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Transcending Multidimensional Poverty Classes in Urban Developing Municipalities

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ABSTRACT

The study draws on the multidimensional poverty index to characterize the poverty status of households in the Gauteng City Region, South Africa. In particular, it applies multinomial logit regression and mediation analysis to determine the factors influencing the transition of poor and vulnerable households into the multidimensionally nonpoor category. Data was obtained from the 2020/2021 Quality of Life Survey on 13,616 households in seven Gauteng municipalities. Six factors, namely, working hours, medical aid, education, age, indigence, and income, were significant in transcending the multidimensional poverty classes. Other important factors were transport expenditure, public transport proximity, access to medical aid, food support, household size, skipping a meal, and gender. Being a recipient of social grants and population group had small but significant indirect mediator effects on transcending the multidimensional poverty classes. Sustainable social support systems, improved access to healthcare, employment opportunities and affordability, and proximity to the transport system will help poor households transcend multidimensional poverty classes.

1 | Introduction

Poverty is a complex and enduring issue that prompts extensive debate. Its interpretations vary, influenced by different perspectives on its significance, scale, and effects on individuals and society. Poverty can be measured using several indicators, including low life expectancy, limited educational opportunities, and a decreased per-capita real GDP (Chakravarty and D'Ambrosio 2006). These factors contribute to developing a multidimensional poverty index, which reflects the various influences on socioeconomic class structures (D'Attoma and Matteucci 2023; Cummings 2017). These categorize individuals into hierarchical groups, typically including the affluent, middle-class, and various lower-class strata, such as the chronically poor, transient poor, and vulnerable populations (Cummings 2017; Schotte et al. 2018).

Households in the lower class often experience financial difficulties, leading to food scarcity and limited access to resources. In contrast, middle-class and affluent families benefiting from better economic conditions are likelier to live in areas with higher tax bases. This advantage enables their children to attend well-funded schools, perpetuating a cycle where quality education is scarce in impoverished neighborhoods (Troost et al. 2023).

In South Africa, the COVID-19 pandemic has intensified inequality and poverty, resulting in significant job losses. To transcend poverty, low-income households need to access the socioeconomic support structures outlined in the National Development Plan and various government initiatives. These measures aim to foster equitable growth and improve the living standards of marginalized communities (Mlaba 2020).

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In Gauteng province, the most important economically in South Africa, poverty reduction initiatives have reached millions, including school uniforms for one million learners and dignity packs for seven million girls [Gauteng Provincial Government (GPG) 2023; Gauteng Department of Social Development (GDSD) 2023]. Despite these efforts, poverty levels remain high, with the World Bank highlighting ongoing unemployment and inequality. The wealth gap has widened, risking South Africa's economic standing by 2028. Many households depend on government support, with significant portions facing food insecurity, as one in nine people lacks access to adequate food [Gauteng City Region Observatory (GCRO) 2023; Mushayanyama et al. 2023].

This study thus addresses the following research questions:

- How can low-income households transcend multidimensional poverty in the Gauteng City Region?
- What factors influence the change in multidimensional poverty classes among low-income households in the Gauteng City Region?

Previous studies in South Africa have revealed the exacerbated conditions of poverty among the public and established that economic, social, and political factors may influence poverty. (McGrath 1984; Woolard and Klasen 2005; Sekhampu 2013; Schotte et al. 2018; Mdluli and Dunga 2022). The study builds on the current literature to explore the determinants of multidimensional poverty and social class in the municipalities/cities of developing countries and how low-income households can escape chronic poverty.

The rest of the article is presented as follows: after the introduction, the literature review, materials and methods, discussion, conclusions, and policy recommendations follow.

2 | The Study Area

Despite being an upper-middle-income nation, approximately 55.5% of the population (30.3 million people) lives in poverty at the national upper poverty line (992 rands), while 13.8 million people (25%) are food insecure [Statistics South Africa (Stats SA) 2022]. With each passing census, Gauteng, the country's economic powerhouse, has become more densely populated. The highest increase in population density occurred between the 2011 and 2022 census estimates (18.7% increase), from 675 to 831 people per km² (Gotz et al. 2023). Figure 1 shows the Gauteng map reflecting the province's worst areas by poverty headcount.

The map shows that the poverty incidence in the province also has a geographic dimension. Most of the poorest people live on the edges of the province, mainly on the southern and western edges (e.g., Westonaria and Merafong City). Smaller pockets of the poorest people are also located in the central parts, with a high headcount ratio (Alexandra, Diepsloot, and Tembisa).

3 | Literature Review

The geographical disparities theory highlights that poverty is unevenly distributed due to historical, social, economic, and environmental factors. Social networks influence resource distribution and economic opportunities. Targeted interventions are essential to address unique regional challenges and promote inclusive development (Bradshaw 2007; Jakobsen et al. 2022; Addae-korankye 2019). Fuseini et al. (2024), drawing from a scoping review of the literature from 2000 to 2022, argued the relevance of the geographical disparities theory in influencing poverty in sub-Saharan Africa and Asia. He posits that the root causes of poverty in these regions stem from the interplay between physical conditions, human activities, and the environmental context in which communities reside, with a recommendation of tailor-made programs to target impoverished populations based on their geographical locations.

This study's conceptual framework provides a multi-layered social-class framework that applies to contexts characterized by high inequality and poverty risks, such as many low- and middle-income nations, including South Africa (Obi and Tafa 2016). The conceptual framework of poverty and social class is shown in Figure 2.

Socioeconomic classes in South Africa can be categorized into five distinct groups: chronic poor, transient poor, vulnerable nonpoor, middle class, and elite. The chronically poor earn below the poverty line of ZAR992/person/month (US\$54) and are characterized by a high probability of persistent poverty. In contrast, transient poor individuals have above-average chances of falling into poverty. About 76% of the population and the vulnerable nonpoor face daily poverty risks [Statistics South Africa (Stats SA) 2022]. The middle class, representing approximately 20% of the population, has diminished significantly, shrinking by 55% between 2017 and 2020 (Bussitech 2023). This income polarization leads to a concentration of low-income earners and a limited elite class, with only 4% of South Africans classified as affluent. Persistent socioeconomic challenges disproportionately affect the Black African population, particularly women, due to entrenched inequalities and inadequate social policies (Gumede 2021; Folarin 2021).

Studies on the factors affecting poverty have emerged in micro-, macro-, and contextual-level approaches. The micro-level approach contends that individual characteristics or behaviors can account for poverty (D'Attoma and Matteucci 2023). The macro or structural level approach asserts that economic, social, and political issues may contribute to people's limited resource access. Finally, the contextual level approach emphasizes the significance of neighborhood-level variables in understanding poverty (Garza-Rodriguez et al. 2021). D'Attoma and Matteucci (2023) highlight the need to develop mechanisms beyond the focus on income-based solutions, especially as antidotes to absolute and relative poverty, which is the contribution of this study, as it aims to identify factors influencing households to transcend multidimensional poverty in Gauteng and reduce households' risk of chronic poverty.

