Measuring Improvement in Quality of Life in Community-Based Development Projects in Nigeria

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Abstract

The lingering problem of poverty prompted many countries to adopt community-based strategies for improving Quality of Life (QoL) of poor communities. Numerous studies have focused on identifying but ignored to establish the contribution of the factors that influence improvement in QoL by community-based projects. This paper measures, using Structural Equation Modelling, the contribution of the factors that influence QoL in a Community-based Poverty Reduction Project (CPRP) in Nigeria. The model revealed that the measured factors contributed only 36% of the reduction in poverty, which implies that there are other "hidden" factors responsible for the improvement in the quality of life.

Keywords: Quality of Life, Community-based Projects, Poverty Reduction, Structural Equation Modelling

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1.0 Introduction

The concept of Quality of life (QoL) relates to prosperity and general welfare of individuals (Abdul Karim 2012; Aklanoğlu & Erdoğan 2012; Hanifah & Hashim 2012; Mohit 2013b). Many development experts favored and argued that the adoption of QoL approach for community development would help local communities to improve their quality of life. As supported by Hamdan et al. (2014), the community-based strategy can enhance societal well-being and quality of life.

Many countries adopted community-based strategies to reduce the number of people with an income of less than $1 a day (Chamhuri et al. 2012). Following an agreement between Nigeria and the World Bank, the federal government implemented a Community-based development program as a strategy for Poverty reduction in Nigeria. The program established the Kebbi-state Community-based Poverty Reduction Project (CPRP) in 2001 which emphasizes the involvement of poor communities in the planning, execution, and management of community-level projects. The target of the project is to reduce poverty of poor communities which will, in turn, improve their quality of life.

This paper aims to measure the contribution of the factors that influence improvement in the quality of life with particular reference to the Kebbi-state Community-based Poverty Reduction Project in Nigeria. Using a conceptual framework for measurement of QoL and Poverty reduction developed from literature review, the paper measured the contribution of factors of participation in the CPRP in Nigeria. The findings of the study will broaden the understanding of the various factors that influence improvement in QoL of community-based development projects in Nigeria.

2.0 Literature Review

The quality of life can be measured using both objective and subjective parameters (Mohit 2013a; Ana-Maria 2015). Various authors employed different approaches for measurement of QoL as there is no single universally accepted method for its measurement (Rybakovas 2014). For instance, while Marans (2003) and McCrea et al. (2006) favored an objective approach that is not influenced by subjective opinion, Veenhoven (2000) argues that QoL should be measure based on individual perceptions. While the objective method assesses the actual circumstances of people, the subjective approach is more concerned with individual's satisfaction and feelings about QoL (Muslim et al. 2013). The objective approach measures what people consider being essential to societal well-being, while the subjective measures are more concerned with feelings, experiences, and behavior pattern of individuals (Mohit 2013a).

Numerous authors employed either the subjective or objective approaches to assess QoL. For instance, using subjective parameters, Noor & Abdullah (2012) investigated Quality of Work Life (QOWL) in multinational firms in Malaysia. Latif et al. (2013) examined the influence of situational factors (subjective) of QoL on recycling behavior in Malaysia. Using objective approach, Mohit (2013a) studied regional variations in the QoL in Malaysia. Despite many studies on the measurement of both subjective and objective quality of life, there is a dearth of studies that empirically test the link between subjective (reflective) satisfaction with

the objective improvement (formative) in QoL (McCrea et al. 2011).

A comprehensive evaluation of the QoL must assess both objective and subjective parameters (Michalos 2008) to allow the weakness of one approach to be complemented by the strength of the other (Mohit 2013b). Based on the ideas of Michalos (2008) and Mohit (2013b), Rybakovas (2014) expressed the opinion that the overall perceived QoL by individuals consists of a set of latent (hidden) variables which are dependent on the measurable variables (objective QoL). Similarly, Maggino & Zumbo (2012) opined that the empirically observable subjective indicators tend to reflect on latent (objective) variables, which are not open to people's perception and experience.

