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Welfare Analysis of Households Involved in Involuntary Resettlement in Koto Panjang

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ABSTRACT

It has been said that development requires sacrifice. This has been the experience of households living in Koto Panjang, Sumatra, Indonesia. Because of new dam construction, they have had to move to new settlements provided by the government. The displaced community consists of 4868 families from 10 villages. Many problems have arisen due to this removal. This study examines the influence of household participation and compensation on household welfare by using a Structural Equation Model. The sample consisted of 360 household heads from 12 villages in Koto Panjang whose households had been moved. The results show that compensation positively and significantly affected household welfare, while household participation could not be proven to affect household welfare.

1. Introduction

Dam construction causes displacement when people have to forcibly move to new resettlement locations. The government anticipates involuntary resettlement for displaced households by replacing the lost land, providing housing, providing access to resources and restoring community livelihoods (Perera, 2014).

The purpose of involuntary resettlement is to reconstruct people's lives for the better. However, previous research indicates that often involuntary resettlement tends to negatively impact people's lives economically, socially and environmentally. Economically, homes, assets and livelihoods are lost (Yasuyuki, 1998; Akbar, 2004; JBIC; 2004; Wiranata, 2010; Uslaini and Purwanto, 2015). The simultaneous loss of assets and livelihoods cause households to lose their ability to provide for their daily needs, resulting in a decline in welfare.

Involuntary resettlement generally involves households that are not ready to move, are less

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dynamic, lack the initiative to adapt to new environments or are resistant to relocation (ADB, 1995). Because of this, vulnerable households may fail to reconstruct life successfully in new locations. In order for households to reconstruct their lives, sufficient timely compensation in cash or non-cash must be provided (World Bank, 2000).

Compensation is an urgent requirement to improve household welfare. Inadequate compensation causes a decline in people's welfare. Research has shown that the government's promised compensation for the Koto Panjang community did not materialize as previously agreed (Yasuyuki, 1998; Akbar, 2004; Wiranata, 2010). Insufficient compensation for assets and land disheartened the people deeply, as their hopes for better conditions and wellbeing from the compensation did not materialize. As a result of this, the public protested and this culminated in a court directive in March 2015 which rejected the Koto Panjang community demands as did the Japanese court even though the dam was funded with Japanese aid money (Uslaini and Purwanto, 2015).

Low household participation indicated that the resettlement program in Koto Panjang was more dominantly determined by the central government. The integration and involvement of local stakeholders did not go well (Karimi, et al, 2009; Uslaini and Purwanto, 2015). This is recognized by the government as a mistake, but improvements to reform the development paradigm have not yet been implemented. The role of local communities has not been optimized and their involvement in planning and decision making is minimal. The government still regard them as a passive object of involuntary resettlement, not as active players having a greater role in influencing community acceptance.

Compensation and participation are two vital factors affecting the welfare of displaced households. Therefore, both of these factors were examined in the case of households that were moved in Koto Panjang. Previous research has not studied compensation, participation and welfare simultaneously, therefore this study uses a Structural Equation Model to find the relationship between these three key variables.

2. Material and Methods

Improved welfare can be a positive effect of resettlement if dam construction leads to a better life for the affected community. Welfare was measured using the 10 indicators (BPS, 2015); health, education, job, household income, family harmony, leisure time availability, social relationships, house and assets, environment, and also security. Two key factors thought to influence these are community participation and compensation. Community participation consists of involving the community in planning, implementation, maintenance and resulting utilization of the new initiatives (Finsterbusch and Wicklyn, 1987).

Compensation can be in the form of cash (money) and non-cash (land, goods and plant). (ADB, 1998; Cernea, 2003; Fujikura and Nakayama, 2013).

This study will test the hypothesis that both compensation and household participation affect household welfare. This hypothesis builds on the argument that:

a. Households will increase their welfare if they receive compensation from loss of assets owned. Thus compensation is an asset or initial resource that settlers have in reorganizing their new lives. If the promised compensation is in accordance with the wishes of the community and paid on time, then it will impact on improving household welfare.
b. Household participation in the involuntary resettlement program is urgent to prevent potential risks and accommodate household interests. Stages of household participation consist of program planning, implementation and monitoring. If household participation goes well and the government initiated program accommodates household interests, it is believed that the involuntary resettlement program will succeed and provide for the welfare of the household.

The simultaneous relationships between compensation, participation and welfare are pictured in the conceptual framework of Figure 1. The path diagram (Figure 2) shows the relationships between the variables used in the

Structural Equation Model (SEM). There are 5 latent variables and 30 manifest variable involved in the model. The description of variables and indicators is presented in Table 1.

