

## Multidimensional of Household Inequality: A Conceptual Study

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### ABSTRACT

The aim of this paper is to provide a conceptual study on the identification of possible multidimensional inequalities between households. It covers dimensions of inequality, which are very important to provide a comprehensive view of household inequality. A review of the literature is employed in this study to examine the previous works of this area and the theory of inequality. It is very interesting to note that, very few studies focus on the multidimensional of household inequality. In addition, this study suggests a cumulative inequality theory that supports the ability of multidimensional application to measure household inequalities. Therefore, this paper offers significant implications to the researchers, regulators and the government to utilise the multidimensional of household inequality in guiding them for future research and decision making.

**Keywords:** *Conceptual framework, literature review, multidimensional of household inequality.*

### 1.0 INTRODUCTION

The concerns over rising inequality rates among household have increased in recent decades. Inequality has long been seen as a determinant of trade policy behaviour (Francois & Rojas-Romagosa, 2011). Inequality refers to the viewpoint of disparities of status, rights and opportunities. For example, 'economic inequality,' which also means 'income inequality', 'financial inequality' or more broadly, inequality in 'living conditions' that distinguishes rights-based, legal approaches to inequality of rights and obligations (United Nations, 2015). The disparity between high, medium and low-income households often widens with social problems affecting the quality of life of individuals or households, such as poor health, poor education, mass unemployment,

and so on. This issue has led to poor economic growth identified as the most important and long-standing social and economic challenges facing the world's developed and developing countries (Kanter, 2015).

Extensive studies have been conducted to discuss the issue of inequality (Albert et.al., 2007; Gradin et.al., 2008; Graafland & Lous, 2018). In these studies, the Gini coefficient is a common means of calculating such disparities and, in the absence of information on household income, infrastructure, education, health and others; certain indicators of standard inequality might not be clearly established. Therefore, various norms, also known as multidimensional inequality, must also be taken into consideration (McKenzie, 2005). This dimension system does not rely on income

alone, but also takes into consideration the deprivation of various other factors, including access to health, education and living standards to measure inequality in a holistic way. The principle is based on the sense that each measure of inequality must involve normative or implicit dimensions that may affect income inequality for individuals or households (Steward, 2013). For example, a dimension of household inequality does not only take into account the total household income, but also evaluates the sum of properties, health, education, access to basic facilities, culminating in a more realistic set of criteria for household inequalities. On this note, it is noted that most of the past studies, inequalities have been measured using a one-dimensional approach of, focusing only on, for example, income, health or education. For instant, economic inequality, especially income inequality refers to the extent to which income (i.e. salary, wages, dividends, welfare benefits, pensions and etc.) is distributed unevenly among individuals or households. Looking at this gap, it is found that the dependency of household inequality measurements focuses on a single aspect, i.e. income from wages regardless of assets such as farmland, livestock, machinery and other assets that generate ancillary income. This side income would add to the degree of disparity between households and other households that depend solely on wages. From another perspective, it will contribute to the reduction of inequalities with better-income households. The well-being aspect should also be taken into consideration in terms of basic facilities impacts both the quality of health and household education. Recognising the significance of measuring inequality from a systemic point of view, this study focuses on identifying multiple dimensions in addition to income for multidimensional inequality households. The aim of this paper is to Identify potential different dimensions that can be used to measure social inequality.

The paper focuses on the aspects of household inequality in the literature section. It is followed by research methods used to

determine the different dimensions that are appropriate for measuring household inequalities. Subsequent findings and discussions explain inequality on the basis of cumulative inequality theory. The findings also result in a multidimensional summary of household inequalities based on the literature. This paper concludes the multidimensional of households' inequality in the concluding section, which also addresses the multidimensional advantages of inequality to the social well-being of households and society.

## 2.0 LITERATURE REVIEW

### 2.1 What is inequality?

Traditionally, inequality is measured by consumption, income or wealth as dimensions. However, these dimensions are considered to be less reliable due to other outcomes, outputs and services that have an effect on social and economic development (Paes de Barros et.al., 2009). This can be explained by taking the example of two households living in urban and rural areas with the same income but with different access to education for children. Another illustration is that different exposure to the Internet can also lead to a different sort education between the two households.