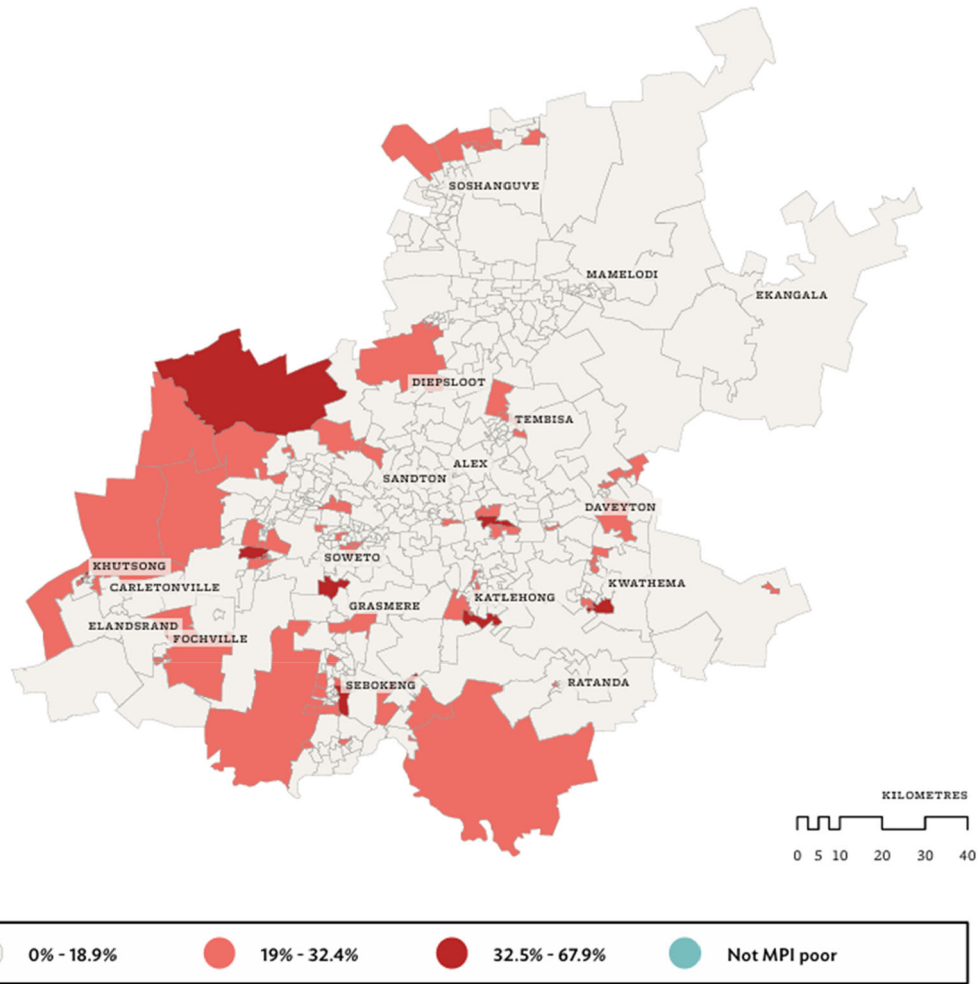


FIGURE 1 | Gauteng map showing the province's worst areas by poverty headcount. *Source:* Mushongera et al. (2018).

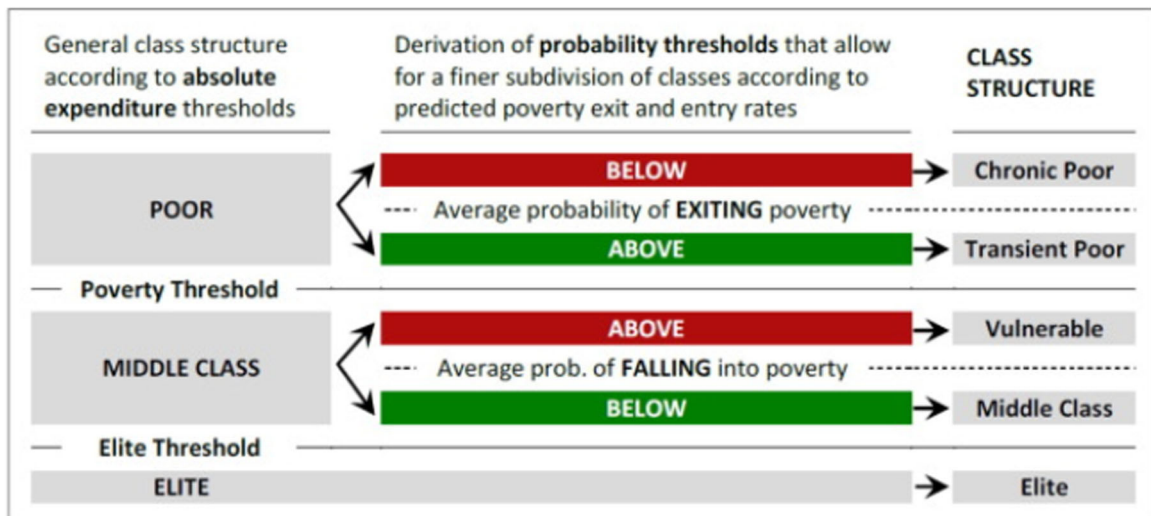


FIGURE 2 | Conceptual framework: Determinants of multidimensional poverty and social-class status. *Source:* Schotte et al. (2018).

4 | Materials and Methods

This section describes the data set's source, sampling methods, and the study's inferential techniques.

4.1 | Data

The study employed primary data from the GCRO QoL survey obtained in 2020 and 2021 as a sample frame for the household

heads. The Gauteng City-Region Observatory (GCRO) (2023/2021) is a publicly available data set derived from a household-based survey of randomly selected individuals (18+). All respondents were interviewed at their dwellings. The study permitted a random sample of 13,616 respondents from 529 wards in the Gauteng City Region (i.e., City of Ekurhuleni; City of Johannesburg; City of Tshwane; Emfuleni; Lesedi; Merafong; Midvaal and Mogale). All data from the QoL surveys is publicly available under a CC BY-SA 4.0 licence. The study is mostly focused on providing an overview of what happened during the pandemic by giving a deeper insight into the effect of the COVID-19 pandemic in Gauteng, South Africa. The data set is appropriate to map existing socioeconomic challenges in Gauteng, which were prevalent even before the COVID-19 pandemic.

4.2 | Multidimensional Poverty Classification

A multidimensional poverty approach was adopted to classify households, using various dimensions and indicators of poverty to assess the extent of deprivation and associated poverty levels. The approach adopted follows steps applied in constructing the global Multidimensional Poverty Index (MPI) and the South African Multidimensional Poverty Index (SAMPI). For more details on calculating the MPI, see Alkire et al. (2015) and the United Nations Development Programme (UNDP) (2019). The dimensions, indicators, and weights used in this study are shown in Table 1.

It is necessary to highlight that a complete MPI could not be calculated due to data limitations. However, the available dimensions and indications were used to calculate the deprivation score, then to classify households into three levels: not poor, moderate poverty (vulnerable), and severe poverty (chronically poor). According to Statistics South Africa (2022), a household was classified as multidimensionally poor if the

deprivation score was equal to or above 33.3%. The poor households were then classified as having moderate poverty if their deprivation score was between 1/5 and 1/3 and severe poverty if the deprivation score was 1/2 or greater (Oxford Poverty and Human Development Initiative OPHI 2018).

4.2.1 | Empirical Model

A multinomial logit model was applied to evaluate the determinants of poverty. This statistical approach emphasizes the global and regional factors of poverty. The dependent variable Y consists of more than two nominal categories that lack an ordinal structure. One group is selected as the reference category for the other groups (Liao 1994; Karakara and Dasmani 2019).

The statistical model of the study is thus:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \quad (1)$$

where Y_i is the Poverty status of households in the Gauteng City Region; β_0 is the intercept of the model; X_1 – X_5 are coefficients of explanatory variables; and ε is an i.i.d. error term.

4.2.2 | Mediation Analysis

After conducting the multinomial logit regression analysis, two independent variables, namely, social grants and population group, were statistically insignificantly different from zero. This necessitated further analysis of these variables to understand their underlying relationships with other variables (Rudolph et al. 2019).

There are various theoretical approaches to guide mediation analysis. Baron and Kenny's approach is commonly used,

TABLE 1 | Dimensions, indicators, and weights used in the calculation of the poverty index.

Dimension	MPI indicator	Deprived if	Weights
Health (1/3)	Nutrition	If household is food insecure	1/3
	Child mortality	If any child under the age of 5 has died in the past 12 months	No data
Education ()	Years of schooling	If no household member aged 15 or older has completed five years of schooling	No data
	School attendance	If any school-aged child (aged 7 to 15) is out of school	No data
Living Standards (1/3)	Fuel for cooking	If household is using paraffin/wood/coal/dung/other/none	1/18
	Fuel for lighting	If household is using paraffin/candles/nothing/other	1/18
	Fuel for heating	If household is using paraffin/wood/coal/dung/other/none	No data
	Sanitation	If not a flush toilet	1/18
	Drinking water	If no piped water in dwelling or on stand	1/18
	Housing	If an informal shack/traditional dwelling/caravan/tent/other	1/18
Economic activity (1/3)	Assets	If household does not own more than one of radio, television, telephone or refrigerator and does not own a car	1/18
	Unemployment	If all adults (aged 15 to 64) in the household are unemployed	1/3

Source: Statistics South Africa (2022).

but other approaches include targeted minimum loss-based estimation (TMLE) (see Baron and Kenny 1986; Rudolph et al. 2019; Jung 2021). This study adopted the Baron and Kenny approach, which involves setting two regressions (see Rudolph et al. 2019). Several computations are done to give direct effects (which do not occur through the mediator) and indirect effects (which occur through the mediator) (Rudolph et al. 2019; Goss-Sampson 2020).

1. Outcome variable as the dependent variable:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6XM + \varepsilon \quad (2)$$

2. Mediator as the dependent variable:

$$M = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon \quad (3)$$

where the variables are defined as in model (1) above.

The dependent variable is the poverty status represented by the MPI variable having four categories: nonpoor, vulnerable nonpoor, moderate (transient) poverty, and severe (chronic) poverty. Two mediators, namely, social grants and population-group variables, were analyzed. Various independent variables were included as covariates.

