a composite index designed to measure consumerism among university students. The study originates from an academic monograph completed in 2016 at the Faculty of Economics of Katyavala Bwila University (FE-UKB), Angola. The original monograph proposed an approach combining different dimensions of consumption, including purchasing behaviour, individual income and expenditure-related indicators. The

present paper builds on that initial work by revisiting the conceptual framework, clarifying the methodological presentation and examining the interpretation of the proposed composite measure. It therefore represents a revised and reformulated version of an earlier academic study rather than a new data collection exercise.

The empirical application draws on the original survey conducted among students of the FE-UKB in 2016. The institution had a population of 824 students, from which 133 valid questionnaires were obtained. The original application produced a composite index value of 0.55, which was interpreted as indicating impulsive consumerism under the classification adopted in the original study. Rather than treating this result as definitive, the present paper uses the original data and findings as the empirical basis for revisiting the index's construction and interpretation. This distinction is important because the numerical value obtained from the original formulation should not automatically be regarded as equivalent to a value generated by a revised specification.

The paper addresses the following research question: to what extent can a composite index combining consumption behaviour, income and expenditure-related indicators provide a meaningful measure of consumerism among university students? In addressing this question, the paper has three main objectives. First, it clarifies the conceptual dimensions underlying the proposed index. Second, it sets out a systematic procedure for the normalisation and aggregation of the indicators. Third, it re-examines the empirical application using the original survey data, with particular attention to the interpretation and methodological consistency of the resulting measure.

The contribution of this paper is primarily methodological and empirical. From a methodological perspective, it develops a framework for combining economic and behavioural dimensions of consumption in a single indicator. From an empirical perspective, it provides evidence from an undergraduate student population in Angola, a context that remains relatively underrepresented in research on consumer behaviour and composite consumption measures. The paper also highlights the limitations of interpreting a composite index as a direct measure of individual rationality or compulsive purchasing, and distinguishes between the measurement of consumption-related behaviour and the broader psychological dimensions of consumerism.

The remainder of the paper is organised as follows. Section 2 reviews the literature on consumer behaviour, consumerism and composite indicators. Section 3 presents the conceptual framework and the methodology used to construct the index. Section 4 describes the data and the empirical context. Section 5 presents the empirical results, while Section 6 discusses their implications and the robustness of the proposed measure. Section 7 addresses the limitations of the study, and Section 8 concludes.

2 Literature Review

2.1 Consumerism

Consumption is a normal part of economic and social life. Individuals purchase goods and services to satisfy their needs, from basic necessities such as food and clothing to other goods and services that improve their quality of life. In this sense, consumption is not necessarily a problem. It is an essential activity through which individuals use their available resources to satisfy different needs.

Consumerism, however, is generally associated with a pattern of consumption that goes beyond the satisfaction of actual needs. It may involve excessive or unnecessary purchases, difficulties in controlling spending and decisions that are not consistent with an individual's financial situation. Giglio (2005) relates consumerism to a disruption in the normal balance between income, expenditure and financial planning. This perspective is particularly relevant because it places the relationship between consumption and available resources at the centre of the discussion.

The distinction between consumption and consumerism is therefore important. While consumption refers to the purchase and use of goods and services to satisfy needs, consumerism is associated with the tendency to consume excessively or without sufficient consideration of the need for a particular purchase. For example, buying clothing because it is needed is a normal consumption decision. Buying additional clothing simply because it is fashionable, or because other people have purchased it, may reflect a different type of behaviour.

Recent research has further emphasized the social, cultural and psychological dimensions of consumerism. Tormakhova and Grechkosii (2025) examine the transformation of consumption practices from what they describe as traumatic consumerism to smart consumption. Drawing on the contributions of Veblen, Baudrillard, Bourdieu, Bauman and Sennett, they discuss how consumption can function as a means of expressing social status, constructing identities and satisfying needs that extend beyond basic material necessities. The authors also introduce the idea of traumatic consumerism, in which the acquisition of goods and services may operate as a compensatory response to personal or societal difficulties. This perspective reinforces the argument that consumerism cannot be understood solely through expenditure levels, since purchasing decisions may also reflect symbolic, social and emotional motivations.

Consumerism can also be influenced by social and psychological factors. Advertising, social pressure and the desire to maintain a particular lifestyle may influence individuals' purchasing decisions. As discussed by Giglio (2005), consumption behaviour cannot always be explained by economic factors alone, since individuals may also purchase goods to obtain

social recognition, personal satisfaction or a sense of belonging.

For this reason, consumerism should not be understood simply as spending a large amount of money. The level of expenditure must also be considered in relation to income, purchasing needs and the circumstances surrounding the decision to buy.

2.2 Consumer Behavior

Consumer behaviour refers to the way individuals make decisions when purchasing and using goods and services. These decisions may vary according to personal preferences, available income, information, social influences and the importance attached to a particular purchase. Different forms of purchasing behaviour, particularly rational and impulsive behaviour, are discussed in the literature on consumer behaviour (Barracho, 2011; Cardoso, 2009).

Rational purchasing. Rational purchasing occurs when individuals consider their needs and available resources before making a purchase. The consumer generally knows what they want to buy, compares alternatives and may consider prices and product characteristics before making a decision. This type of behaviour involves a balance between reason and the desire to purchase (Barracho, 2011).

A rational purchasing decision does not necessarily mean choosing the cheapest product. Rather, it means making a choice after considering whether the purchase is necessary and whether it is compatible with the individual's financial situation.

Impulsive purchasing. Impulsive purchasing is generally associated with a purchase made spontaneously, without sufficient prior planning. In these situations, the decision may be influenced by emotions, promotions, product displays or the immediate desire to acquire something. Impulse buying may occur when individuals make purchasing decisions without properly considering alternatives or the consequences of their choices (Giglio, 2005).

However, an impulsive purchase does not necessarily mean that the individual has a serious problem with consumption. A person may occasionally buy something unexpectedly without this becoming a regular pattern of behaviour. The frequency of such purchases and the individual's ability to control them are therefore important considerations.

Compulsive purchasing. Compulsive purchasing is different from occasional impulsive buying. It is more closely associated with repeated purchasing behaviour that is difficult for the individual to control. In these circumstances, the act of buying may become a way of dealing with emotional situations, such as stress or dissatisfaction, even when the individual does not need the products being purchased.

The distinction is important for the present study. While impulsive purchasing may occur in specific situations, compulsive purchasing suggests a more persistent difficulty in controlling buying behaviour. Therefore, these concepts should not be treated as interchangeable.

Taken together, these forms of purchasing behaviour show that consumption decisions are not always based exclusively on economic needs. Individuals may make rational choices, but they may also be influenced by immediate emotions, social pressure or habits. This makes it relevant to consider both the purchasing decision and the financial resources available to the consumer when examining consumerism.