According to McKay (2002), inequality differs from poverty, but both are related. Poverty is based on the position of individuals or households at a certain threshold, such as below the poverty line based on norms such as dietary needs or the standard of living as a whole. Inequality, on the other hand, looks at differences in the standard of life of the whole population. Indications of the relationship between poverty and inequality can be seen in the degree of income disparities, well-being, opportunities for achievement and other factors between households that have an indirect impact on the concept of poverty. (Das, 2015). Theoretically, it can be clarified that, when a household has no income, the larger the disparity that has occurred within the household population. On the other hand,

high-income households would lead to a decline in inequality between households. The essence of the inequality can be explained by highlighting the differences in the wellbeing of individuals/households measured in several dimensions. The term further defines the general emphasis on inequalities among people or families, which encompasses both income inequality and opportunity inequality (United Nation, 2015; Dorn et.al., 2017; Perez-Arce, 2016).

Income inequality has long been the subject of debate between economists and scholars. Such imbalance generates aspects of wellbeing induced by factors beyond their control, such as ethnicity/race, family background, gender, etc., as well as talent and effort. The income inequality hypothesis is based primarily on disparities in living conditions, such as wage/wealth, education, health and nutrition. However, the criterion by which economists measure progress in this respect is generally income or consumption. Nevertheless, it has been argued that income is not sufficient for measuring inequality, which necessarily requires aspects of socio-economic, political and cultural recognition as dimension of inequality (World Bank 2006; Paes de Barros, Ferreira et al. 2009; Stewart, 2013).

Opportunity inequality is due to situations beyond the reach of the individual, impacting the potential of the individual and aiming at the prospect of achievement or potential. The fundamental principle of this disparity is the outcomes, i.e. income, wealth, health status, etc., which are regarded by individuals or society and often referred to as "advantages." This inequality outlook negatively affects the projected income growth of the poor and the prosperous wealthy, which may impair economic growth because it inhibits the creation of human resources by low-income individuals (Aiyar & Ebeke, 2019). However, when linking income inequality and opportunity inequality, these two perspectives of inequalities are particularly relevant in the context of the generation-related dimension. Parental

income and wealth, for example, may give households access to quality education, health services and capabilities for their children (Dorn et.al., 2017).

## 2.2 Inequality Dimensions

There is less consideration of proportions to be used as a reference for measuring household inequalities. Thus, in addition to inequality, this paper also uses dimensions that quantify poverty under the basis that a more equal distribution of wealth and assets would create incentives for the poor to boost their quality of life. It also means that the higher the degree of inequality, the greater the effect on poverty reducing capacity of growth (Naschold, 2002). Based on the inference within the literature, most of the empirical studies choose income as the main dimension to determine inequality and poverty for different countries' survey data (Gradin et.al., 2008). This basis for measuring inequality and poverty only leads to partial understanding of household inequality and often does not give holistic and overall information about the poor especially in terms of non-monetary attributes (Neckerman et.al., 2007; Israel and Roslan, 2015). Graafland and Lous (2018) highlighted that in order to have a comprehensive overview of household inequality and poverty, a study must combine income and non-monetary parameters and therefore, it provides a comprehensive appraisal of people's wellbeing. To elaborate further, Graafland and Lous (2018) terms non-monetary parameter as life satisfaction. From the aforementioned statement, Decron (2001) develops a framework to analyse non-monetary parameters for household inequity and poverty among others consumption, nutrition, health and education. Therefore, other dimensions that contribute to people's wellbeing should be considered as indicators of household inequality and poverty.

Several studies have proposed a variety of dimensions for the detection of inequalities and poverty within households. Alkire and Santos (2010) for example, have

established the dimensions of inequality as an index for acute multidimensional detection of poverty. They define the three dimensions of household inequality, namely health, education and living standards. Such dimensions were chosen on the basis that any multidimensional inequality must require at least such three dimensions; for ease of interpretation; and finally, on the basis of the availability of data. For example, by considering the health, education and standard of living that can contribute to the wealth of a household.

Furthermore, a study by Yi-Ping et.al., (2016) introduced the dimensions of income, food supply, education, and accessibility of water resources as the main dimensions in assessing the vulnerability of household inequality and poverty in the rural household of Shigatze Prefecture in China. In addition, they also stated the basic education i.e. knowledge level; cash income and access to clean water as the most important drivers, to transform rural households' inequality and poverty towards better quality and quantity of life.