The JAMM package in R (version 4.4.0) and the Medmod module in Jamovi computer software (Jamovi project 2022) were used to assess the potential mediation effects. The `jammGLM` function from the JAMM package is designed to fit generalized linear models and can handle complex mediation analysis. This analysis computed bootstrap confidence intervals using the bias-corrected and accelerated (BCa) method, which ensures robust and reliable interval estimates. (Gallucci 2024). The maximum likelihood (ml) method was applied for handling missing data.

5 | Results

This section presents the study's results: descriptive statistics, diagnostic tests, and the multinomial logit regression model findings.

5.1 | Descriptive Analysis

Table 2 shows the determinants of poverty as determined by the Quality-of-Life Survey in the Gauteng City Region of South Africa.

About 32% of households had matriculated, while 25% were holders of a tertiary education. 43% had failed to progress beyond the secondary level (grade 11).

Most respondents were in the 30–34 and 35–39 age categories, each accounting for 13% of the sample, while the smallest proportion (3%) was in the 18–19 age range.

Approximately 13% of households earned below R800, indicating extreme poverty, while 25% earned below R3200, which reflects moderate poverty. Another 25% earned between R3201 and R12800, a range most common among the lower middle class. Among these households, 30% worked full-time, 11% part-time, and 33% were unemployed.

In terms of medical aid, 77% of households were not covered by any form of medical insurance and relied on public health facilities. Additionally, 36% of households (classified as indigent) were enrolled with the municipality for rate rebates or other subsidized services, such as electricity, refuse collection, and water.

A significant percentage (18%) spent between R501 and R1000 on transport, while 10% did not incur any transport costs. Furthermore, 77% of respondents reported spending about 10 min walking to access public transport. Approximately 24.2% of households reported skipping a meal in the 12 days leading up to the survey.

About 11% of households reported poor health, 2% described their health as very poor, while 54% reported good health.

Regarding food support, around 13% of households received food parcels from the government or other nongovernmental organizations. Approximately 54% of households had an average size of 1–3 members, and 25% had 4–5 members. About 75.8% reported skipping a meal in the 12 days before the interview.

Females headed half of the households, while the other half were male-headed. Additionally, 48% of respondents reported receiving support grants from government or other nongovernmental organizations. Specifically, 48% of households received national government support grants, such as old age, child support, and disability.

Most respondents (80%) identified as black African, with whites making up 13% of the population. Coloreds and Indians each represented 3%, while other races accounted for 0.2%.

5.2 | Multidimensional Poverty Deprivation

About 51% of the households were not multidimensionally poor, with about 49.5% in the nonpoor category, while 1.6% were in the nonpoor but vulnerable category. The multidimensionally poor was 46%, with 31% having moderate poverty and 15% having severe poverty. The deprivation in the poverty indicators is shown in Figure 3. In general, the least deprivations were observed in living-standard indicators, which were all below 20%. The food security deprivation was 26%, and economic activity (employment) deprivation was 31%.

5.3 | Diagnostic Test

The overall fit of the multinomial logit regression model entails assessing how well the model explains the data. Several metrics and tests can be applied. The likelihood ratio test for the

TABLE 2 | Descriptive statistics.

Variable		Frequency	%
Education	None	265	2
	Primary	1261	9
	Secondary (Grade 11)	4288	32
	Matric	4311	32
	Tertiary	3388	25
Age	18–19	452	3
	20–34	4628	34
	35–49	4313	13
	50–64	2749	20
	65+	1474	11
Income	No income	161	1
	R1–R800	1568	12
	R801–R3200	3594	26
	R3201–R12800	2703	20
	R12801–R25600	839	6
	R25601–51200	621	5
	R51201+	346	3
Working time	Full-time	4064	30
	Part-time	1552	11
	Not working	4482	33
Medical aid	Yes	3147	23
	No	10,413	77
Indigency	Yes	4873	36
	No	8743	64
Transport expenditure (monthly)	R0	1360	10
	R1–R50	870	6
	R51–R100	1622	12
	R101–R250	1678	12
	R251–R500	1875	14
	R501–R1000	2378	18
	R1001–R2000	1774	13
Public transport proximity	R2001+	866	6
	0–10 min	10,485	77
	11–20 min	2081	15
	21–30 min	536	4
	31–40 min	46	0.3
Health status	40 min and above	133	1
	Excellent	4525	33
	Good	7409	54
	Poor	1456	11
	Very poor	226	2

(Continues)

TABLE 2 | (Continued)

Variable		Frequency	%
Food support	Yes	1717	13
	No	11,899	87
Household size	1–3 members	7713	57
	4–5 members	3851	28
	6+ members	2052	15
Skipped a meal	Yes	3296	24.2
	No	10,320	75.8
Gender	Male	6800	50
	Female	6816	50
Grant recipient	Yes	6547	48
	No	7069	52
Population group	Black African	10,933	80.3
	Colored	378	2.8
	Indian/Asian	210	1.5
	White	2078	15.3
	Other	17	0.1

Source: Authors.

multinomial logit regression model gave a chi-square statistic of 5825, with 45 degrees of freedom and a p -value of < 0.001 . This implies that the model with the predictors better fits the data than the null model. McFadden's R^2 is 0.3873, the Cox and Snell R^2 is 0.1976, and the Nagelkerke R^2 is 0.4558, which indicates a good fit for a multinomial logit regression model.

5.4 | Multinomial Logit Regression Analysis

The study was conducted during the COVID-19 era when many urban households faced job losses, and various family structures were impacted by illness and death. This had implications for how these households could transcend multidimensional poverty classes. Variables most likely to mirror the effects of COVID-19 are working time, income, and welfare support programs.

The dependent variable had four categories based on poverty levels: severe poverty (chronic poor), moderate poverty (transient poor), vulnerable nonpoor, and the nonpoor. The nonpoor category was the reference category. Several socio-economic factors were considered, and the results are presented in Table 3.

Based on Table 3 above, the significant variables influencing severe poverty, moderate poverty, and vulnerable nonpoor categories are interpreted in terms of their odds ratios (likelihood) and statistical significance (p -values). Thirteen out of the fifteen independent variables were significant for the severe poverty category. Ten variables were significant for the moderate poverty category, and the vulnerable nonpoor category had seven significant variables. Six independent variables,

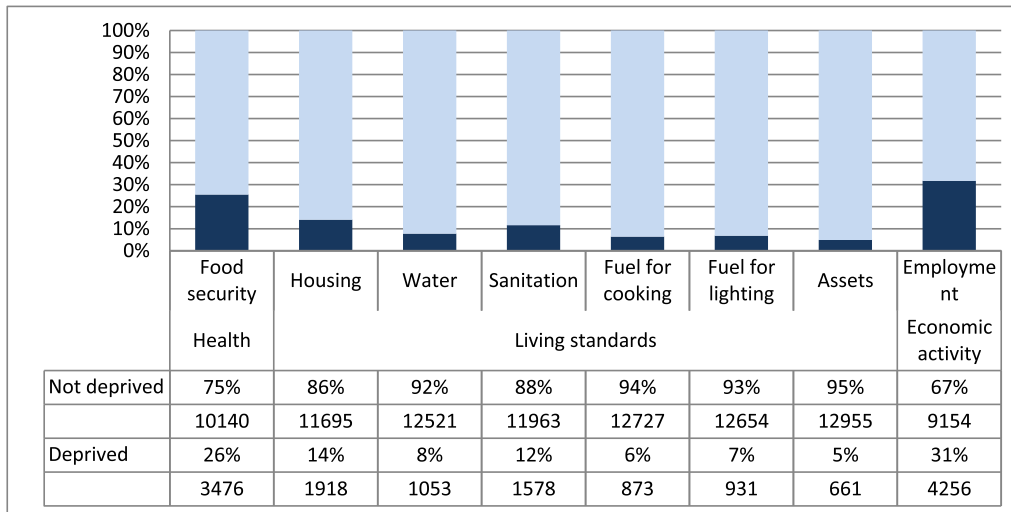


FIGURE 3 | Deprivation in poverty indicators. Source: Authors.

TABLE 3 | Summary of the multinomial logit regression analysis.