Recent empirical research has also examined the relationship between responsible consumption and impulsive purchasing. Using survey data from 524 participants in Türkiye, Cubukcu (2025) find that responsible consumerism is negatively associated with impulsive buying behaviour. The study also identifies brand literacy as a partial mediator in this relationship, suggesting that consumer knowledge may contribute to more deliberate purchasing decisions. These findings highlight the importance of distinguishing between consumption guided by informed choices and purchasing decisions influenced by immediate impulses.

The relationship between student consumption and financial resources has also received attention in recent research. Noviani et al. (2025) investigate hyper-consumerism among university students in Indonesia in the context of online lending services. Their ethnographic analysis shows how digital lending platforms can encourage loan-driven consumption while presenting participation in these services as an entrepreneurial opportunity. This study illustrates how access to credit and digital platforms may influence consumption practices, potentially encouraging individuals to acquire goods and services beyond their immediate financial resources.

Research focusing specifically on university students has also explored the relationship between consumer awareness and purchasing decisions. Mbokane and Modley (2024) examine attitudes and awareness regarding green consumerism among 404 university students in Johannesburg, South Africa. Their findings indicate that income and academic faculty are significantly associated with students' awareness of green consumerism. The study also reports that product price and quality exert a greater influence on purchasing decisions than environmental considerations. Although green consumerism differs conceptually from excessive or impulsive consumption, this research provides relevant evidence on the factors shaping purchasing behaviour among university students in an African context.

2.3 Measurement and Indices

The study of consumer behaviour often requires the use of indicators to describe different aspects of a given reality. An indicator is a measure that provides information about a particular characteristic or phenomenon. It may be based on a single variable or on information collected through several observations. As discussed in the original study, a useful indicator should be relatively easy to understand, allow a consistent interpretation and communicate information about the phenomenon being analysed.

An index, in turn, results from combining different indicators or variables into a single measure. In simple terms, indicators provide information about specific aspects of a phenomenon, while an index brings together this information to offer a broader picture. Thus, an index can be understood as an aggregated measure that summarises several dimensions of a particular issue.

This distinction is relevant because some phenomena cannot be adequately described by a single variable. For example, measuring consumerism only through expenditure would not show whether the purchases were necessary or whether they were compatible with the individual's income. Similarly, considering income alone would not provide information about purchasing behaviour or the reasons behind consumption decisions.

Composite indices make it possible to combine different variables and dimensions into a single measure. The construction of such an index generally involves selecting the relevant indicators, placing them on a comparable scale and combining them according to a defined procedure. The final value provides a summary of the information contained in the selected indicators.

Different examples of indicators and indices related to consumption and other areas can be found in the literature reviewed in the original study. These include measures of household consumption intentions (CNC, 2011) and indices applied to specific areas, such as the ergonomic index developed by Piloto (2011). Although these approaches address different aspects of economic and social activity, they illustrate how indicators can be used to summarise information and describe particular phenomena.

Nevertheless, the selection of variables and the way they are combined are important. An index is only useful if its components are relevant to the phenomenon being studied and if its final value can be interpreted in a meaningful way. It is also important to recognise that an index simplifies reality: it provides an overall measure, but it cannot capture every aspect of individual behaviour.

In the case of consumerism, the discussion above suggests that expenditure, income and purchasing needs should be considered together. These dimensions provide complementary information and may help distinguish between individuals who spend more because they

have greater financial resources or essential needs and those whose purchasing behaviour may be less consistent with their circumstances.

Despite the existence of indicators and indices addressing particular aspects of consumption, there remains a practical need for a simple measure that combines purchasing behaviour, income and the need for goods and services in a single framework applicable to university students. This is the starting point for the composite index examined in this paper. By bringing these dimensions together, the proposed measure seeks to provide a more complete way of describing consumerism in the population under study.

Recent studies have also contributed to the development of measurement instruments for specific forms of consumerism. Duradoni et al. (2025), for example, develop and validate the Fomsumerism Scale (FOMS), an instrument designed to measure purchasing behaviour associated with Fear of Missing Out (FoMO). Based on two empirical studies involving Italian-speaking participants, the authors identify four dimensions: self-determination, social comparison, social belongingness and personal agency. Their findings demonstrate the importance of developing integrated measurement instruments to capture the multiple dimensions underlying contemporary consumption behaviour.

Similarly, Hino and Sparks (2025) develop and validate a multidimensional scale for measuring clean food consumerism. Their final instrument comprises 18 items organized into five dimensions: health benefits, ease of use, product familiarity, product authenticity and transparency of the manufacturing process. Although this instrument focuses specifically on food consumption, it provides another example of how complex consumption-related phenomena can be operationalized through multiple indicators. Together, these studies illustrate the growing relevance of multidimensional measurement approaches, while also highlighting the need to define clearly the specific phenomenon that each instrument is intended to measure.

3 Methodology: Construction of the Consumerism Index

3.1 Conceptual Framework

In this study, consumerism is understood through three related aspects of consumer behaviour: excessive consumption, irrational purchasing decisions, and the imbalance between individual income and consumption. These aspects provide the conceptual basis for the construction of the Consumerism Index.

Excessive consumption refers to the purchase of goods and services beyond what is considered necessary. Irrational purchasing decisions occur when individuals make purchases

without adequately considering their needs, available resources, or possible alternatives. Finally, the imbalance between income and consumption concerns the relationship between an individual's financial resources and their purchasing behaviour.

Based on this understanding, the index was designed to capture consumerism through three dimensions: purchasing behaviour, income, and expenditure-related behaviour. The purpose is not simply to measure how much individuals spend, but also to consider their financial situation and the way they make purchasing decisions.

3.2 Steps in Index Construction

The construction of the index followed four main steps.

First, the problem to be measured was identified. The starting point was the possibility that individuals may make purchasing decisions without properly considering their needs and financial circumstances. This may be reflected in unnecessary purchases, imitation of other consumers, and a lack of rational decision-making.

Second, the indicators were selected. Three dimensions were considered relevant to the measurement of consumerism: the level of goods and services purchased, the individual's income, and the need to purchase goods and services.

Third, data were collected through a questionnaire administered to students of the Faculty of Economics at Katyavala Bwila University (FE-UKB). The questionnaire provided information on students' income, purchasing behaviour, and expenditure.

Finally, the selected indicators were assigned equal weights and combined into a single index. This approach allowed the different dimensions to contribute equally to the final measure.

3.3 Variables and Indicators

The variables used in the construction of the index were obtained from the questionnaire administered to the students. They were organised into three dimensions.

The first dimension concerns **purchasing behaviour**. It captures aspects of the way individuals make purchasing decisions, including the consideration given to their needs and the goods or services they choose to buy.