2.1 Conceptualization and Measurement of Poverty

There is no universally accepted criteria for measuring poverty. Waheed (2012) identified various approaches for the measurement of poverty. The approaches are poverty gap income shortfall, composite poverty measures, the physical quality of life index (PQOLI), the augmented physical quality of life index (APQLI) and the human development index (HDI). However, the approaches to measuring poverty have undergone refinement, which leads to the introduction of the Multidimensional Poverty Index (MPI) as an improvement over the previous methods. The MPI has multiple indicators for measuring the multidimensional aspects of poverty and deprivation with regards to the development of individuals, households, and nations (Chamhuri et al. 2012). The multifaceted nature of the MIP identifies the poor and estimates the extent of poverty of individuals at the household level. It is assessed using indicators that are consistent with the three dimensions of the UNDP Human Development Index of Education, Health and Standard of living.

2.2 Indicators for Measuring Community Participation and Poverty Reduction

Many studies have adopted various parameters for measuring community involvement and poverty alleviation. While community involvement is measured using 'participation in community development' (PCD), 'empowerment' (EMP) and 'social capital' (SOC), poverty reduction (PVR), is measured using indicators developed by Oxford Poverty and Human Development Initiative (University of Oxford 2010) (Table 1).

Table 1: Constructs and measures for measuring participation and poverty reduction

Constructs	Variables	Source
Participation in Community Development (PCD)	Membership of Community Organization,	Narayan, (1995), CAG Consultants, (2009); Glass, (1979)
	Implementation of Projects	
	Contribute Finance	
	Provide Materials	
	Provide Labour	
Empowerment (EMP)	Awareness of Project	Braathen, (2000); Narayan-Parker, (2002); Samah & Aref, (2009)
	Involvement in Community Meetings	
	Contribute to Decision Making	
	Supervision of Project	

	Project Maintenance	
Social Capital (SOC)	Solidarity and cooperation Give/receive community Assistance Enhanced community development Self-actualization Mutual trust	Ferragina, Tomlinson, & Walker, (2013); Woolcock & Narayan, (2000)
Poverty Reduction (PVR)	Number of visit to health facility Nutrition improved Children in primary school Children in secondary school Improved housing condition Access to services Asset ownership	The University of Oxford, (2010)

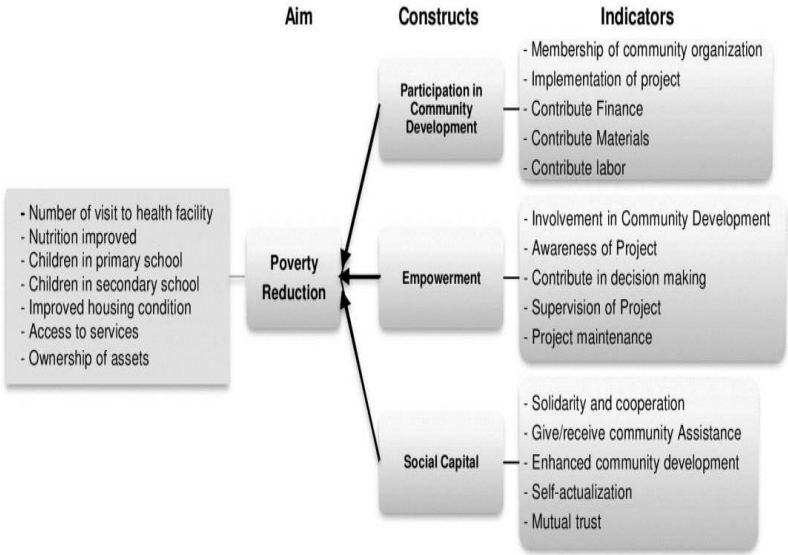

Figure 1: Conceptual framework for measuring poverty reduction

3.0 Methodology

From the review of the literature, this paper adopted a conceptual framework for measuring improvement in the living standard of the project beneficiaries. The framework identified three constructs and fifteen variables for measuring community participation and seven indicators for measuring poverty reduction (Fig 1). The adopted variables received recognition by the reviewed literatures as shown in Table 1.

