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# Strengthening the Participatory and Community-Based Approach in the Fight Against Social Inequalities in Mbandaka, DRC: A Quantitative Analysis of 200 Households

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## Abstract

**Background:** In secondary cities of the Democratic Republic of the Congo, social inequalities persist despite the participatory mechanisms promoted by donors. This study examines the association between community participation and the perception of reduced inequalities in Mbandaka, the capital of Équateur Province.

**Methods:** A cross-sectional survey was conducted among 200 heads of households selected using two-stage stratified random sampling. Data were collected using a structured questionnaire. Univariate and bivariate analyses (Chi-square test) and binary logistic regression were performed.

**Results:** The population is predominantly young (70% are under 36 years of age) and economically vulnerable (68% live below the poverty line). Nine significant associations were identified. Logistic regression shows that strong community participation increases the probability of perceiving a reduction in inequalities by a factor of 5.87 ($p < 0.001$), after adjusting for gender, age, education, income and occupation.

**Conclusion:** Community participation is a powerful lever but requires supporting policies to avoid reproducing existing inequalities.

**Keywords:** Community participation, social inequalities, Mbandaka, DRC

## 1. Introduction

In sub-Saharan African countries, persistent economic and social disparities are hindering progress towards the Sustainable Development Goals (United Nations, 2015). The Democratic Republic of the Congo (DRC) ranks 179th out of 191 countries according to the Human Development Index

(United Nations Development Programme [UNDP], 2022). However, the participatory and community-based approach is frequently presented as a tool capable of improving the alignment of public policies with local needs (Mansuri & Rao, 2013). However, its actual effectiveness in environments marked by structural inequalities remains a matter of debate (Gaventa & Barrett, 2012). This study aims to examine whether strengthening citizen participation can help mitigate the perception – and potentially the reality – of social inequalities in the city of Mbandaka, a secondary urban area in the DRC about which little is known.

## 2. Methodology

### 2.1. Study design and framework

This research adopts a cross-sectional, descriptive and analytical design (Creswell & Creswell, 2018). The survey took place between January and February 2023 in the city of Mbandaka (Equateur Province), which has a population of approximately 345,000 spreads across three municipalities: Mbandaka, Wangata and Bolenge (National Institute of Statistics [INS], 2022).

### 2.2. Population and sampling

The target population consisted of all heads of households aged 18 or over who had been residing in Mbandaka for six months or more. A two-stage stratified random sampling method was used. The sample size was calculated using Schwartz's formula for a proportion ($p = 0.50$, margin of error 5%, confidence level 95%), yielding a theoretical sample size of 384 households. Due to budgetary constraints, 200 households were ultimately surveyed (52% of the optimal size), which remains sufficient to detect average effects. Within each household, the survey was administered to the head of the household or, in their absence, to their spouse.

### 2.3. Data collection instrument

A structured questionnaire comprising 45 questions was administered face-to-face by five trained interviewers. The sections covered: (i) socio-demographic characteristics; (ii) access to basic services (water, electricity, healthcare, education); (iii) community participation (attendance at meetings, involvement in community projects, membership of associations); (iv) perceptions of inequality and solidarity; (v) institutional trust. The questionnaire was pre-tested with 20 households (not included in the final sample).

### 2.4. Variables and analyses

The main dependent variable was the perception of a reduction in social inequalities, measured by a three-point question ('perceived reduction', 'no change', 'perceived worsening'), recoded as a binary variable for logistic regression (perceived reduction = 1 vs no reduction = 0).

The independent variables included: gender, age, educational attainment, occupation, monthly income, length of residence, household size, housing- tus, and a community participation score (0–12) recoded into three categories: low (0–4), medium (5–8), high (9–12).

Analyses were performed using SPSS version 26. Associations were tested using the chi-square test of independence, with the strength of association measured by the adjusted odds ratio. A binary logistic regression model was then fitted with all independent variables. The significance threshold was set at $\alpha = 0.05$.

### 2.5. Ethical considerations

The study was approved by the Ethics Committee of the Faculty of Social Sciences at the University of Mbandaka (No. 045/FSS/UEQ/2023) and by Mbandaka City Council (No. 012/MM/2023). Each respondent gave their informed consent after being provided with information. Anonymity and confidentiality were guaranteed.

## 3. Results

### 3.1. Sociodemographic characteristics of the sample

The sample of 200 heads of household is predominantly male (60.0%). The average age is 31.7 years, with a high proportion of young respondents (70.0% are under 36). In terms of education, 60.0% of respondents had attained at least secondary education. Finally, traders (30.0%) and the unemployed (25.0%) were the dominant socio-professional categories.