The second dimension concerns **income**. It considers the financial resources available to each individual and their relationship with the national minimum wage. This dimension provides information about the individual's economic capacity.

The third dimension concerns **expenditure**. It captures the level of spending on goods and services reported by the respondents. This information helps to assess consumption

patterns in relation to the other dimensions of the index.

For qualitative variables, responses were measured using a five-point Likert scale. Each response was assigned a numerical score, allowing the answers to be converted into values between zero and one. The score for each variable was calculated using the following expression:

$$X_j = \frac{\sum_{i=1}^{n} F_i p_i}{n P_{\max}}$$

where X_j represents the value of the variable, F_i is the absolute frequency of each response, p_i is the score assigned to that response, n is the number of respondents, and $P_{\max}$ is the maximum score on the Likert scale.

In this study, the maximum score was five. This procedure made it possible to express the responses on a common scale and use them in the calculation of the composite index.

3.4 Index Formulation

The initial formulation of the index was based on the difference between the level of consumption and the level of income:

$$IM = Nc - Ny$$

where IM represents the Consumerism Index, Nc is the level of consumption, and Ny is the level of income.

The level of consumption was calculated as:

$$Nc = \frac{C_2 - C_1}{C_2}$$

where C_2 represents the purchase actually made and C_1 represents the alternative purchase, that is, a good or service that could have been purchased instead.

The income component was defined as:

$$Ny = \frac{Y_2 - Y_1}{Y_2}$$

where Y_2 represents the individual's income and Y_1 represents the national minimum wage.

By simplifying these expressions, the initial formulation can also be written as:

$$IM = Q_y - Q_c$$

where:

$$Q_y = \frac{Y_1}{Y_2} \qquad \text{and} \qquad Q_c = \frac{C_1}{C_2}$$

Since the empirical application involved additional variables, the initial expression was extended to include three dimensions. Equal weights were assigned to each dimension, resulting in the following formulation:

$$IM' = \frac{1}{3}Nc + \frac{1}{3}Q_y + \frac{1}{3}O$$

where Nc represents the consumption component, Q_y represents the income ratio, and O represents the third expenditure-related indicator.

The weight of 1/3 was assigned to each component, meaning that all three dimensions contribute equally to the final index. The resulting measure is therefore an arithmetic aggregation of the three indicators.

As an alternative aggregation approach, a multiplicative specification based on the geometric mean can also be considered:

$$IM'_{\text{mult}} = \sqrt[3]{Q_y \times N_c \times O}$$

Let denote for individual in additive aggregation:

$$IM'_i = \frac{Q_{y,i} + N_{c,i} + O}{3}$$

And multiplicative aggregation:

$$IM'_{\text{mult},i} = \sqrt[3]{Q_{y,i} \times N_{c,i} \times O}$$

So, the mean for additive aggregation is:

$$\overline{IM}_{=}\frac{1}{n}\sum_{i=1}^{n} IM'_i$$

And for multiplicative aggregation is:

$$\overline{IM'}_{\text{mult}} = \frac{1}{n}\sum_{i=1}^{n} IM'_{\text{mult},i}$$

The index ranges from zero to one, with higher values representing a stronger presence of the characteristics captured by the selected indicators. For presentation purposes, the result can also be expressed on a scale from zero to 100 by multiplying the index value by 100.

4 Data

4.1 Study Context

The empirical application of the Consumerism Index focuses on students from the Faculty of Economics at Katyavala Bwila University (UKB), located in Benguela, Angola. The Faculty is dedicated to higher education in the fields of economics and related disciplines.

The study focused specifically on Economics students, who were considered an appropriate group for examining consumption patterns and purchasing decisions. At the time of the study, the Faculty had a total population of 824 students, including 495 students enrolled in the regular programme and 329 in the evening programme.

4.2 Sample

The study population consisted of 824 students enrolled at the Faculty of Economics. The sample size was determined using a formula for a finite population, taking into account the population size and the sampling parameters adopted in the original study.

A probability sampling approach was adopted, using simple random sampling as the selection method. The initial calculation indicated a required sample of 119 students, based on a 95% confidence level and a 10% sampling error.

A total of 135 questionnaires were received. However, two responses were excluded because they did not contain sufficient information for the analysis. The final sample therefore consisted of 133 valid responses.

4.3 Data Collection

The empirical application of the index is based on data collected in 2016 through a structured questionnaire administered to university students. The questionnaire was distributed online using Google Forms and consisted of closed-ended questions.

The questionnaire collected information on students' personal and economic characteristics, income, purchasing behaviour, and expenditure patterns. Qualitative variables were measured using a five-point Likert scale, ranging from total disagreement (1) to total agreement (5).

Although the dataset is not recent, it is used as a proof of concept to demonstrate the construction and application of the proposed index. The methodological contribution of the study allows for future applications using updated datasets and different populations.

5 Results

5.1 Index Calculation

The Consumerism Index was calculated by combining the three indicators described in the previous section: income, purchasing behaviour, and expenditure. Each indicator received an equal weight of one-third.

The results obtained from the 133 valid questionnaires are presented in Table 1.

Table 1: Consumerism Index: component scores

Indicator	**Score**
Income	0.57
Purchasing behaviour	0.59
Expenditure	0.48
Consumerism Index	0.55

Source: Author's calculations based on the 2016 survey.

Applying the formula presented in the methodology section gives:

$$IM' = \frac{1}{3}(0.57) + \frac{1}{3}(0.59) + \frac{1}{3}(0.48)$$

$$IM' = 0.19 + 0.20 + 0.16$$

$$\boxed{IM' = 0.55}$$

The resulting index is 0.55 on a scale ranging from zero to one, equivalent to 55 on a scale from zero to 100. According to the classification adopted in this study, this value falls within the interval associated with moderate level of consumerism.

5.2 Interpretation of Results

The overall score of 0.55 suggests a tendency towards impulsive consumerism among the students surveyed. This result should be understood in relation to the three components of the index rather than as evidence that all students display the same purchasing behaviour.

Purchasing behaviour recorded the highest score (0.59), indicating that this dimension contributes most strongly to the overall result. The income indicator reached 0.57, while expenditure recorded a lower score of 0.48.

These results suggest that the purchasing behaviour of the students deserves particular attention. Although the expenditure indicator remained close to the middle of the scale, the overall index indicates that consumption decisions cannot be understood through expenditure alone. The relationship between purchasing behaviour and financial resources also matters.

The findings therefore support the idea that consumerism is not simply a question of spending large amounts of money. It also involves the reasons behind purchases and the extent to which consumption decisions take individual financial circumstances into account.

5.3 Behavioral Insights

The questionnaire provides additional information that helps to understand the results of the index.