Predictor	Chronic/Severe poverty			Transient/Moderate poverty			Vulnerable nonpoor		
	Odds ratio	<i>p</i>		Odds ratio	<i>p</i>		Odds ratio	<i>p</i>	
Intercept	858.618	0.001	***	68.218	0.001	***	32.989	0.002	***
Education	0.659	0.001	***	0.860	0.004	***	0.615	0.001	***
Age	0.943	0.014	**	0.954	0.014	**	0.845	0.001	***
Income	0.537	0.001	***	0.738	0.001	***	0.741	0.017	**
Working time	0.029	0.001	***	0.122	0.001	***	0.737	0.068	*
Medical aid	0.295	0.001	***	0.777	0.048	**	0.069	0.009	***
Indigency	0.470	0.001	***	0.799	0.015	**	0.165	0.001	***
Transport expenditure	0.952	0.094	*	0.951	0.027	**	0.976	0.671	
Public transport proximity	1.351	0.001	***	1.052	0.421		1.405	0.001	***
Health status	0.750	0.001	***	0.950	0.451		0.799	0.162	
Food support	1.375	0.026	**	1.255	0.064	*	1.455	0.173	
Household size	0.874	0.013	**	0.960	0.360		0.846	0.194	
Skipped a meal	1.271	0.001	***	1.125	0.057	*	0.928	0.695	
Gender	1.083	0.465		1.207	0.030	**	0.869	0.532	
Social grant	0.961	0.757		0.875	0.207		1.411	0.209	
Population group	0.909	0.303		1.031	0.562		0.309	0.101	

***, **, * denote 1%, 5%, and 10% significance levels, respectively.

Source: Authors.

namely, working hours, medical aid, education, age, indigence, and income, were significant for all three categories. Six additional significant variables for severe poverty were transport expenditure, public transport proximity, health status, food parcel, household size, and skipping a meal (number). For moderate poverty, three additional variables were significant, namely, gender, food parcel, and skipping a meal. One additional variable for the vulnerable nonpoor was significant: transport proximity. Two variables, namely, population group and social grant, were insignificant for any categories.

The analysis of the results begins with the significant variables across all groups and then shifts to those specific to each category.

5.4.1 | Significance Across All Categories

Education is highly significant across all groups at the 1% level. The odds ratios are as follows: severe poverty has 0.659, moderate poverty has 0.860, and the vulnerable nonpoor has 0.615.

This implies that higher education decreases the likelihood of being in these groups. Specifically, for severe poverty, each unit increase in education decreases the odds by 34.1%, for moderate poverty by 14%, and for vulnerable nonpoor by 38.5%.

Age is important; older age is associated with a reduced likelihood of being in these groups. For severe poverty, the odds ratio is 0.943, meaning each additional year of age decreases the odds by 5.7%. For moderate poverty, the odds ratio is 0.954, which reduces the odds by 4.6%. The odds ratio for the vulnerable nonpoor is 0.845, which reduces the odds by 15.5%.

Higher-income significantly reduces the likelihood of being poor or being vulnerable to poverty. For severe poverty, an odds ratio of 0.537 means that each unit increase in income decreases the odds by 46.3%. For moderate poverty (odds ratio 0.738), a unit increase in income decreases the odds by 26.2%, and for vulnerable nonpoor (odds ratio 0.741) decreases by 25.9%.

Working time is a critical determinant across all the categories. Note that, based on the data, working time in this study is not a scale variable, i.e., it does not represent the actual measurement of time. It was computed as an ordinal variable, with people not employed or working denoted by 0, then those working part-time 1, and full-time 2, representing an increasing amount of working time. The severe poverty category (odds ratio 0.029) means an increase in working time (based on this ordinal variable, not directly in terms of hours) drastically reduces the likelihood of severe poverty by 97.1%. For the moderate poverty category (odds ratio 0.122), it reduces the likelihood of moderate poverty by 87.8%. For the vulnerable nonpoor category (0.737), the vulnerability is reduced by 26.3% (however, this is marginally significant). This means that providing work opportunities, whether part-time or full-time, reduces the risk of remaining in and being vulnerable to poverty.

Medical aid was also found to be a significant variable. Severe poverty (odds ratio 0.295) implies that having medical aid reduces the likelihood of severe poverty by 70.5%. Moderate poverty (odds ratio 0.777) reduces the likelihood of moderate poverty by 22.3%. For the vulnerable nonpoor (odds ratio 0.069), having medical aid reduces the likelihood of vulnerability by 93.1%.

The Indigency variable had a significant effect on reducing poverty. For the severe poverty category (odds ratio 0.470), being categorized as indigent and getting the associated benefits reduces the likelihood of severe poverty by 53%; for moderate poverty (odds ratio 0.799), it decreases the likelihood of moderate poverty by 20.1%; and for the vulnerable nonpoor (odds ratio 0.165), it reduces the likelihood of being vulnerable by 83.5%.

5.4.2 | Significance for the Individual Category

Six additional significant variables for *severe poverty* were transport expenditure, public transport proximity, medical aid, food support, household size, and skipping a meal. In terms of transport expenditure (odds ratio 0.952), higher transport expenditure slightly reduces the odds of severe poverty by 4.8%, with marginal statistical significance. This does not mean an increase in transport costs but expenditure, which could mean

more expenditure on transport, relates to travel for economic opportunities. Proximity to public transport was highly significant, with an odds ratio of 1.351, meaning living further away from public transport increases the likelihood of severe poverty by 35.1%. The public transport proximity variable was coded as 1 (0–10 min), up to 5 (40 min and above). So, a higher value or an increase means an increased distance, i.e., further away and not the opposite.

Health status (odds ratio 0.750) infers that better health status reduces the likelihood of severe poverty by 25%. Receiving food support (1.375) suggests increased odds of severe poverty by 37.5%. With household size (odds ratio 0.874), a larger household size slightly reduces the odds of severe poverty by 12.6%. This should be understood because the average household size in this study is 3.5, so larger households do not mean very big. On the contrary, the number of skipped meals (odds ratio 1.271) suggests that having more skipping a meal in the household increases the likelihood of severe poverty by 27.1%.

For the *moderate poverty category*, three additional variables were significant, namely, gender, food support, and skipping a meal. Gender (odds ratio 1.207) suggests that having a male household head increases the odds of moderate poverty by 20.7%. Transport expenditure (odds ratio 0.951) implies higher transport expenditure, reducing moderate poverty odds by 4.9%. Skipping a meal (odds ratio 1.125) implies that having household members skipping a meal slightly increases the odds of moderate poverty by 12.5%, with marginal significance. This effect was also observed for the severe poverty category.

For the vulnerable nonpoor, one additional variable was significant. Proximity to public transport was highly significant, with an odds ratio of 1.405, meaning living further away from public transport increases the likelihood of being vulnerable to poverty by 40.5%.

5.5 | Mediation Analysis Results

The results of mediation analysis include indirect, direct, and total effects. The indirect effect measures the relationship between the independent and dependent variables mediated by the mediator. In contrast, the direct effect indicates the relationship between the independent variable and the dependent variable that cannot be attributed to the mediator. Jung (2021) cautions that a statistically significant association in the mediation analysis does not always confirm the presence of mediation; hence, the interpretation of results should be made within the logic of a theoretical basis. The following variables were included as mediators: social grant and population group. Table A1 (Appendix A) shows the mediation analysis with social grants as the mediator.

6 | Discussion

This paper analyzed the factors influencing low-income households to transcend multidimensional poverty in the Gauteng City Region of South Africa. We consider various poverty-related

factors from the GCRO quality of life survey and link them to other relevant studies. The discussion of the results follows the presentation in the previous section, which starts with the multinomial logistic regression findings discussed with the common significant variables across all poverty status categories and then moves to the ones for each category.

This is followed by the mediation analysis for the two insignificant variables, population group and social grants.

Education was found to influence poverty significantly. Higher levels of education reduce the likelihood of being in any of the poverty groups, with their associated vulnerability. The study's results align with those of Ngepah et al. (2023), who identified a notable inverse correlation between education and susceptibility to poverty, particularly for individuals whose prospective consumption falls below the poverty line. Due to a shift to online classes, COVID-19 had little effect on the education variable, except for some exceptional cases of access to internet and electronic gadgets in rural areas (Menon and Motala 2022). The study recommends that decision-makers leverage education to mitigate the risk of poverty by improving its standards, thereby enabling students to participate effectively in the international job market.

Age is also a major factor in transcending poverty; Older age significantly reduces the likelihood of being in poverty groups and associated vulnerability. In old age, people may reduce working hours, retire due to health issues, or earn lower wages if they continue working, leading to a higher risk of poverty (Bambeni 2024). Many older persons in countries without strong social-protection systems are vulnerable to economic insecurity and poverty, due to inadequate savings and limited options for support (Romig 2024). South Africa's case is different, due to the availability of the old age support grant. Substantial evidence exists of cash transfers reducing poverty and vulnerability among older people in Latin America and sub-Saharan Africa (Adisa et al. 2019). For poor households in Gauteng, age-related vulnerabilities further amplified existing inequalities, affecting how individuals navigated the pandemic and their ability to transcend poverty. Older adults faced higher risks of severe illness and death from COVID-19 (Shifa et al. 2022).