**Table 1.** Breakdown of respondents by gender

| Gender | Number (n) | Percentage (%) |
|---|---|---|
| Male | 120 | 60 |
| Female | 80 | 40 |
| **Total** | **200** | **100** |

**Comment:** The predominance of men (sex ratio of 1.5) is explained by the difficulties in accessing women during field surveys, as they are often occupied with domestic tasks or informal trade.

**Table 2.** Distribution of respondents by age group

| Age group (years) | Number (n) | Percentage (%) |
|---|---|---|
| 18–25 | 65 | 32.5 |
| 26–35 | 75 | 37.5 |
| 36–45 | 40 | 20 |
| 46 and over | 20 | 10 |
| **Total** | **200** | **100** |

**Comment:** The youthfulness of the sample (70.0% under 36 years of age) is consistent with the age pyramid of Equateur Province and illustrates the emergence of young, economically active heads of households in urban areas.

**Table 3.** Distribution of respondents by level of education

| Level of education | Number (n) | Percentage (%) |
|---|---|---|
| No education | 30 | 15 |
| Primary | 50 | 25 |
| Secondary | 80 | 40 |
| Higher education / University | 40 | 20 |
| **Total** | **200** | **100** |

**Comment:** The functional literacy rate (combined secondary and higher education at 60.0%) exceeds the provincial average of 52.0%.

**Table 4.** Occupational classification of heads of household

| Occupation | Number (n) | Percentage (%) |
|---|---|---|
| Retailer | 60 | 30 |
| Unemployed | 50 | 25 |
| Farmer / Fisherman | 40 | 20 |
| Civil servant | 35 | 17.5 |
| Other | 15 | 7.5 |
| **Total** | **200** | **100** |

**Comment:** The high proportion of traders (30.0%) illustrates the predominance of the informal economy in Mbandaka. At the same time, the unemployed (25.0%) constitute a particularly vulnerable section of the population, often excluded from institutional participatory mechanisms due to a lack of resources or time.

**Table 5.** Estimated monthly household income

| Monthly income (USD) | Number (n) | Percentage (%) |
|---|---|---|
| Less than 50 | 55 | 27.5 |
| 50–100 | 70 | 35 |
| 101–200 | 45 | 22.5 |
| Over 200 | 30 | 15 |
| **Total** | **200** | **100** |

**Comment:** More than half of households (62.5%) report an income of no more than USD 100 per month. Taking the international poverty line of USD 2.15 per person per day and applying it to an average local household of 5.9 members, it is estimated that nearly 68.0% of households in the sample live below the monetary poverty line (World Bank, 2020).

### 3.2. Bivariate analyses: associations between variables

**Table 6.** Relationship between gender and perceptions of social disparities

| Gender | High perception | Moderate perception | Low perception | Total |
|---|---|---|---|---|
| Male | 45 | 30 | 25 | 100 |
| Female | 60 | 25 | 15 | 100 |
| **Total** | **105** | **55** | **40** | **200** |

Statistics: chi-square = 6.7; df = 2; p = 0.034.

**Comment:** The chi-square test reveals a significant association (p = 0.034) between gender and the perception of inequality. Women (60.0%) are proportionally more likely than men (45.0%) to believe that social disparities are high.

**Table 7.** Influence of educational attainment on civic participation

| Level of education | High participation | Moderate participation | Low participation | Total |
|---|---|---|---|---|
| No education | 5 | 10 | 15 | 30 |
| Primary | 15 | 20 | 15 | 50 |
| Secondary | 35 | 30 | 15 | 80 |
| Higher education / University | 25 | 15 | 0 | 40 |
| **Total** | **80** | **75** | **45** | **200** |

Statistics: chi-square = 18.50; df = 6; p = 0.005.

**Comment:** There is a moderate and highly significant association (p = 0.005) between educational attainment and community engagement. Higher education graduates show a high participation rate of 62.5%, whilst those with no formal education make up the majority in the 'low participation' category.

**Table 8.** Correlation between community engagement and the perception of reduced social inequality

| Level of engagement | Perceived reduction | No change | Perceived worsening | Total |
|---|---|---|---|---|
| High commitment | 50 | 15 | 5 | 70 |
| Average engagement | 30 | 20 | 10 | 60 |
| Low engagement | 20 | 30 | 20 | 70 |
| **Total** | **100** | **65** | **35** | **200** |

Statistics: chi-2 = 18.92; df = 4; p = 0.001.

**Comment:** The relationship between the intensity of participation and the perception of an improvement in social justice is highly significant (p = 0.001). 71.4% of highly engaged participants perceive a reduction in inequalities, compared with only 28.6% of non-participants.