One relevant finding concerns the emotional motivation behind purchases. A total of 112 students reported that they usually buy goods or services in order to feel better. This suggests that purchasing decisions may be influenced not only by practical needs but also by emotional motivations.

Social influence, however, appears to be more limited in some aspects. Most respondents (88 students) disagreed with the statement that they bought things to impress others. Only 16 students expressed agreement with this behaviour. Nevertheless, 42 students reported paying attention to promotions and new products, while 21 showed a stronger tendency to respond to these offers. This indicates that advertising, promotions, and new products may influence some purchasing decisions, although the results do not suggest that social pressure affects all students in the same way.

The findings also reveal differences in financial planning habits. While 57 students reported taking a list of expenses when shopping, 62 stated that they did not regularly review their expenditure. In addition, 35 students reported that they did not usually analyse products before purchasing them, even though the majority indicated that they did consider product characteristics or alternatives.

Taken together, these findings point to a mixed pattern. Some students demonstrate planning and careful purchasing habits, while others appear more exposed to emotional motivations and less regular financial monitoring. This helps explain why the overall index indicates a tendency towards impulsive consumerism rather than a uniform behaviour across the entire sample.

6 Discussion

The results provide an empirical application of the proposed Consumerism Index and illustrate the importance of considering different dimensions of consumption. The overall score of 0.55 indicates a tendency towards impulsive consumerism among the students surveyed at the Faculty of Economics of Katyavala Bwila University.

An important finding is that purchasing behaviour recorded the highest component score (0.59). This is consistent with the questionnaire responses, particularly the large number of students who reported buying goods or services to improve their mood. Such behaviour suggests that consumption decisions may sometimes be influenced by emotional motivations rather than by practical needs alone.

This observation is in line with the discussion of consumer behaviour presented by Barracho (2011), particularly the distinction between rational and impulsive purchasing decisions. It also relates to Giglio (2005) discussion of consumerism as a disruption of the relationship between income, expenditure, and financial planning.

At the same time, the results show that impulsive behaviour does not describe every aspect of the students' consumption patterns. Many respondents reported analysing products before purchasing them, taking shopping lists, or not buying goods simply to impress others. These findings suggest that rational and impulsive behaviours can coexist within the same group of consumers.

The main contribution of the index is therefore its ability to bring together information that would otherwise be analysed separately. Income, purchasing behaviour, and expenditure provide different perspectives on consumption, and their combination offers a broader picture than any single indicator could provide.

Beyond its measurement purpose, the index may also have practical applications. In particular, it could support financial education initiatives aimed at improving budgeting habits, encouraging more careful purchasing decisions, and helping individuals understand the relationship between their income and expenditure. In a university context, it could serve as a starting point for identifying areas where students may benefit from greater financial awareness.

More broadly, the proposed index offers a simple framework that can be applied to other groups and institutions. Its usefulness will depend on the quality of the information collected and on further applications that assess whether the selected indicators remain appropriate across different populations.

7 Limitations

This study has some limitations. First, the dataset used in the empirical application was collected in 2016, which may not fully reflect current consumption patterns. Changes in prices, income levels, digital purchasing channels, and consumer preferences may have affected the way individuals make purchasing decisions since the data were collected.

Second, the sample is limited to students from a single institution, the Faculty of Economics at Katyavala Bwila University. Consequently, the results cannot be generalised to all university students or to the wider Angolan population.

Third, the index is based on a specific set of indicators and equal weights. Although this approach makes the measure relatively simple to calculate and interpret, further research is needed to assess the robustness of the results under alternative indicators and weighting schemes.

Finally, the index should be understood as an exploratory measure of consumerism rather than as a validated instrument for diagnosing compulsive buying behaviour. Its interpretation should therefore remain within the limits of the dimensions included in its construction.

Future research should apply the proposed index to more recent and diverse datasets in order to validate and extend the findings. Applications to different universities, age groups, and income categories would also help assess its broader usefulness and identify possible improvements to its construction.

8 Conclusion

This study proposed and applied a composite index to measure consumerism among university students. The main contribution is the development of a simple tool that brings together different aspects of consumer behaviour, including purchasing decisions, income and expenditure. By combining these dimensions, the index provides a broader perspective on consumerism than would be obtained by looking at spending levels alone.

The empirical application, based on data collected from 133 students at the Faculty of Economics of Katyavala Bwila University in 2016, produced an overall index value of 0.55 on a scale from 0 to 1. According to the classification adopted in the original study, this result falls within the category of moderate level of consumerism. The individual components also indicate that purchasing behaviour and income-related factors play an important role in the overall measure. However, the results suggest that rational and impulsive purchasing practices can coexist among students.

From an academic perspective, the study contributes to the discussion on how consumerism can be measured through a combination of behavioural and economic indicators. The proposed index offers a starting point for further research on consumer behaviour, particularly among young adults and university students. It also provides a framework that can be tested, refined and adapted to other populations and contexts.

From a practical perspective, the index may serve as a useful tool for identifying patterns of consumer behaviour and supporting financial education initiatives. Universities and other institutions may use similar approaches to better understand students' purchasing decisions, their relationship with income and their expenditure habits. Such information can help guide initiatives aimed at promoting more informed purchasing decisions, financial planning and saving habits.

Nevertheless, the proposed index should be regarded as an exploratory measurement tool rather than a fully validated instrument. Its application to data from 2016 and to students from a single institution limits the extent to which the findings can be generalised. In addition, future research should examine the choice and weighting of indicators, as well as the classification thresholds used to interpret the index.

Further studies could apply the index to more recent datasets and different groups of consumers, allowing comparisons across institutions, age groups and income levels. They could also assess whether alternative indicators or weighting methods improve its ability to capture different forms of consumerism.

Overall, this study shows that a composite index can provide a practical starting point for measuring consumerism by combining economic and behavioural information. Although

further testing and refinement are necessary, the proposed approach offers a basis for future empirical research and for initiatives aimed at promoting more responsible consumption.

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A Additional Figures

This appendix presents the descriptive figures obtained from the survey conducted among students of the Faculty of Economics, Katyavala Bwila University, in 2016. The figures provide additional information on the respondents' characteristics, purchasing behaviour and expenditure patterns.