The authors selected, using stratified sampling procedure, two micro-projects from each of the nine infrastructure sectors executed under the CPRP. Twenty households are then

randomly selected from each community associated with the 18 selected micro-projects. Accordingly, a total of 360 questionnaires were administered using face-to-face delivery. However, availability of functional micro-projects limits the selection of samples for the study. The study contends that the limitation is to allow for measurement of improvement in QoL in communities with operating micro-projects. The data was processed using SPSS and Structural Equation Modelling approach was employed to confirm the model and test the relationships using Amos software version 22.

4.0 Findings and Discussions

The Structural equation modeling approach revealed results of the analysis using both measurement and structural models.

Table 2: Exploratory Factor Analysis (EFA)

Construct	Items	Factor Loading	Cronbach's Alpha	Number of Items	Internal Reliability
Participation in Community Development (PCD)	PCD1	0.928	0.940	5	Excellent
	PCD2	0.925			
	PCD3	0.921			
	PCD4	0.925			
	PCD5	0.930			
Empowerment (EMP)	EMP1	0.770	0.788	5	Excellent
	EMP2	0.776			
	EMP3	0.709			
	EMP4	0.726			
	EMP5	0.752			
Social Capital (SOC)	SOC1	0.850	0.876	5	Excellent
	SOC2	0.831			
	SOC3	0.854			
	SOC4	0.851			
	SOC5	0.860			
Poverty Reduction (PVR)	QOL1	0.921	0.932	7	Excellent
	QOL2	0.922			
	QOL3	0.923			
	QOL4	0.917			
	QOL5	0.921			
	QOL6	0.918			
	QOL7	0.924			

While the measurement sub-model examined the relationship between the observed indicators and their underlying constructs (factors), the structural component explored the contribution of the factors to the improvement in poverty reduction of the CPRP project

beneficiaries. Exploratory Factor Analysis (EFA) was used to verify the internal reliability and validity of the research questionnaire. All the latent constructs achieve internal reliability with a Cronbach's Alpha of greater than 0.700 (Table 2). The factor loadings of the four constructs (PCD, EMP, SOC, and PVR) shows excellent reliability with all the twenty-two items. Similarly, the analysis shows a Kaiser-Meyer-Olkin (KMO) values of between 80% and 90% measure of sampling adequacy which indicate a common variance among the measured variables.

4.1 The Measurement Model

Confirmatory Factor Analysis (CFA) is used to assess and validate the measurement model and to test whether the measures of a construct are consistent with the researcher's understanding of that constructs (Awang 2015). Every measurement model involving latent constructs needs to undergo CFA before modeling into SEM. However, due to the problems discovered when computing CFA separately for the individual constructs, Awang (2015) suggested the use of pooled CFA for all latent constructs simultaneously.

In examining validity, three requirements of validity assessment must be achieved to the required level to achieve the model fit and to proceed to the structural model analysis. There are several fit indexes for evaluating the fitness of the SEM models. Table 3 shows the recommended fit indexes and their respective acceptable values. The fit indices in Figure 2 show that apart from the CFI (0.901), the other fitness indexes do not meet the recommended value of acceptance. The option is to delete or correlate the unnecessary items in the model to achieve validity and reliability.

Table 3: Categories of Model Fit and their Level of Acceptance

Name of Category	Name of Index	Index Full Name	Level of Acceptance
Absolute Fit	Chi-Square	Discrepancy Chi Square	P-value >0.05
	RMSEA	Root Mean Square of Error Approximation	<0.08
	GFI	Goodness of Fit Index	>0.90
Incremental Fit	AGFI	Adjusted Goodness of Fit	>0.90
	CFI	Comparative Fit Index	>0.90
	TLI	Tucker-Lewis Index	>0.90
	NFI	Normed Fit Index	>0.90
Parsimonious Fit	CMIN (Chisq/df)	Chi Square/Degree of Freedom	<3.0