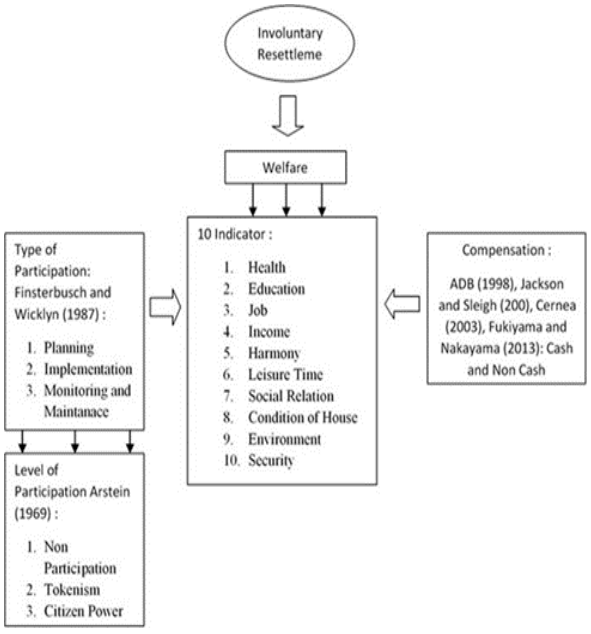

Figure 1 - Conceptual Framework

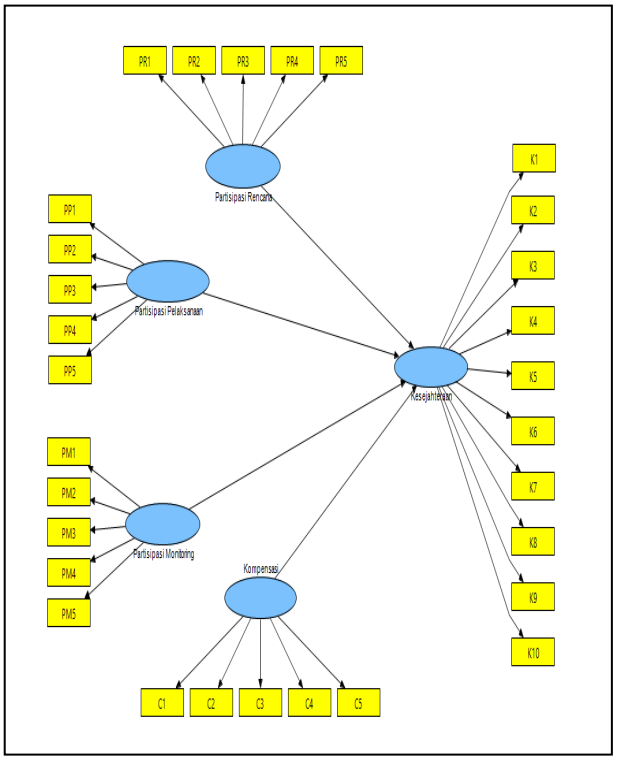

Figure 2 - Path Diagram of DAM Involuntary Resettlement in Koto Panjang

Table 1. Description of Variables and Indicators

Latent Variable	Code	Manifest Indicators
Welfare (Kesejahteraan)	K1	Health,
	K2	Education,
	K3	Job,
	K4	Household income,
	K5	Family harmony,
	K6	Leisure time availability,
	K7	Social relation,
	K8	House and asset,
	K9	Environment
	K10	Security.
Planning Participation (Partisipasi Rencana)	PR1	No participation
	PR2	Tokenism
	PR3	Tokenism
	PR4	Citizen Power
	PR5	Citizen Power
Implementation Participation (Partisipasi Pelaksanaan)	PR1	No participation
	PR2	Tokenism
	PR3	Tokenism
	PR4	Citizen Power
	PR5	Citizen Power
Monitoring Participation (Partisipasi Monitoring)	PR1	No participation
	PR2	Tokenism
	PR3	Tokenism
	PR4	Citizen Power
	PR5	Citizen Power
Compensation (Kompensasi)	C1	Money
	C2	Building Area
	C3	Surface Area
	C4	Farmer Land Area
	C5	Garden Area

Table 2 - Research Location and Total Respondents

No	Village	HH	District/City/ Province
1	Pulau Gadang	30	Kecamatan XIII Koto Kampar Kabupaten Kampar Provinsi Riau
2	Koto Masjid	30	
3	Tanjung Alai	30	
4	Batu Bersurat	30	
5	Pongkai Istiqomah	30	
6	Koto Tuo	30	
7	Muara Takus	30	
8	Gunung Bungsu	30	
9	Mayang Pongkai	30	Kecamatan Kampar Kiri Tengah Kabupaten Kampar Provinsi Riau
10	Muara Mahat Baru	30	Kecamatan Tapung Kabupaten Kampar Provinsi Riau
11	Nagari Tanjung Balik	30	Kecamatan Pangkalan Koto Baru Kabupaten 50 Kota Provinsi Sumatera Barat
12	Nagari Tanjung Pauh	30	
Total		**360**	

3. Results and Discussions

3.1. Validity Test

To get a fit Structural Equation Model we need to test for validity and reliability. Convergent and discriminant validity tests were used. The result of convergent testing can be seen in the size of the loading factors for each manifest variable (Table 3). As loading factors for each manifest variable were more than 0.5 they can be considered valid and can be included in the model. The result of discriminant validity test can be seen in Table 4.