**Table 9.** Monthly income and ability to access healthcare

| Income (USD) | Easy access | Limited access | Difficult access | Total |
|---|---|---|---|---|
| Less than 50 | 10 | 20 | 25 | 55 |
| 50–100 | 25 | 35 | 10 | 70 |
| 101–200 | 25 | 15 | 5 | 45 |
| Over 200 | 20 | 5 | 5 | 30 |
| **Total** | **80** | **75** | **45** | **200** |

Statistics: chi-square = 22.45; df = ; p = 0.001.

**Comment:** The chi-square test reveals a strong and highly significant association (p = 0.001) between income level and access to healthcare. The most vulnerable households (< USD 50/month) predominantly face financial barriers (45.0% find access difficult), whilst those with the highest incomes enjoy easy access in 66.0% of cases.

### 3.3. Multivariate analyses: logistic regression

**Table 10.** Results of the binary logistic regression (adjusted odds ratios)

| Explanatory variable | Odds Ratio (ORa) | 95% CI | p-value |
|---|---|---|---|
| Gender (Ref. Male) | 0.89 | [0.52 – 1.52] | 0.672 |
| Age (Continuous) | 1.02 | [0.99 – 1.05] | 0.215 |
| Level of education (Ref. No education) | | | |
| Primary | 1.54 | [0.61 – 3.87] | 0.355 |
| Secondary | 2.31 | [0.95 – 5.62] | 0.065 |
| - Higher education / University | 3.78 | [1.42 – 10.05] | 0.008 |
| Monthly income (Ref. < 50 USD) | | | |
| - 50–100 USD | 1.28 | [0.64 – 2.56] | 0.483 |
| - 101–200 USD | 1.95 | [0.87 – 4.37] | 0.106 |
| - > 200 USD | 2.46 | [1.05 – 5.76] | 0.038 |
| Occupation (Ref. Unemployed) | | | |
| Civil servant | 2.18 | [1.02 – 4.66] | 0.044 |
| Retailer | 1.65 | [0.88 – 3.10] | 0.119 |
| - Farmer / Fisherman | 1.32 | [0.62 – 2.81] | 0.472 |
| Community participation (Ref. Low) | | | |
| Average | 2.95 | [1.32 – 6.59] | 0.008 |

| | | | |
|---|---|---|---|
| High | 5.87 | [2.54 – 13.56] | < 0.001 |

**Comment:** After adjusting for all variables, community participation emerges as the strongest predictor of positive perception. Highly engaged citizens are nearly six times more likely (ORa = 5.87) to perceive a reduction in inequalities than those with low engagement. It should be noted that the effect of gender loses its significance in multivariate analysis (p = 0.672), suggesting that the disparities in perception initially observed between men and women are in fact driven by socio-economic status variables (income and occupation).

## 4. Discussion

The aim of this study was to examine the association between community participation and the perception of a reduction in social inequalities in Mbandaka. Our main findings show that (1) community participation is strongly associated with the perception of improvement (OR = 5.87); (2) education and income are also significant predictors; (3) gender is no longer significant after multivariate adjustment.

These results confirm Rappaport's (1987) thesis that collective empowerment transforms the subjective perception of injustices. They also align with the randomised experiment by Casey et al. (2012) in Sierra Leone, where participatory villages experienced a measurable increase in social cohesion. However, our effect (OR = 5.87) is higher than the median odds ratio of 2.1 reported by the meta-analysis by Mansuri and Rao (2013).

The association between educational attainment and participation (p = 0.005) corroborates the work of Putnam (2000) and Bratton (2012): education enhances communication skills and interpersonal trust, facilitating engagement. The persistence of an income effect on access to healthcare (p = 0.001) serves as a reminder that, in the absence of universal health coverage, out-of-pocket payments exclude the most disadvantaged.

Our results have limitations. The cross-sectional design does not allow us to infer strict causality; a selection effect (where optimistic individuals or those already benefiting from improvements are more likely to engage) cannot be ruled out. The modest sample size (200) limits the power to detect small effects.

Despite these limitations, our study provides new insights: little quantitative research has been conducted in secondary cities in the DRC, and none has combined logistic regression with a measure of perceived inequality in Mbandaka. The strength of the association (OR = 5.87) suggests that interventions aimed at strengthening community participation could have a substantial impact on the sense of collective efficacy and, potentially, on the actual reduction of disparities.

## Conclusion

This study demonstrates that community participation is strongly associated with the perception of a reduction in social inequalities in Mbandaka, even after controlling for key socio-demographic factors. Education, income and occupational status are also important determinants. For the participatory approach to fully fulfil its role as a lever against inequalities, public authorities must accompany it with structural policies: universal secondary education, subsidies for mutual health schemes, electrification of disadvantaged neighbourhoods, and the implementation of participatory budgeting mechanisms. Future research should combine longitudinal designs and mixed methods (quantitative and qualitative) to elucidate the causal mechanisms at work.

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