Muleta and Deressa, (2014) studied on household inequality and poverty in rural regions in Ethiopia. They found that investment in adult human capital i.e. knowledge and education; is paramount since the majority of the poor household is illiterate. Furthermore, as in the case of Ethiopia, assets holding for example small livestock owned and acquisition of land is also one of the multidimensional parameters of determining household inequality and poverty among the people of rural area in Ethiopia. They also added that this asset is significant in generating independent income from agriculture source for alleviation of inequality and poverty status among the rural people of Ethiopia. Nutrition is also found to be very significant in measuring inequality and poverty status. The result shows that, households with less nutritious diet are more likely to be poor than households with more nutritious diet. The study suggested that government policy must emphasise on

improving human capital among the rural household; encouraging livestock farming and land ownership for agriculture entrepreneurship through policy and incentives.

A study by Albert et.al., (2007), established the main dimensions of asset, income and wellbeing as the multidimensional parameters of measuring household inequity and poverty in the rural area of The Philippines. They redefined asset as human capital; physical assets and social capital; Income refers to job and saving and finally, wellbeing summarized as health and nutrition. To elaborate further, the study-highlighted assets for example knowledge, land social capital is deployed to generate income and in turn improve social wellbeing. Job generates income and saving, which is then spent on goods and services as daily consumption for continuity of life and wellbeing, and to maintain the quality of food and health condition for improving quality and quantity of life.

Tekaa et.al. (2019), Gang et.al (2018) and Kruiy et.al (2010) highlighted food item, income, health access, assets holding, economic social engagement and education and skills as the basis for measuring inequality and poverty of the poor. The researches stated that, the likelihood of being poor especially in the rural area is dependent upon the level of essential food items that can be found in a particular household. Furthermore, income, which refers to engagement with primary entrepreneurship activities for example agriculture, works, trading activities and farming and assets holding also determine the inequality and poverty among rural households. According to Kruiy et.al. (2010), the level of difficulty in accessing basic health services from medical institutions also makes up the variables of inequality and poverty. Gang et, al (2018) found that economic social engagement also one of the determining factors for rural household inequality and poverty whereby the likelihood of being poor is greater if the members of the household do not engage in the community

activities to increase the chances of getting support directly if they are exposed to food shortages. In addition, Tekaa et.al (2019) stressed that one dimension of poverty is education, particularly when poverty is

defined to include a shortage of capability and knowledge deprivation. Tables 1 summarise the household inequality and poverty dimension within the literature.

TABLE 1  
Household inequality and poverty dimensions within the literature

No	Authors	Study Areas	Dimensions
1.	Decron (2001)	Rural Africa	<ul style="list-style-type: none"> <li>• Consumption/Income</li> <li>• Nutrition</li> <li>• Health</li> <li>• Education</li> </ul>
2.	Alkire and Santos (2010)	N/A	<ul style="list-style-type: none"> <li>• Health</li> <li>• Education</li> <li>• Living standards</li> </ul>
3.	Yi-Ping et.al. (2016)	Rural China	<ul style="list-style-type: none"> <li>• Income</li> <li>• Food Supply</li> <li>• Education</li> <li>• Accessibility of water resources</li> </ul>
4.	Muleta and Deressa, (2014)	Rural Ethiopia	<ul style="list-style-type: none"> <li>• Human Capital i.e. knowledge and education</li> <li>• Assets Holding</li> <li>• Nutrition</li> </ul>
5.	Albert et.al. (2007)	Rural Philippines	<ul style="list-style-type: none"> <li>• Assets: Human Capital; Physical Assets and Social Capital;</li> <li>• Income: Job and Saving;</li> <li>• Wellbeing: Health and Nutrition.</li> </ul>
6.	Tekaa et.al. (2019), Gang et.al. (2018) and Kruey et.al. (2010)	Rural Ethiopia Rural Tajikistan Rural Cambodia	<ul style="list-style-type: none"> <li>• Food Item</li> <li>• Income</li> <li>• Health Access</li> <li>• Assets Holding</li> <li>• Economic Social Engagement</li> <li>• Education and Skills</li> </ul>

### 3.0 RESEARCH METHODOLOGY

This study uses content analysis in previous studies to analyse the results. Content analysis is defined as a research method for the subjective interpretation of text data content through a systematic process of identifying themes or patterns (Hsieh and Shannon, 2005). This study collects data by reading the relevant literature on the dimensions of household inequality. Data collected and analysed to fulfill the objective of this study. Previous studies have been read several times using this technique to identify elements related to income inequality, well-being, opportunities for achievement, etc. Keywords are also used to explain the concept

by looking at the context used. The keywords derive from the relevant literature. With this technique, the dimensions that contribute to household inequalities can be identified through literary interpretation and study objectives. Study focused on these dimensions is essential to the creation of a multidimensional to measure household inequality.