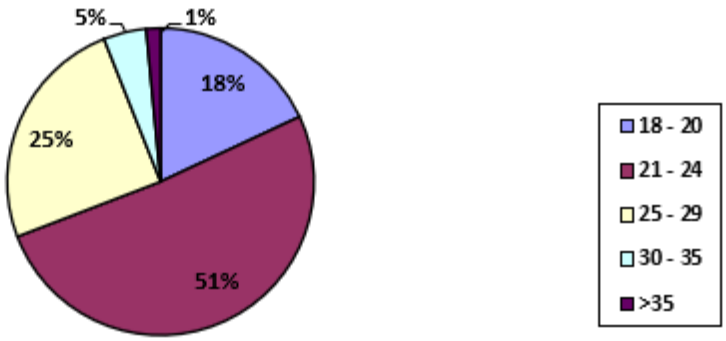


Figure 1: Age Distribution of Respondents

Source: Survey data (2016)

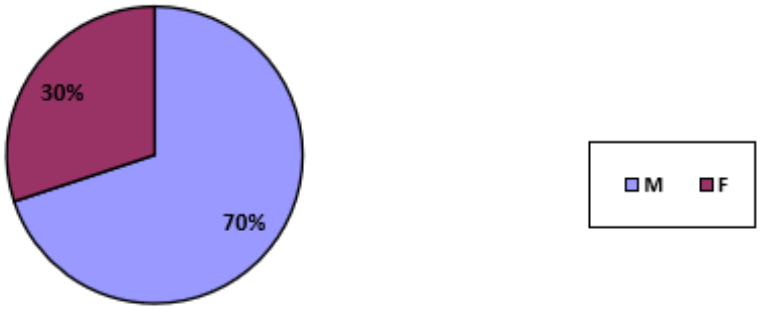


Figure 2: Gender Distribution of Respondents

Source: Survey data (2016)

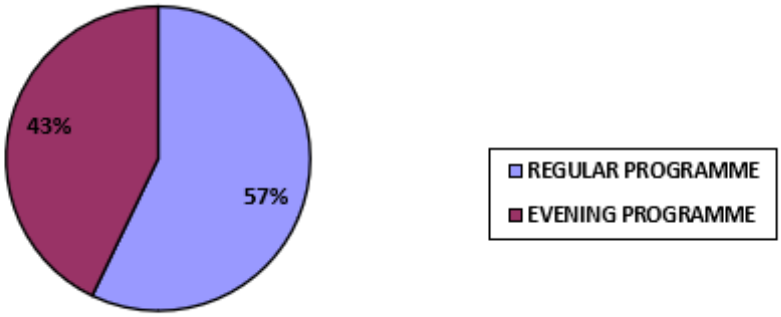


Figure 3: Distribution of Respondents by Academic Programme

Source: Survey data (2016)

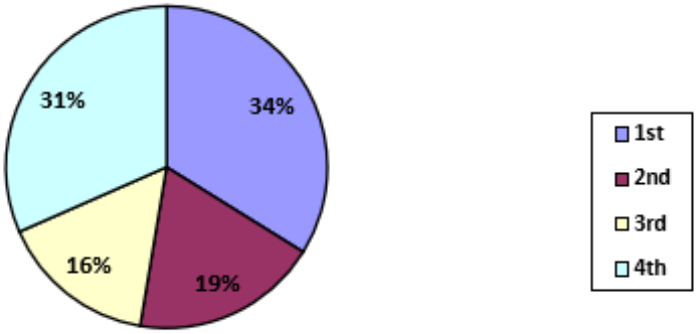


Figure 4: Distribution of Respondents by Year of Study

Source: Survey data (2016)

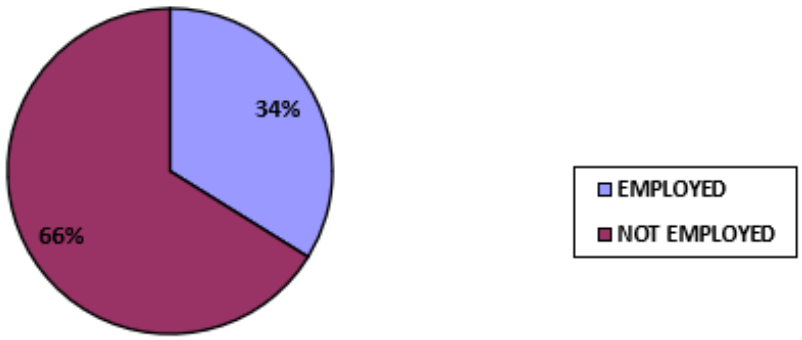


Figure 5: Employment Status of Respondents

Source: Survey data (2016)

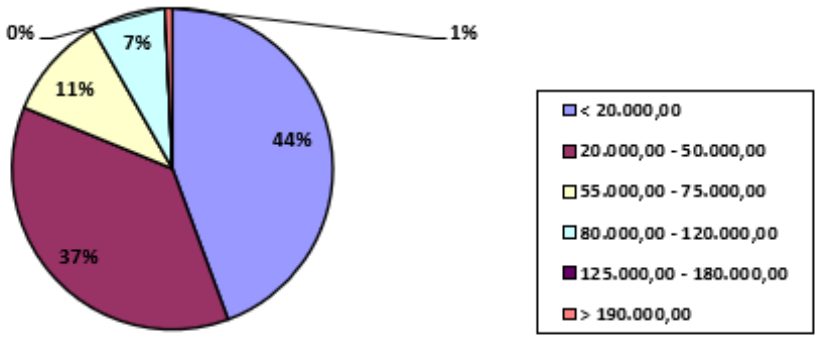


Figure 6: Distribution of Respondents by Income Level

Source: Survey data (2016)

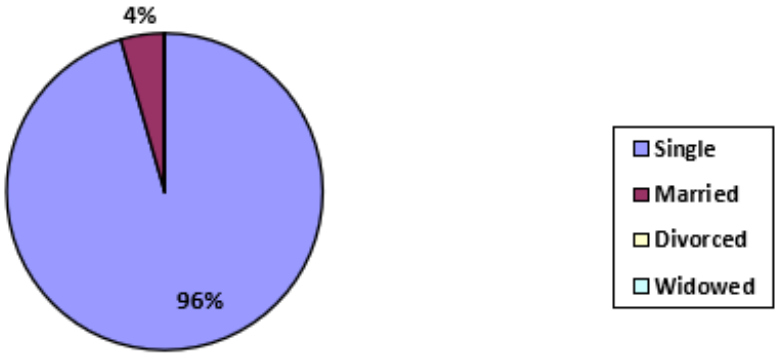


Figure 7: Marital Status of Respondents

Source: Survey data (2016)

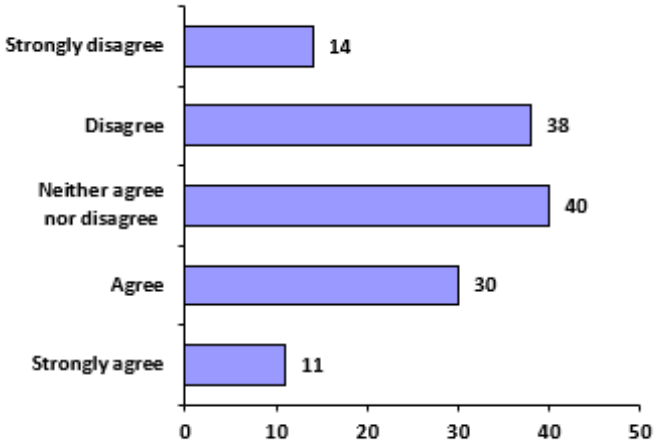


Figure 8: Attitudes towards Excessive Buying

Source: Survey data (2016)