Table 3 - Loading Factor for Variable Indicators

Latent variable	Manifest Variable	Loading Factor	Critical Value	Conclusion
Planning Participation	PR4	0.9590	0.5	Valid
	PR4	0.9590	0.5	Valid
	PR5	0.6413	0.5	Valid
Implementation Participation	PP2	0.7258	0.5	Valid
	PP3	0.8859	0.5	Valid
Compensation	C4	0.8215	0.5	Valid
	C5	0.8818	0.5	Valid
Welfare	K5	0.7462	0.5	Valid
	K7	0.6976	0.5	Valid
	K9	0.7531	0.5	Valid
	K10	0.6699	0.5	Valid

Table 4 - AVE and Communality Test

Variable	AVE	Communality	Critical Value	Conclusion
Planning Participation	0.5881	0.5444	0.5	Valid
Implementation Participation	0.6099	0.6776	0.5	Valid
Compensation	0.6776	0.6099	0.5	Valid
Welfare	0.5444	0.5881	0.5	Valid

All variables have an average variance extracted (AVE) value and communality value greater than 0.5 indicating all construct variables are valid according to the communality test.

3.2. Reability Test

Both Composite and Cronbach's Alpha reliability tests were conducted. A group of indicators measuring one variable has good composite reliability if the value of the composite readability is greater than 0.7 and the value of Cronbach's Alpha more than 0.6. According to these criteria, both the composite reliability and Cronbach's Alpha test showed that each of the construct variables could be considered reliable (Table 5).

Tabel 5 - Reability Test

Variable	*Composite Reliability*	*Cronbachs Alpha*	Conclusion
Planning Participation	0.8081	0.6773	Reliable
Implementation Participation	0.8222	0.7136	Reliable
Compensation	0.8007	0.6259	Reliable
Welfare	0.8257	0.7291	Reliable

4. SEM Analysis and Hypothesis Test

These tests of validity and reliability indicate that these 12 indicators can be used to model the 4 constructs with each construct value having 2 to 5 constituent indicators. Figure 3 shows the direct and indirect influence between constructs in the analysis.

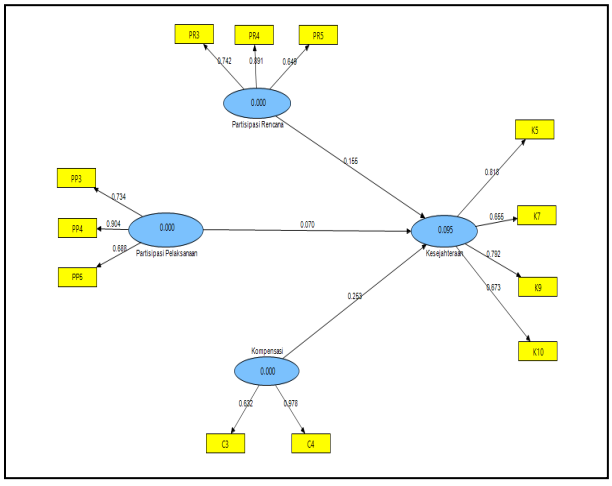

Figure 3 – Path Diagram

Compensation and active householder participation in planning appear to be positively correlated with welfare in Koto Panjang. However, more rigorous analysis shows that the only statistically significant influence on household welfare is compensation which has a t-statistic >1.6 (alpha = 10 %).

Tabel 6 - Hypothesis Test and Path Coefficients (Mean, STDEV, T-Value)

Causality	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
Compensation -> Welfare	0.253479	0.248658	0.151995	0.151995	1.667678
Implementation -> Welfare	0.069747	0.039528	0.168265	0.168265	0.414510
Planning -> Welfare	0.155072	0.136467	0.173134	0.173134	0.895680

The interpretation of this result is if adequate or more compensation was received by the community it would effectively improve their welfare. This observation is based on the results from the field showing that the communities receiving adequate compensation had better welfare outcomes than those who failed to receive adequate compensation. Furthermore, the hypothesis that community participation influences household welfare was not proved in this research. The citizens who were moved had no choice but to accept what the Government provided. No provision for active participation that may have benefited them in the relocation process was available. This has also often been found to be the case in previous research into citizen participation in relocation programs in Africa and Thailand and other parts of Indonesia where the community is treated as a passive object rather than an active stakeholder.

5. Conclusion

This study has discussed the welfare, participation and compensation to communities in Koto Panjang that were involuntarily resettled because of the effect of dam construction in Koto Panjang. The empirical results showed that compensation had a significant positive effect on the welfare of households while people participation had no measurable effect on the welfare of households. It showed that provision for active household participation was lacking. To increase the welfare of displaced communities like those in Koto Panjang, the government should ensure that compensation is adequate and the households are actively involved in the resettlement process so that resettlement is conducted in a way that impacts the affected households and surrounding districts more positively.

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