Higher income significantly reduces the likelihood of being poor or vulnerable to poverty. The relationship between high income and poverty is complex and multifaceted, often varying depending on a particular society's context, economic policies, and social structures. The impact of wealth and income access to resources highlights the significance of higher income in alleviating poverty (Salamova et al. 2023). High-income individuals typically have better access to education, healthcare, housing, and other resources to help them escape poverty. Conversely, low-income people may face barriers to accessing these resources, perpetuating a cycle of poverty (McMaughan et al. 2020).

Working time (hours spent working) is very important in reducing multidimensional poverty and poverty-class transformation. This is very important, especially considering that one of the dimensions of the MPI is economic activity, with

employment as the indicator. The significance of working time confirms that the need to create and provide more work opportunities – part-time or full-time – reduces the risk of remaining in and being vulnerable to poverty. While having full-time jobs is the desired option, it is important to highlight having part-time work can also reduce poverty; however, with little allowance for a household to transcend poverty (Gebel and Gundert 2023). In the COVID-19-era, and the present day, low-income households and informal traders saw reduced working hours but also developed enhanced business skills, and digital businesses increased their use of digital platforms and created online work platforms. However, the challenge was that most poor households didn't have access to internet services due to a lack of income (Raniga and Ringson 2022). This called for localized, low-cost internet solutions, such as community-owned networks, digital literacy training, and access to affordable, subsidized digital devices.

Medical aid was also found to be a significant variable. Having medical aid reduces the likelihood of being in any of the poverty categories. Overall, medical aid significantly decreases their likelihood of remaining in poverty and reduces the risk of falling into poverty, as it plays a critical role in maintaining financial stability. Only 25% of the respondents were covered by any medical aid during the COVID-19 era. This result supports Jamison (2018) argument that sickness leads to lost productivity; thus, investing in health by increasing people's access to health insurance saves lives and empowers them to transcend poverty classes. Policy interventions aimed at providing medical coverage for low-income earners and the vulnerable nonpoor will help combat poverty. When considering such policies, governments can consider the relative benefits of providing medical insurance versus the costs of providing poverty aid. Of course, such calculations cannot be taken in isolation from the substantial social, political and environmental costs of poverty.

Indigency is crucial in reducing poverty. Being indigent and getting the associated benefits reduces the likelihood of poverty. Poor households are likely to register as indigent in their respective municipalities. The findings from the study confirm Pillay (2021) assertion that indigence policies help meet the needs of poor households, even if such interventions represent a marginal percentage of poverty-class change. In general, indigency status significantly reduces the risk of poverty, probably due to additional support and resources allocated to indigent individuals. While efforts were made to provide indigency support during COVID-19 in Gauteng, several challenges, such as inadequate coverage and resource constraints, made it difficult for poor households to transcend poverty classes. (Mushayanyama et al. 2023).

Transcending to the nonpoor tier requires, apart from food distress relief, improvements in the monitoring and evaluation of government poverty-alleviation programs, targeted policy interventions for marginalized households and employment initiatives. Currently, social safety nets are unevenly distributed across the province, with only 100,000 indigent households benefitting from ESP (free essential services) in the City of Johannesburg and 3000 in Tshwane, which is still a minimal number considering the levels of poverty in the province. Mazenda et al. 2021).

Transport expenditure and *proximity to public transport* were found to influence poverty significantly. The findings indicate that higher transport expenditure slightly reduces the likelihood of severe poverty. Poor people spend more on transport, which means they can travel and open up economic opportunities. Living further from public transport increases poverty risk. South Africa's expensive and inefficient public-transport system exacerbates the problem for low-income workers (Kgwedi 2022). The relationship between transport expenditure and poverty is attributable to affordability, mobility, and accessibility (Litman 2021). A household is vulnerable if it cannot afford transportation options, either public or private (Litman 2021), which limits its ability to reach critical social or economic activities in a reasonable time, with ease and affordable cost (Alonso-Epelde et al. 2023). COVID-19 intensified socioeconomic inequalities in Gauteng, worsening transport access for low-income residents and deepening poverty. It prompted public transport traveling at half capacity that's stretched the resilience and adaptive capacity of South Africa's transport systems, highlighting the need for more robust disaster management policies and planning (Chakwizira 2022).

Poor households mostly do not have stable income sources; they rely on public transport and are often involved in menial jobs. As such, any economic shock resulting in rising transport expenditure will result in chronic poverty. (Chakwizira 2022). Public transport is not just a matter of convenience, but a lifeline for many living in poverty, and its disruption during COVID-19 had long-lasting consequences. Addressing these challenges requires a renewed focus on making public transport more accessible, affordable, and inclusive, particularly for marginalized and vulnerable populations (Luke and Heyns 2019).

Beaulieu (2007) notes that, in addition to socioeconomic factors, access to food also depends on local conditions, such as public transportation, proximity to retail grocery stores, and the price of food. The poor are less likely to spend on transport, thus limiting their access to food. The cost assumed by households provides clues on the affordability of public transport costs for households and how those costs are distributed between socioeconomic levels and users (Knipe and Krygsman 2024). According to Gandelman et al. (2019), high general transportation costs make it harder for poor and middle-class households to access services and opportunities that enable them to make a living and improve their quality of life.

When we combine these two insights regarding the proportional allocation of available funds to *public* transportation and food, we suggest that the small probabilities of shifts between the classes can be explained. While we do not have statistical breakdowns of which Gauteng families constitute which categories of poverty (i.e., chronic, transient, or vulnerable poor), we surmise that the chronic and transient poor would use up a higher proportion of their available funds on public transport, thus diminishing access to food. Transport expenditure, in other words, is not enough to shift poverty classes. However, now that access is less problematic for Gauteng families, the focus of policy interventions can shift to other important factors determining poverty.

Better health status was found to reduce the odds of severe poverty. Better health means lower rates of chronic diseases, improved access to healthcare, enhanced immune systems, and the ability to endure physical and mental stress (Schotte and Zizzamia 2023). Better health helps reduce the risk of severe poverty and facilitates upward movement across poverty classes. (Petersen et al. 2022). Good health minimizes financial burdens during crises like COVID-19, supporting employment and education. Healthier individuals are more resilient to economic shocks, reducing poverty vulnerability. Improved health services and mental resilience enable communities to cope better, helping mitigate the pandemic's effects and decreasing the risk of extreme poverty for many. (Petersen et al. 2022).

Receiving *food support* was found to increase the odds of severe poverty. It is important to acknowledge that food support is prevalent mainly among very poor and low-income households. While food support provides critical assistance in times of crisis, it does little to shift poverty classes in any systemic fashion, due to its sporadic nature. From a food group perspective, the Gauteng weekly food parcel relies heavily on starch-rich staple foods (maize meal and rice). The food parcel could provide the reference family with enough protein-source foods and oil for approximately 2 weeks. However, the food parcel lacks dietary diversity in dairy, eggs, fruit and vegetables (Vermeulen et al. 2020).

The food assistance provided during the pandemic in Gauteng alleviated some of the impacts of COVID-19, but it also highlighted the shortcomings of temporary relief efforts in enabling movement among poverty classes. To address the changing dynamics of poverty, it is essential to implement long-term food security initiatives, such as community kitchens and sustainable food distribution networks, within broader poverty reduction strategies (Schotte and Zizzamia 2023).

Household size was found to reduce the odds of severe poverty slightly. Most empirical literature suggests that household size negatively affects poverty. Lekobane and Seleka (2017) argue that an increase in household size will increase the likelihood of poverty in the middle class, since more resources are required to meet the needs of household members. Arif and Bilqees (2006) found that larger households are more likely to stay in poverty if the number of household members increases. Consequently, Adepoju (2020) argues that, as household members increase, there is a higher probability that households will experience chronic poverty increases. Our findings do not fit neatly with these literature insights. We surmise there may be a certain 'tipping point' for household size, where the poverty-class movement becomes more significant.

Related to household size is *skipping a meal*, the findings in this study indicate that skipping a meal in the household increased the odds of both severe and moderate poverty. Meal skipping is often linked to food insecurity, economic strain, and poor dietary outcomes. The relationship between meal skipping, household size, and poverty can highlight broader socioeconomic vulnerabilities. To transcend poverty, we must address these challenges, ensuring access to balanced diets and strengthening community support for vulnerable households. Vermeulen et al. (2020).