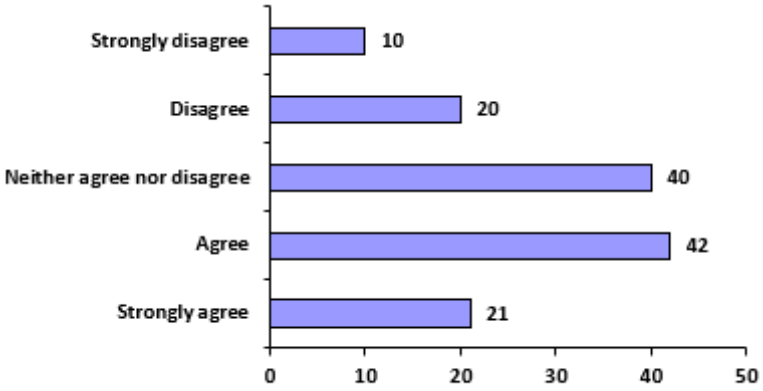


Figure 9: Attitudes towards New Products and Promotions

Source: Survey data (2016)

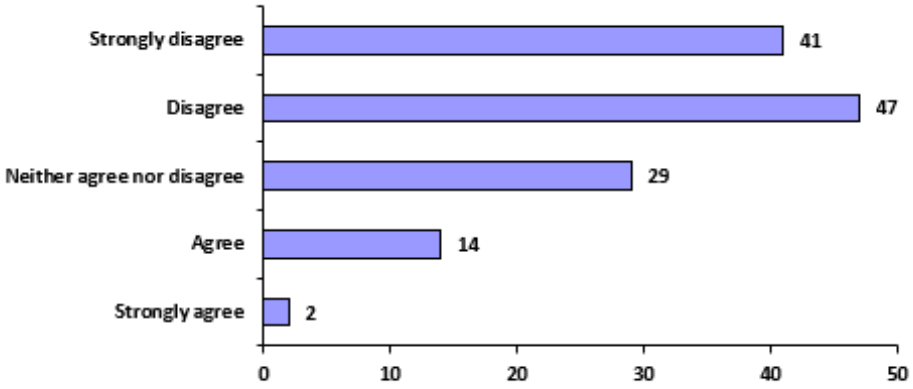


Figure 10: Purchasing Behaviour and Social Impression

Source: Survey data (2016)

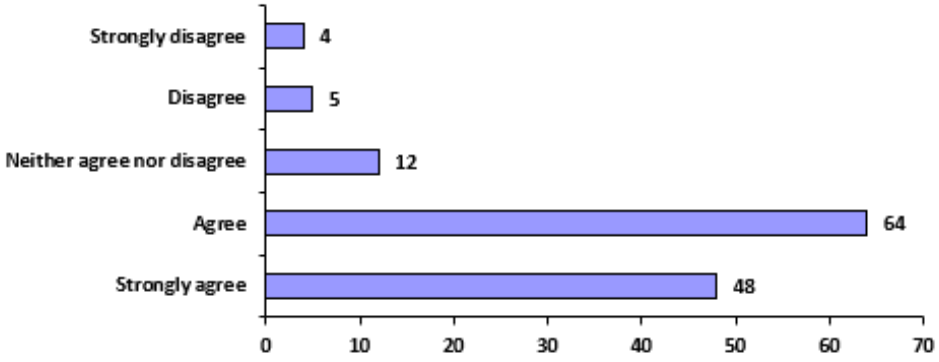


Figure 11: Purchasing Behaviour and Emotional Well-being

Source: Survey data (2016)

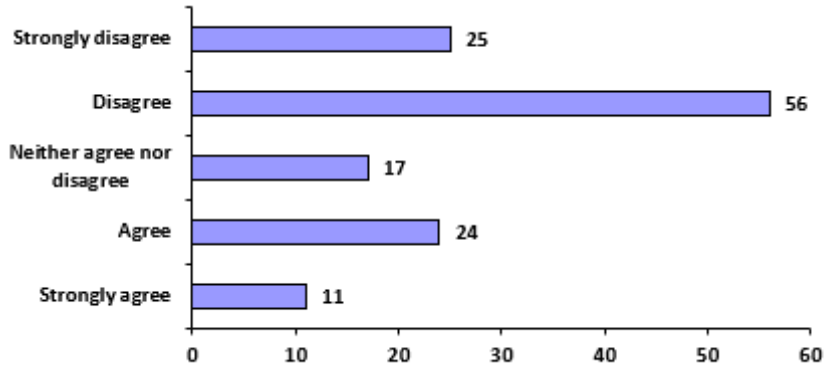


Figure 12: Product Evaluation before Purchase

Source: Survey data (2016)

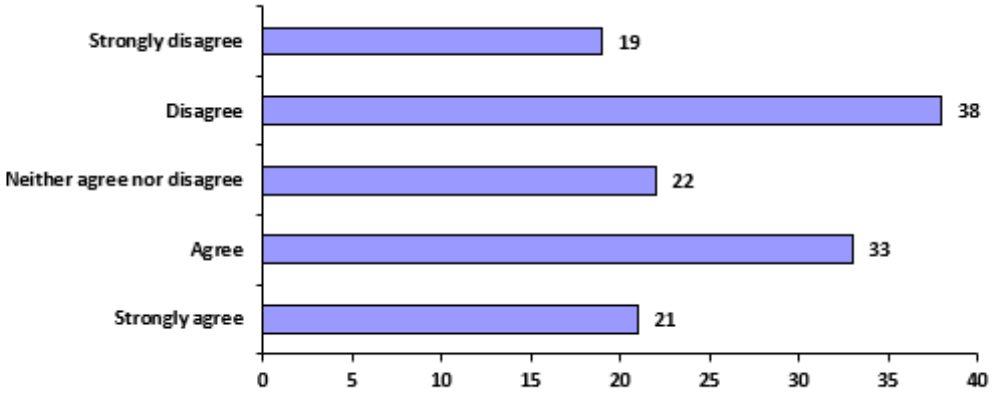


Figure 13: Use of Shopping Lists

Source: Survey data (2016)