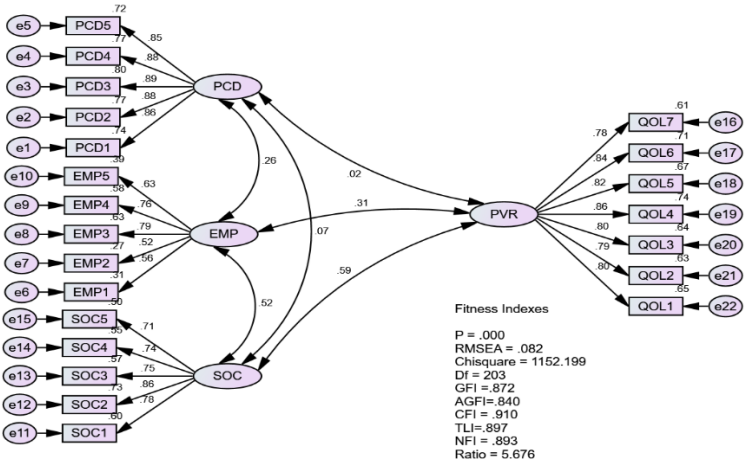

Figure 2: The measurement model

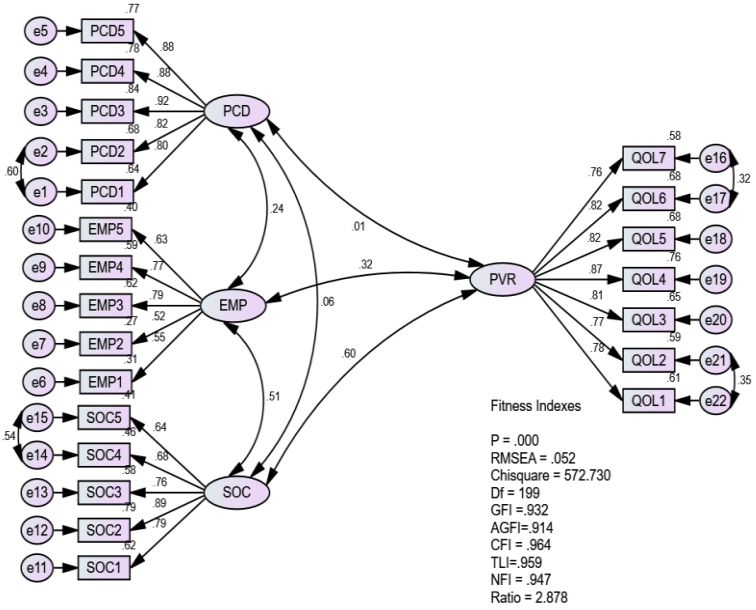

Figure 3: Modified measurement model

The model modification was carried out, and a new specified model was estimated. As expected, correlating the unnecessary items improved the model leading to achievement of

all the fitness indices in Figure 3. The result of the modified pooled CFA shows a satisfactory fit model that achieved all the fit indexes. The re-specified measurement model meets the requirement of validity and reliability.

4.3 Assessing the Validity and Reliability of the Measurement Model

The factor loadings of the model shown in Table 4 are adequate and the model achieved both "convergent" and "construct" validity as both the Composite Reliability (CR) and the Average Variance Extracted (AVE) are above 0.6 and 0.5 respectively. The model also achieved discriminant validity as indicated in Table 5 because the bold and diagonal are greater than the preceding values in their rows and columns.

Table 4: CFA Result for the Construct in the Model

Construct	Items	Factor Loading	CR (≥ 0.6)	AVE (≥ 0.5)
PCD	PCD1	0.80		
	PCD2	0.82		
	PCD3	0.92	0.935	0.742
	PCD4	0.88		
	PCD5	0.88		
EMP	EMP1	0.55		
	EMP2	0.52		
	EMP3	0.79	0.779	0.501
	EMP4	0.77		
	EMP5	0.63		
SOC	SOC1	0.79		
	SOC2	0.89		
	SOC3	0.76	0.869	0.573
	SOC4	0.68		
	SOC5	0.64		
PVR	QOL1	0.78		
	QOL2	0.77		
	QOL3	0.81		
	QOL4	0.87	0.934	0.671
	QOL5	0.82		
	QOL6	0.82		
	QOL7	0.86		

Table 5: Summary of Discriminant Validity Index for the Constructs

Construct	PCD	EMP	SOC	PVR
PCD	**0.86**			
EMP	0.24	**0.71**		
SOC	0.06	0.51	**0.76**	
PVR	0.01	0.32	0.60	**0.82**