Gender findings show that male-headed households had increased odds of moderate poverty. Gender norms and discrimination can perpetuate inequalities and contribute to higher levels of poverty among women (Wei et al. 2021). Women's empowerment greatly influences health, nutrition, education, and the overall well-being of societies, children, and households (Gu and Nie 2021; Wei et al. 2021). Targeted poverty alleviation programs have not always reached the expected recipients due to exclusion, among others, on patrician, gender, and origin, with most deprived households in Gauteng having emigrated from other countries and South African provinces. (Omotoso et al. 2022). The COVID-19 pandemic has intensified the challenges related to gender in managing households, caring for children, and mobility, especially in informal settlements (Howe 2022). To foster more equitable and resilient urban environments in the post-pandemic era, planning policies must tackle these concerns, particularly in light of the continued significance of migration and its effects on government-funded services and programs in Gauteng.

The *social grants* and population group variables were found to be insignificant for all poverty categories. A mediation analysis was done to capture the intricate relationships between various socioeconomic factors and poverty status, mediated by social grants and population group.

All variables included in the study exhibited significant but small indirect effects through social grants. Specifically, factors such as household size, indigency, and age showed small positive indirect effects on poverty, indicating that increases in these variables slightly contribute to higher poverty levels due to the influence of social grants.

Social grants are designed to provide a safety net for vulnerable populations, but their effectiveness can vary based on demographic circumstances. Larger households tend to experience higher levels of poverty, as increased dependency ratios can outweigh the benefits provided by social grants (Macket 2020). Additionally, indigent households are more likely to qualify for social grants; however, the relationship between indigency and poverty is complex. Patel et al. (2023) suggest that while social grants may alleviate some financial burdens, they can also create a reliance on these funds. Consequently, social grants can have a small positive indirect effect on poverty, particularly when the grants do not adequately cover living expenses (Winchester et al. 2020). Age also plays a role in how effectively social grants combat poverty. According to Bila and Biyase (2022), younger households with children may face heightened poverty levels as they navigate economic challenges, even while receiving social assistance. Conversely, factors such as medical aid and transportation expenses have negative indirect effects, indicating reduced poverty through social grants. According to Macket (2020), while social grants aim to alleviate poverty, their effectiveness can be undermined by high medical aid and transport costs. These expenses can lead to the misallocation of resources, challenges in accessibility, and the perpetuation of inequalities. Addressing these issues could enhance the overall impact of social grants on poverty reduction.

The population-group mediator also showed significant but small indirect effects. Variables like transport expenditure and

education had small negative indirect effects on poverty, suggesting these factors reduce poverty when mediated by population group. Transport expenditure in South Africa is critical in poverty alleviation by facilitating access to employment and services. However, the distribution of transport infrastructure remains unequal, with many poorer, predominantly Black, and rural communities still facing limited access to affordable, reliable public transport (Schotte et al. 2022). The spatial legacy of apartheid, which concentrated Black populations in peri-urban and informal settlements far from economic hubs, means that transport remains an unequal resource, constraining the mobility of disadvantaged groups (Strauss 2019). Thus, while investments in transport could reduce poverty, their impact is muted unless they directly address these racial and geographic disparities.

Similarly, education is a key determinant in breaking the poverty cycle, but in South Africa, the racialized nature of education systems persists. Despite access improvements, Black South Africans still face significant barriers to quality education, including overcrowded schools, inadequate facilities, and lower educational outcomes compared to their white counterparts (Plagerson 2021). This unequal access to education means that its poverty-reducing potential is more limited when mediated by race, as marginalized groups often receive lower returns on educational investment. According to Nwosu and Oyenubi (2021), the interplay of race, poverty, and COVID-19 in Gauteng revealed how ongoing historical injustices and deep-rooted inequalities still impact the health, well-being, and economic security of marginalized communities, especially Black South Africans. Reforms should aim to enhance healthcare accessibility, alleviate poverty, tackle overcrowded housing, and ensure sufficient social support for individuals most at risk from systemic threats such as pandemics.

6.1 | Limitations of the Study

The study was conducted during the COVID-19 era when many urban households faced job losses, and various family structures were impacted by illness and death. This had implications on how these households could transcend multidimensional poverty classes. It is important to emphasize that similar socioeconomic challenges existed before COVID-19 due to various factors, including corruption, mismanagement of resources, and inadequate service delivery. Post-COVID-19, the socioeconomic challenges still prevail, with loss of unemployment due to load-shedding and other global economic shocks impacting price levels and general living costs.

7 | Conclusions

The study aimed to identify the main factors impacting the transition of multidimensionally poor and vulnerable households into the multidimensionally nonpoor category in the Gauteng City Region.

The study findings show little difference between poverty classes, with few marginal effects. This implies that any economic shock

can move this class towards chronic poverty and make it a burden on the government and local authorities.

Low-income households in Gauteng are vulnerable, as reflected by key food-distress indicators, such as skipping meals, employment challenges, working time skewed towards part-time work, a lack of medical aid coverage, transport expenditures, and reliance on food parcels.

In addition to numerous initiatives to end poverty, most vulnerable nonpoor households have descended into moderate poverty. Other rising living costs are economic shocks such as high energy and fuel costs. This means salaries have been eroded due to inflationary pressures or retrenchment. This means a need for other targeting initiatives, such as direct cash transfers, transfers in kind, targeted subsidies, public works, and social funds.

These findings suggest that to help households transition from multidimensional poverty and reduce their vulnerability, the Gauteng City Region needs to promote further and strengthen the education system, create income and employment opportunities, enhance healthcare access, and build sustainable social-support systems that create real empowerment opportunities instead of dependency. Transport is critical in tackling poverty. Efforts should be directed at improving public transport systems so that they are affordable, easily accessible, and closer to where people live. With high unemployment rates affecting many poor households, programs such as housing, indigence, social grants, and public works could be enhanced by improved monitoring and evaluation systems. The monitoring and evaluation system requires, among others, proper institutionalization, political leadership, specialized human resources, and governmental coordination to ensure the quality of outcomes and foster improvements in public policies. Gauteng provincial government poverty-alleviation projects will reap maximum benefits by consistently tracking progress against defined objectives and implementing corrective actions when needed.

The nuanced focus on factors affecting socioeconomic class movement may help policy interventions yield tremendous success if policymakers are keen to tackle multidimensional poverty. It also indicates there is merit for scholars in pursuing socio-class movement on a case-by-case basis.

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The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in Data First (Gauteng City-Region Observatory) at <https://doi.org/10.25828/wemz-vf31>.

References

- Addae-korankye, A. 2019. "Theories of Poverty: A Critical Review." *Journal of Poverty, Investment and Development* 48, no. 1: 55–62. <https://doi.org/10.7176/JPID/48-08>.
- Adepoju, A. 2020. "Determinants of Multidimensional Poverty Transitions Among Rural Households in Nigeria." *Review of Agricultural and Applied Economics (RAAE)* 23, no. 1: 55–64.
- Adisa, T. A., I. Abdurraheem, and S. B. Isiaka. 2019. "Patriarchal Hegemony: Investigating the Impact of Patriarchy on Women's Work-Life Balance." *Gender in Management: An International Journal* 34, no. 1: 19–33. <https://doi.org/10.1108/GM-07-2018-0095>.
- Alkire, S., J. E. Foster, S. Seth, M. E. Santos, J. M. Roche, and P. Ballon. 2015. *Multidimensional Poverty Measurement and Analysis*. Oxford University Press. <https://multidimensionalpoverty.org>.
- Alonso-Epelde, E., X. García-Muros, and M. González-Eguino. 2023. "Transport Poverty Indicators: A New Framework Based on the Household Budget Survey." *Energy Policy* 181: 113692. <https://doi.org/10.1016/j.enpol.2023.113692>.
- Arif, G. M., and F. Bilqees. 2006. "Chronic and Transitory Poverty in Pakistan: Evidence From a Longitudinal Household Survey." *Pakistan Development Review* 46, no. 2: 111–127.
- Bambeni, N. 2024. "Perspective Chapter: Social Ageing Challenges Faced by Older Adults Exposed to Conditions of Underdevelopment and Extreme Poverty." In *Social Aspects of Ageing - Selected Challenges, Analyses, and Solutions*, edited by A. InKlimczuk, 23–37. IntechOpen. <https://doi.org/10.5772/intechopen.107116>.
- Baron, R. M., and D. A. Kenny. 1986. "The Moderator–Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations." *Journal of Personality and Social Psychology* 51, no. 6: 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>.
- Beaulieu, L. J. 2007. Strengthening Our Nation's Food Assistance Programs. In collaboration With the RIDGE Program, Southern Rural Development Center.
- Bila, S., and M. Biyase. 2022. "Determinants of Subjective Poverty in Rural and Urban Areas of South Africa." Working Paper 2. Economic and Well-Being Research Group EWRG.
- Bradshaw, T. K. 2007. "Theories of Poverty and Anti-Poverty Programs in Community Development." *Community Development* 38, no. 1: 7–25. <https://doi.org/10.1080/15575330709490182>.
- Bussitech. 2023. How Much You Need to Earn to Be Middle Class in South Africa? <https://businesstech.co.za/news/wealth/701787/how-much-you-need-to-earn-to-be-middle-class-in-south-africa-2/>.
- Chakravarty, S. R., and C. D'Ambrosio. 2006. "The Measurement of Social Exclusion." *Review of Income and Wealth* 52, no. 3: 377–398. <https://doi.org/10.1111/j.1475-4991.2006.00195.x>.
- Chakwizira, J. 2022. "Stretching Resilience and Adaptive Transport Systems Capacity in South Africa: Imperfect or Perfect Attempts at Closing COVID-19 Policy and Planning Emergent Gaps." *Transport Policy* 125: 127–150. <https://doi.org/10.1016/j.tranpol.2022.06.003>.
- Cummings, E. 2017. "Impact of Poverty & Social Class on Families & Society." <https://study.com/academy/lesson/impact-of-poverty-social-class-on-families-society.html>.
- D'Attoma, I., and M. Matteucci. 2023. "Multidimensional Poverty: An Analysis of Definitions, Measurement Tools, Applications and Their Evolution Over Time Through a Systematic Review of the Literature Up to 2019." *Quality & Quantity* 58, no. 1: 3171–3213. <https://doi.org/10.1007/s11135-023-01792-8>.
- Folarin, K. 2021. Poverty and Inequality in South Africa. <https://www.semanticscholar.org/paper/Poverty-and-Inequality-in-South-Africa-Folarin/8c0c06fa6bd4b7eba3919fbc136276458d20b684>.