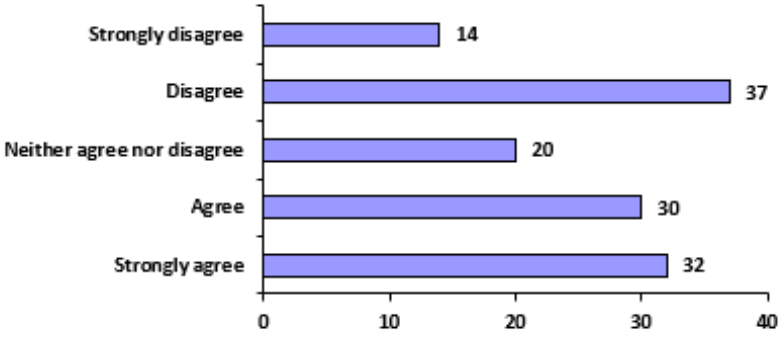


Figure 14: Regular Review of Expenditure

Source: Survey data (2016)

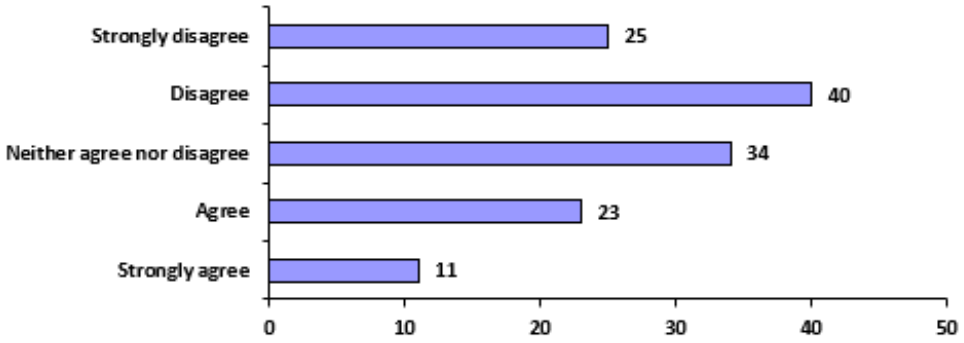


Figure 15: Attitudes towards Using Older Possessions

Source: Survey data (2016)

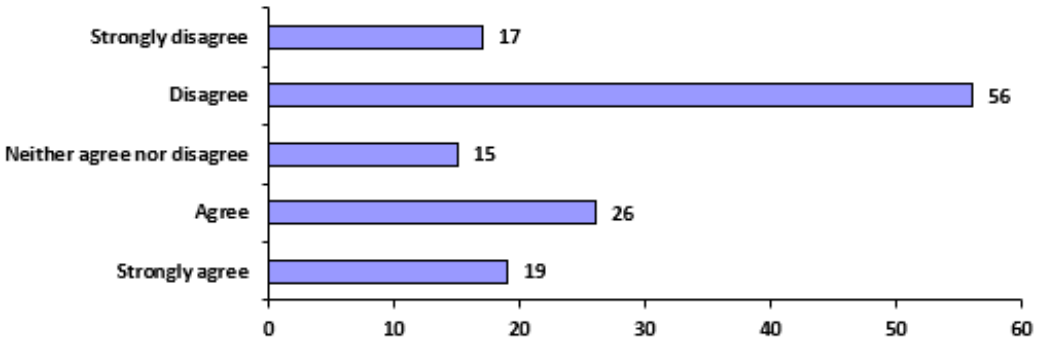


Figure 16: Purchases beyond Financial Means

Source: Survey data (2016)

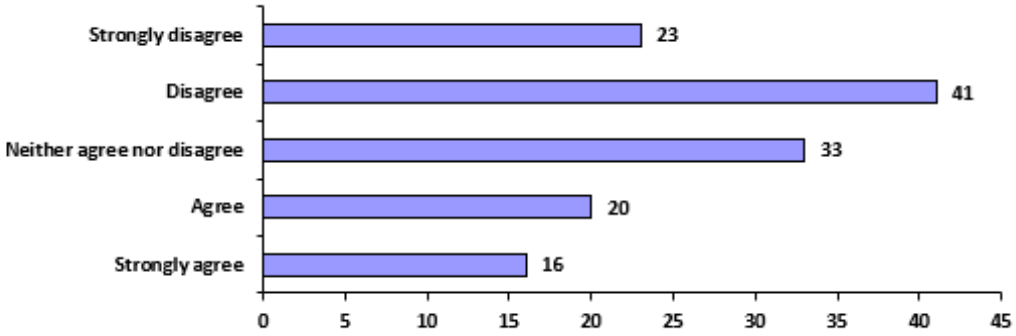


Figure 17: Saving Habits

Source: Survey data (2016)

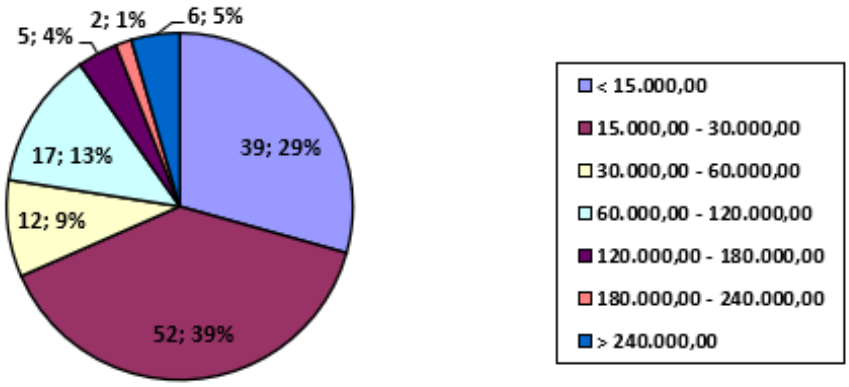


Figure 18: Annual Expenditure on Clothing

Source: Survey data (2016)

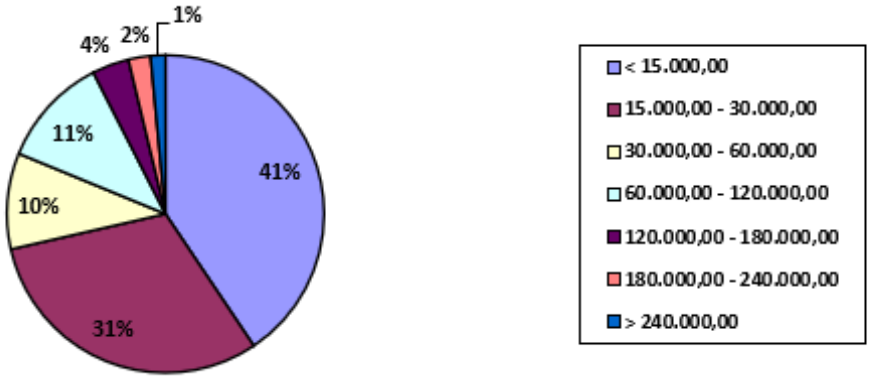


Figure 19: Annual Expenditure on Accessories

Source: Survey data (2016)