### 4.0 FINDINGS AND DISCUSSIONS

Empirical studies indicate that a number of dimensions have been suggested to measure inequalities in the household, which provide holistic and overall information about the poor especially in terms of non-monetary

attributes. Few studies examine how these dimensions such as health, education, living standards, assets and other dimensions show significant cumulative processes that begin early and evolve over time (Albert et.al., 2007; Alkire and Santos, 2010; Cheadle and Goosby 2010; Muleta and Deressa, 2014).

This paper adopts the cumulative inequality (henceforth CI) theory as a theoretical lens in discussing of multidimensional of inequality for households. The establishment of CI theory is the result of criticism over the lack of basic elements required by the cumulative advantage/disadvantage theory (CAD). CAD theory does not explicitly consider many elements essential to a theory for the study of cumulative inequality such as the articulation of the intergenerational transmission of inequality. However, CI theory aims is to specify as a middle-range theory that incorporates elements of macro and micro sociological content in an attempt to bridge both levels of analyses (Merton, 1968).

The justification for adopting theory of CI is because it specifies that social structures that generate inequality that is expressed by demographic and developmental processes over the course of life and that personal trajectories are formed by the accumulation of risk, available resources, perceived trajectories and human agency (Ferraro, Schafer, & Wilkinson, 2016). The theory is introduced by Ferraro et al. (2009), by systematically combining numerous theories and positing that social processes generate inequalities in multiple areas that begin early in life, such as ethnic minority status and other early life disadvantage dimensions such as poverty, in order to establish an unequal access to risks and resources as individuals age (Taylor, et.al. 2018). This is in line with some empirical studies that suggest several dimensions are used in measuring inequality over poverty or households (See Decron (2001; Albert et.al., 2007; Alkire and Santos, 2010; Krueger et.al., 2010; Muleta and Deressa. 2014; Yi-Pinget.al., 2016; Gang et.al., 2018 & Tekaa et.al., 2019).

The presumption of CI is in contrast with the principle of social justice theory, which is at the core of ethical principles for determining the optimal degree or acceptability of income distribution. This theory is related to Sen's (2000) viewpoint on economic inequality, which focuses on people's attitudes about, or reactions about, income distribution. However, in contrast to the CI theory that encourages multidimensionality in the assessment of inequality, the theory of social justice supports the concept of social justice by influencing actual behaviour and actions in the assessment of potential discontent, agitation or political feasibility with certain policies (Parvin, 2018). This theory is important for understanding the concept of justice that maintains order in society. The philosophy of social justice is therefore not suitable for this study.

Cumulative Inequality theory has a connection with sociology which explains the formation of household lifestyles by making explicit observations on nutrition, family health, education, property/assets, living standards and the environment (Jackson, 2015). Although CI focuses on the organisation of the status hierarchy, it is important to understand the origins of household life, where the main principle of this theory is to look at early life situations that play a key role in shaping adults in household inequality (Ferraro et al. 2009). For example, from the point of view of human health and education, a child's birth weight can be measured for the child's health and academic achievement. The individual's academic potential can also be measured through the stability of a child's health in which child brain's growth before the age of three is a very sensitive period. Thus, healthy diet is also essential for the development of individual brain's growth. It clarified that if a household does not have access to a nutritious diet due to lack of resources and low living conditions, this has contributed to disparities with other households with higher income and better access to food supply

(Evans & Kantrowitz, 2002; Mowen, 2010; Collins, Munoz & Jaja, 2016).

Infrastructure, building materials and ownership of certain durable assets are dimensions that can be used to measure inequality for households. Infrastructure inequality can be measured by counting the number of bedrooms in a residential household. The types of toilet (traditional toilet or flush toilet) may also be used as an indication. Both indicators are used to assess the quality of life by evaluating the scale of this infrastructure; the welfare of households can be defined as having an effect on the educational growth of their children (lack of bedrooms-no study space) and health (the toilet situation is not good). In terms of ownership of assets, the measurement can be done by looking at the potential of these assets as a source of income in addition to existing household income (McKenzie, 2005).