- Fuseini, M. N., F. Enu-Kwesi, I. A. Abdulai, M. Sulemana, T. A. Aasoglenang, and M. K. Domapielle. 2024. "Poverty in the Global South: Does the Geographical Theory Offer Any New Insight to Understanding Penury?" *Cogent Social Sciences* 10, no. 1: 1–20. <https://doi.org/10.1080/23311886.2024.2321710>.
- Gallucci, M. 2024. *_jAMM: Advanced Mediation Models_*. R package version 1.2.4, commit c8938bc4e9d878c7a8797d1b1806c51ba774adbf. <https://github.com/jamovi-amm/jamm>.
- Gandelman, N., T. Serebrisky, and A. Suárez-Alemán. 2019. "Household Spending on Transport in Latin America and the Caribbean: A Dimension of Transport Affordability in the Region." *Journal of Transport Geography* 79: 102482.
- Garza-Rodriguez, J., G. A. Ayala-Diaz, G. G. Coronado-Saucedo, E. G. Garza-Garza, and O. Ovando-Martinez. 2021. "Determinants of Poverty in Mexico: A Quantile Regression Analysis." *Economies* 9, no. 2: 60.
- Gauteng City-Region Observatory (GCRO). 2021. Quality of Life Survey 2020–2021 Round 6. Version 1. Johannesburg: GCRO [producer], 2021. Cape Town: DataFirst [distributor], 2022. <https://doi.org/10.25828/wemz-vf31>.
- Gauteng City-Region Observatory (GCRO). 2023. "Gauteng City Region." <https://www.gcro.ac.za/about/the-gauteng-city-region/>.
- Gauteng Department of Social Development (GDSD). 2023. GDSD Annual Performance Plan: 2022/23. Gauteng Department of Social Development Directorate Communication. Johannesburg.
- Gauteng Provincial Government (GPG). 2023. *Gauteng 2030 and Beyond. Gauteng Provincial Government*. Government Printers.
- Gebel, M., and S. Gundert. 2023. "Changes in Income Poverty Risks at the Transition From Unemployment to Employment: Comparing the Short-Term and Medium-Term Effects of Fixed-Term and Permanent Jobs." *Social Indicators Research* 167: 507–533. <https://doi.org/10.1007/s11205-023-03118-5>.
- Goss-Sampson, M. 2020. JAMM: JAMovi Modules for Mediation Analysis [Jamovi Module]. <https://jamovi-amm.readthedocs.io/>.
- Gotz, G., R. Ballard, E. K. Hassen, et al. 2023. Statistical Surprises: Key Results From Census 2022 for Gauteng. GCRO Rapid Research Paper. Gauteng City-Region Observatory. <https://doi.org/10.36634/PTPX7414>.
- Gu, R., and F. Nie. 2021. "Does Empowering Women Benefit Poverty Reduction? Evidence From a Multi-Component Program in the Inner Mongolia Autonomous Region of China." *Journal of Integrative Agriculture* 20, no. 4: 1092–1106. [https://doi.org/10.1016/S2095-3119\(20\)63436-0](https://doi.org/10.1016/S2095-3119(20)63436-0).
- Gumede, V. 2021. "Revisiting Poverty, Human Development and Inequality in Democratic South Africa." *Indian Journal of Human Development* 15, no. 2: 183–199. <https://doi.org/10.1177/097370302111032961>.
- Howe, L. B. 2022. "The Gender–Poverty–Mobility Nexus and the Post-Pandemic Era in South Africa." *Urban Planning* 7, no. 3: 35–48. <https://doi.org/10.17645/up.v7i3.5463>.
- Jakobsen, P., E. Jönsson, and H. G. Larsen. 2022. "Geographies and Theories of Geography: An Introduction." In *Socio-Spatial Theory in Nordic Geography*, edited by P. Jakobsen, E. Jönsson, and H. G. Larsen. Springer. https://doi.org/10.1007/978-3-031-04234-8_1.
- Jamison, D. T. 2018. "Disease Control Priorities: Improving Health and Reducing Poverty." *Lancet* 391, no. 10125: e11–e14.
- Jamovi Project. 2022. jamovi. Version 2.3 [Computer Software]. <https://www.jamovi.org>.
- Jung, S. J. 2021. "Introduction to Mediation Analysis and Examples of Its Application to Real-World Data." *Journal of Preventive Medicine and Public Health* 54, no. 3: 166–172.
- Karakara, A. A., and I. Dasmani. 2019. "An Econometric Analysis of Domestic Fuel Consumption in Ghana: Implications for Poverty Reduction." *Cogent Social Science* 5, no. 1: 1697499.
- Kgwedi, M. 2022. "The Economic and Time Impact of Poor Access to Public Transport in South African Metropolitan Areas." Unpublished Master's diss., University of Stellenbosch.
- Knipe, M., and S. Krygsman. 2024. "The Opportunity Cost of Household Transport Expenditure in South Africa." *Journal of Transport and Supply Chain Management* 18: 10. <https://doi.org/10.4102/jtscm.v18i0.1081>.
- Lekobane, K. R., and T. B. Seleka. 2017. "Determinants of Household Welfare and Poverty in Botswana, 2002/2003 and 2009/2010." *Journal of Poverty* 21, no. 1: 42–60.
- Liao, F. T. 1994. *Interpreting Probability Models: Logit, Probit and Other Generalized Linear Models, 101, Quantitative Applications in the Social Sciences*. Sage Publications.
- Litman, T. 2021. *Transportation Affordability – Evaluation and Improvement Strategies Abstract*, Victoria Transport Policy Institute. Canada. <https://coilink.org/20.500.12592/1kdfd9>.
- Luke, R., and G. J. Heyns. 2020. "An Analysis of the Quality of Public Transport in Johannesburg, South Africa Using an Adapted SERVQUAL Model." *Transportation Research Procedia* 48: 3562–3576. <https://doi.org/10.1016/j.trpro.2020.08.095>.
- Macket, O. 2020. "Social Grants as a Tool for Poverty Reduction in South Africa? A Longitudinal Analysis Using the NIDS Survey." *African Studies Quarterly* 19, no. 1: 40–64.
- Mazenda, A., K. Matjane, M. Maleka, T. Mushayanyama, and T. Masiya. 2021. "Challenges in the Implementation of the City of Johannesburg's Expanded Social Package in Alleviating COVID-19 Induced Food Insecurity." *Africa's Public Service Delivery & Performance Review* 9, no. 1: 8. <https://doi.org/10.4102/apsdpr.v9i1.470>.
- McGrath, M. 1984. *The Determinants of Poverty: A Theoretical Analysis*. Carnegie Conference Paper No. 269: Cape Town.
- McMaughan, D. J., O. Oloruntoba, and M. L. Smith. 2020. "Socio-economic Status and Access to Healthcare: Interrelated Drivers for Healthy Aging." *Frontiers in Public Health* 8: 231. <https://doi.org/10.3389/fpubh.2020.00231>.
- Mdluli, P., and S. Dunga. 2022. "Determinants of Poverty in South Africa Using the 2018 General Household Survey Data." *Journal of Poverty* 26, no. 3: 197–213.
- Menon, K., and S. Motala. 2022. "Pandemic Disruptions to Access to Higher Education in South Africa: A Dream Deferred?" *South African Journal of Higher Education* 36, no. 4: 47–65. <https://doi.org/10.20853/36-4-5188>.
- Mlaba, K. 2020. 1 in 5 South Africans Are Living in Extreme Poverty. UN Report. <https://www.globalcitizen.org/en/content/1-in-5-south-africans-living-extreme-poverty-un/>.
- Mushayanyama, T., M. Chitiga-Mabugu, A. Mazenda, and M. S. Mangai. 2023. "Upward Mobility Implications on the Aspirant Middle Class in Emerging Economies." *Journal of Public Affairs* 23, no. 4: e2865. <https://doi.org/10.1002/pa.2865>.
- Ngepah, N., T. Makgalemele, and C. S. Saba. 2023. "The Relationship Between Education and Vulnerability to Poverty in South Africa." *Economic Change and Restructuring* 56, no. 1: 633–656. <https://doi.org/10.1007/s10644-022-09439-8>.
- Nwosu, C. O., and A. Oyenubi. 2021. "Income-Related Health Inequalities Associated With the Coronavirus Pandemic in South Africa: A Decomposition Analysis." *International Journal for Equity in Health* 20: 21. <https://doi.org/10.1186/s12939-020-01361-7>.
- Obi, A., and S. Tafa. 2016. "The Determinants of Household Poverty in South Africa." *Africa's Public Service Delivery & Performance Review* 4, no. 4: 516–538.