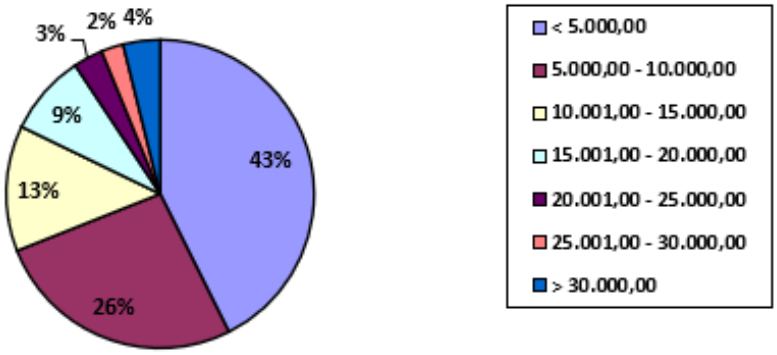


Figure 20: Monthly Expenditure on Public Transport

Source: Survey data (2016)

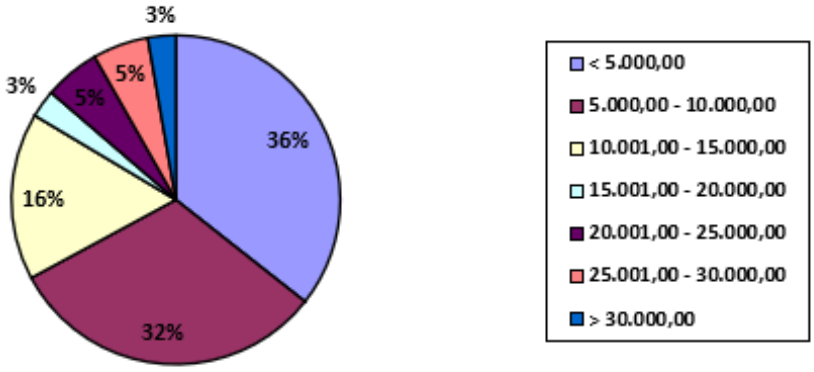


Figure 21: Monthly Expenditure on Fuel

Source: Survey data (2016)

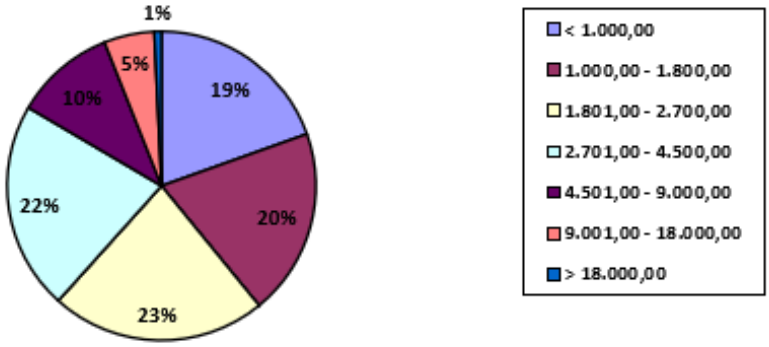


Figure 22: Monthly Expenditure on Communication

Source: Survey data (2016)

B Descriptive Statistics and Robustness Analysis

B.1 Descriptive Statistics

Table 2 reports the descriptive statistics for the index components and the reported individual index.

Table 2: Descriptive statistics of the index components

Variable	N	Mean	Std. dev.	Minimum	Maximum
Q_y	133	0.5759	0.2690	0.07	0.86
N_c	133	0.4838	0.2708	0.06	1.00
O	133	0.5892	0.1274	0.34	0.98
IM'	133	0.5599	0.1137	0.25	0.87

Note: $N_c = 1 - Q_c$. Statistics are based on the respondent-level data supplied with the study; component values in the source file are rounded to two decimal places.

B.2 Internal Consistency

Cronbach's alpha was calculated for the ten questionnaire items included in the questionnaire. The coefficient was $\alpha = 0.7197$ ($N = 133$), indicating acceptable internal consistency. This statistic is reported for the questionnaire items and is not interpreted as a reliability test of the composite index itself.

B.3 Sensitivity to Alternative Weights

The index was recalculated using alternative weights for the three components. Table 3 reports the resulting mean scores and Spearman rank correlations with the equal-weight baseline.

The high rank correlations indicate that the relative ordering of respondents is broadly stable across the tested weighting schemes.

B.4 Robustness to Alternative Normalisation Methods

The baseline indicators were compared with sample-based min–max normalisation and a rank-based transformation. Table 4 reports the mean index and correlations with the baseline.

Table 3: Sensitivity analysis under alternative weighting schemes

Specification	Q_y	N_c	O	**Mean index**	**Spearman** ρ
Equal weights (baseline)	33.3%	33.3%	33.3%	0.5496	1.0000
Greater weight on income	50.0%	25.0%	25.0%	0.5562	0.9840
Greater weight on expenditure	25.0%	50.0%	25.0%	0.5332	0.9644
Greater weight on purchasing behaviour	25.0%	25.0%	50.0%	0.5595	0.9641
Intermediate specification	40.0%	30.0%	30.0%	0.5523	0.9961

Note: Spearman correlations are calculated against the equal-weight baseline.

Table 4: Robustness to alternative normalisation methods

Method	**Mean index**	**Pearson** r	**Spearman** ρ
Baseline normalisation	0.5496	1.0000	1.0000
Min–max normalisation	0.4935	0.9935	0.9934
Rank-based normalisation	0.5000	0.9502	0.9505

Both alternatives remain highly correlated with the baseline, particularly the min–max specification.

B.5 Robustness to Multiplicative Aggregation

As an alternative to the additive specification, the index was recalculated for each respondent using a multiplicative aggregation approach based on the geometric mean of the three components:

$$IM'_{\text{mult},i} = \sqrt[3]{Q_{y,i} \times N_{c,i} \times O_i}$$

The mean multiplicative index was then calculated across the 133 respondents as follows:

$$\overline{IM}'_{\text{mult}} = \frac{1}{133} \sum_{i=1}^{133} IM'_{\text{mult},i}$$

This specification provides an alternative to arithmetic aggregation and is more sensitive to low values in any individual component. Table 5 compares the results obtained under both specifications.

Table 5: Comparison between additive and multiplicative aggregation

Specification	**Mean index**	**Pearson r**	**Spearman ρ**
Additive aggregation	0.5496	1.0000	1.0000
Multiplicative aggregation	0.5141	0.9816	0.9796

Note: Both mean indices are calculated as the arithmetic mean of the 133 individual index values. Correlations are calculated between the individual multiplicative and additive index values.

The high correlations indicate that the relative ordering of respondents remains broadly stable under multiplicative aggregation, despite the lower mean index value.