Transportation and machinery are sources of assets that can be used to generate income through business and agriculture. This illustrates the relationship between asset and income dimensions in the assessment of inequality. Furthermore, looking at the relationship between the two dimensions of assets and education, the inability to own a car or a motorcycle for any household, will lead to a lower probability of attending schools that lead to a lower level of access to quality education for households. This is in line with Klaus and Pedro's assertion in 2000 that the unequal distribution of assets between households has implications for educational effectiveness.

On the basis of CI theory, it can be said that multidimensional inequality is the best indicator for measuring well-defined and comprehensive household inequality. Derived from the literature of empirical studies and the concept of the underlying theory of CI, this paper presents a finding of multidimensional of household inequality as illustrated Figure 1.

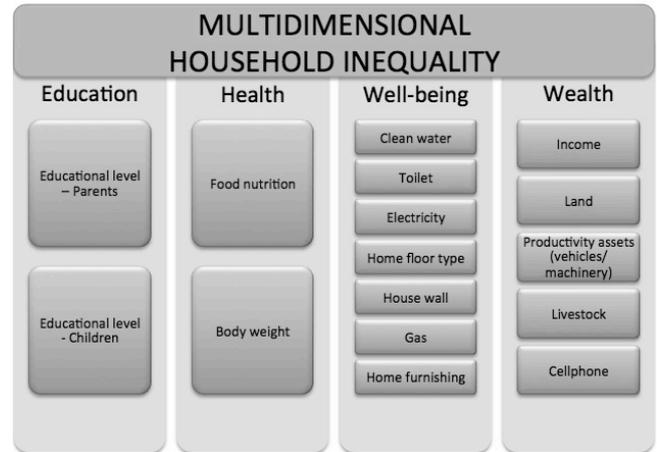


FIGURE 1  
A finding of multidimensional household inequality  
Source: Derived from literature

There are four dimensions identified as seen in the summary above. Such dimensions, i.e. education, health, wellbeing and income, are developed on the basis of the findings and literature of the empirical studies. For each dimension, consisting of several sub-dimensions that measure the inequalities of households on the basis of a dimensional objective. Wealth dimension, for example, are made up of sub-dimensions such as income, land, productivity assets, livestock and mobile phones, which act cumulatively with each other to achieve the objective of measuring household wealth inequality. In this context, cross-dimensional (multidimensional) is suggested for a more reliable of household inequality. For example, consumption of healthy food and access to basic amenities such as electricity, water, sanitation and good Internet access would contribute to the well-being of the individual, which indirectly facilitates the process of individual learning. This shows that in order to measure education level of certain individual in the household, almost the entire dimensions from the Figure 1 need to be considered. Therefore, a more comprehensive assessment taking into account the influence of each dimension should be considered. This paper thus, proposes a multidimensional approach to assessing household inequality.

## 5.0 CONSLUSIONS

While some extensive studies address the issue of inequality, most studies do measure inequality using a one-dimensional approach, focusing only on, for example, income, health or education. Moreover, the measure of inequality is more likely to focus on economic inequality, in particular income inequality applies to the Gini coefficient, which only measures the extent to which income, wages, dividends, welfare benefits, pensions and etc., are unevenly distributed among individuals or households. This may contribute to poorer standards of inequality assessment. Thus, this paper identifies various dimensions for measuring household inequality known as multidimensional inequality. This multidimensional system depends not only on the income dimension, but also considers the advantages/disadvantages of various elements derived from other dimensions, including access to health, education and living standards, which influence assessment of inequality. This is in line with the principle based on the sense that each dimension of inequality must involve normative or implicit dimensions that can affect income inequality for individuals or households.

Furthermore, in order to define the multidimensional range for measuring households' inequalities, the related literature has been studied and analysed to meet the objectives of this study. The findings indicate that several dimensions have been identified, such as dimensions for wealth, well-being, health, and education (refer Figure 1) that can be used holistically to measure household inequality. This holistic method of measurement will provide a clearer criterion for inequality in order to enable society to reduce the gap of inequality for society wellbeing.

This paper contributes in a number of ways. First, a literature review analysis was conducted to identify dimensions other than income that could help to quantify household disparities more accurately. Second, this study provides additional knowledge on the

discussion of household inequality from the point of view of cumulative inequality. Third, multidimensional household inequality can be used as a reference or guidance for policy makers to assess household disparities across populations.

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