4.4 Structural Equation Model (SEM)

In figure 4 the structural path model is presented and evaluated. The model explained 36%

of the variance accounted for by the combined influence of the predictors (participation in community development, empowerment, and social capital). This result implies that the combined influence of the variables of community involvement in poverty reduction is 36% while 64% does not affect poverty alleviation. However, among the three factors, social capital has a more significant impact (0.59) on the relationship. The influence of social capital on poverty reduction is also buttressed by (Okunamadewa et al. 2005), (Dschang 2009), and (Santini et al. 2012).

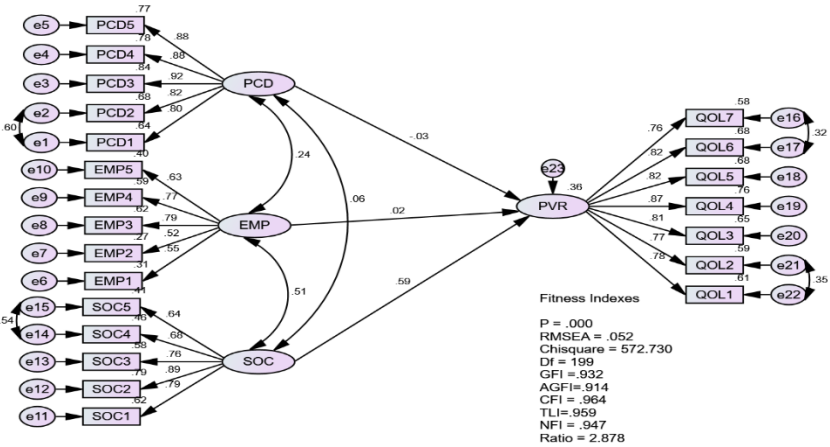

Figure 4. Model predicting poverty reduction

Similarly, only one of the paths (SOC) out of the three linking the independent variables (PCD, EMP, and SOC) to the dependent variable (PVR) is significant at the critical ratio test (>±1.96, p<0.05). The probability of getting a critical ratio as large as 11.721 in absolute value is less than 0.001 (Table 6). In other words, the regression weight for SOC in the prediction of PVR is significantly different from zero at the 0.001 level (two-tailed).

Table 6: Regression weights for path estimate

Path	Estimate (β)	C.R	P-Value	Result
PVR <--- PCD	-0.028	-0.777	0.437	Not significant
PVR<--- EMP	0.037	0.436	0.663	No significant
PVR<--- SOC	0.604	11.721	***	Significant

Poverty, being a multi-dimensional construct, has multiple cause-effect relationships. The 64% of the poverty reduction that could not be explained by the model is caused by other "hidden" factors other than those associated with community involvement. Therefore, implies that the lingering problems of poverty in developing countries are so complex that they cannot be solved by a community-based poverty reduction program alone. Investment in both

physical and social infrastructure is necessary to reduce poverty (Ogun 2010). As observed by Hewett & Montgomery (2001), the inadequate provision of public services can stalemate efforts to alleviate poverty. For instance, lack of adequate water supply and sanitation can cause elevated health risks to households; and small-scale enterprises requiring electricity face higher production costs.

5.0 Conclusion

The paper measured the influence of factors of community participation on poverty reduction towards enhancing the quality of life of the project beneficiaries. The study developed a model of improvement in Quality of Life for a Community-based poverty alleviation project in Nigeria. The finding of the study revealed a complimentary influence of the three dimensions of community involvement (community participation, empowerment, and social capital) in poverty reduction in Kebbi state, Nigeria.

However, the findings of the study indicate that community involvement accounted for only 36% of the poverty reduction of the project's beneficiaries. The authors, therefore, recommend the adoption of other poverty alleviation strategies that address the multidimensional nature of poverty in developing countries. Such strategies may focus on investigating other pro-poor natural sectors of the economy like agriculture to complement community-based development projects in developing countries. The authors contend that because the majority of poor people used agriculture as their primary source of income, focusing poverty reduction on the sector can tremendously reduce poverty.

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