- Omotoso, K. O., J. Adesina, and O. G. Adewole. 2022. "Profiling Gendered Multidimensional Poverty and Inequality in Post-Apartheid South Africa." *African Journal of Science, Technology, Innovation and Development* 14, no. 2: 564–576.
- Oxford Poverty and Human Development Initiative (OPHI). 2018. Global Multidimensional Poverty Index 2018: The Most Detailed Picture to Date of the World's Poorest People, Oxford Poverty and Human Development Initiative (OPHI), University of Oxford, UK.
- Patel, L., V. Dikoko, and J. Archer. 2023. *Social Grants, Livelihoods, and Poverty Responses of Social Grant Beneficiaries in South Africa, Research Brief, February 2023*. University of Johannesburg. https://www.uj.ac.za/wp-content/uploads/2023/02/csda_-_social-grants-livelihood_-_research-brief_-_a4_-_jan-2023_5-1.pdf.
- Petersen, J., N. Hettich, R. Baumkötter, et al. 2022. "The Burdens of Poverty During the COVID-19 Pandemic." *Frontiers in Sociology* 7: 995318. <https://doi.org/10.3389/fsoc.2022.995318>.
- Pillay, K. B. 2021. An Exploration of the eThekweni Municipality's Indigent Policy and Its Administration With Focusing on the Provision of Basic Services. Unpublished Doctoral diss., University of Kwazulu-Natal.
- Plagerson, S. 2021. "Mainstreaming Poverty, Inequality and Social Exclusion: A Systematic Assessment of Public Policy in South Africa." *Development Southern Africa* 40, no. 1: 191–207. <https://doi.org/10.1080/0376835X.2021.1993793>.
- Raniga, T., and J. Ringson. 2022. "The Implications of COVID-19 on Informal Trading in Gauteng, South Africa." *The African Journal of Governance and Development (AJGD)* 11, no. 1.2: 307–327. <https://doi.org/10.36369/2616-9045/2022/v11si2a6>.
- Romig, K. 2024. Social Security Lifts More People Above the Poverty Line Than Any Other Programmes Centre on Budget and Policy Priorities. <https://www.cbpp.org/research/social-security/social-security-lifts-more-people-above-the-poverty-line-than-any-other>.
- Rudolph, K. E., D. E. Goin, D. Paksarian, R. Crowder, K. R. Merikangas, and E. A. Stuart. 2019. "Causal Mediation Analysis With Observational Data: Considerations and Illustration Examining Mechanisms Linking Neighborhood Poverty to Adolescent Substance Use." *American Journal of Epidemiology* 188, no. 3: 598–608.
- Salamova, A., I. Khazhuev, and A. Ismailov. 2023. "Poverty Reduction Strategy in Countries With Economies in Transition." *E3S Web of Conferences* 451: 01019. <https://doi.org/10.1051/e3sconf/202345101019>.
- Schotte, S., and R. Zizzamia. 2023. "The Livelihood Impacts of COVID-19 in Urban South Africa: A View From Below." *Social Indicators Research* 165: 1–30. <https://doi.org/10.1007/s11205-022-02978-7>.
- Schotte, S., R. Zizzamia, and M. Leibbrandt. 2018. "A Poverty Dynamics Approach to Social Stratification: The South African Case." *World development* 110: 88–103.
- Schotte, S., R. Zizzamia, and M. Leibbrandt. 2022. "Snakes, Ladders, and Loaded Dice: Poverty Dynamics and Inequality in South Africa Between 2008 and 2017." *South African Journal of Economics* 90, no. 2: 214–242. <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/saje.12308>.
- Sekhampu, T. 2013. "Determination of the Factors Affecting the Food Security Status of Households in Bophelong, South Africa." *International Business & Economics Research Journal (IBER)* 12, no. 5: 543–550. <https://doi.org/10.19030/iber.v12i5.7829>.
- Shifa, M., D. Gordon, M. Leibbrandt, and M. Zhang. 2022. "Socioeconomic-Related Inequalities in COVID-19 Vulnerability in South Africa." *International Journal of Environmental Research and Public Health* 19, no. 17: 10480. <https://doi.org/10.3390/ijerph191710480>.
- Statistics South Africa (Stats SA). 2022. Statistical Release P0310.1. Poverty Lines 2022. <https://www.statssa.gov.za/publications/P03101/P031012021.pdf>.
- Strauss, M. 2019. "A Historical Exposition of Spatial Injustice and Segregated Urban Settlement in South Africa." *Fundamina* 25, no. 2: 135–168. <https://doi.org/10.17159/2411-7870/2019/v25n2a6>.
- Troost, A. A., M. van Ham, and D. J. Manley. 2023. "Neighbourhood Effects on Educational Attainment. What Matters More: Exposure to Poverty or Exposure to Affluence?" *PLoS One* 18, no. 3: e0281928. <https://doi.org/10.1371/journal.pone.0281928>.
- United Nations Development Programme (UNDP). 2019. How to Build a National Multidimensional Poverty Index (MPI): Using the MPI to Inform the SDGs. United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHI), University of Oxford. https://www.mppn.org/wp-content/uploads/2019/07/How_to_Build_Handbook_2019_PDF.pdf.
- Vermeulen, H., C. Muller, and H. C. Schönfeldt. 2020. "Food Aid Parcels in South Africa Could Do With a Better Nutritional Balance." *Conversation Africa*. <https://theconversation.com/food-aid-parcels-in-south-africa-could-do-with-a-better-nutritional-balance-136417>.
- Vermeulen, S. J., T. Park, C. K. Khoury, and C. Béné. 2020. "Changing Diets and the Transformation of the Global Food System." *Annals of the New York Academy of Sciences* 1478, no. 1: 3–17. <https://doi.org/10.1111/nyas.14446>.
- Wei, W., T. Sarker, W. Żukiewicz-Sobczak, et al. 2021. "The Influence of Women's Empowerment on Poverty Reduction in the Rural Areas of Bangladesh: Focus on Health, Education and Living Standard." *International Journal of Environmental Research and Public Health* 18, no. 13: 6909. <https://doi.org/10.3390/ijerph18136909>.
- Winchester, M. S., B. King, and A. Rishworth. 2020. "It's Not Enough: Local Experiences of Social Grants, Economic Precarity, and Health Inequity in Mpumalanga, South Africa." *Wellbeing, Space and Society* 2: 100044. <https://doi.org/10.1016/j.wss.2021.100044>.
- Woolard, I., and S. Klasen. 2005. "Determinants of Income Mobility and Household Poverty Dynamics in South Africa." *Journal of Development Studies* 41, no. 5: 865–897.

Supporting Information

Additional supporting information can be found online in the Supporting Information section.