Psychological Wellbeing of the Displaced Households: Evidence from a Mass Transit Project in Lahore

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Abstract

Human displacements, even development-induced, tend to decrease the well-being of the displaced households by making them more vulnerable to poverty. The evidence in this context primarily pertains to economic impact of displacements with little attention being paid to non-economic, psychological concerns of the displaced. This research study measures the psychological wellbeing (PWB) of the displaced families in the metropolitan city of Lahore due to the construction of Orange Line Metro Train project. The data set of 165 households-comprising 90 displaced and 75 non-displaced families is gathered through self-administered questionnaire. PWB of the displaced versus non-displaced families is measured through control and treatment groups and further Ordinary Least Squares (OLS) regression technique is also employed. Our findings suggest that PWB of the displaced households is significantly lower than non-displaced thereby marginalizing the well-being of displaced families making them more vulnerable to poverty.

Keywords: Displaced Household's wellbeing; vulnerability; infrastructure project; project analysis; survey method.

JEL classification codes: I30, O18, O22, C83

1. Introduction

The term dispalcement, in its broadest sense, signifies an involuntary and coerced population movement (Stavropoulou ,1994). Population displacement has become a ubiquitous issue all across the globe (Kaushal, 2009). According to Internal Displacmenet Monitoring Center (2022) website, total displacment resulting from conflict, violence and natural disasters amounted to 59.1 million displacement.

Displacements that occur as a consequence of large-scale development projects are referred to as *development-induced displacements*. Cernea (1995), defines the concept of induced development as development prompted by deliberate programmes, typically initiated by government, which may use public financial resources to create new infrastructure or other economic assets. It has been estimated that some 90 to 100 million people around the world were displaced as a result of large development projects during 1990s. However, in 21st century, around 15 million people are estimated to be displaced yearly because of the construction of mega projects such as dams and reservoirs, urban infrastructure and urban renewal schemes, energy-mining, oil exploration and extraction, building of transportation networks, roads, railways and highways. This figure is projected to increase to approximately 280-300 million in coming years (Cernea & Mathur 2009). According to the literature, Asia has the highest frequency of displaced people, when it comes to the execution of large scale development projects because of rising demand and pressure for infratsruture projects. Moreover, urbanization is also one of the significant factors that is causing development-induced displacement, particularly in countries with high population density For instance, in India, alone, approximately 60 million people have been displaced since independence, whereas in China 10 million people were uprooted in water reservoir projetcs, 7 million in urban infrastruture and 14 million people in projects related to transport (Chao, 1990). The largest development project in the history of Pakistan was the construction of Mangla dam in 1967. During its construction 280 villages were submerged and around 110,000 people were involuntary resettled. Another mega project in Pakistan was the construction of Tarbella dam in 1974, which led to the displacement of 96,000 people. In addition to this, it is anticipated that the construction of Diamer-Bhasha dam will displace approximately 22,000-28,000 people (4250 families, 31 villages), whereas the construction of Dasu dam on River Indus will require the resettlement of 767 households from 34 villages. Therefore, the cumulative number of people being displaced via development

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projects is much greater than the total number of displaced persons from wars and natural disasters (Cernea, 1997).

Although, development projects do benefit people and the economy, yet, certain costs are also associated with their implementations that are often borne by vulnerable section of societies (Dasanayke & Ratnayake, 2018). These projects are undertaken to foster economic growth but during the course of development, poor, vulnerable and marginalized people tend to suffer not only economically and socially but also psychologically (Malik, 2011). Although, acquisition of land and property may be pre-requisites for construction of development projects, yet they can occur in a manner that violates human rights depriving them of their economic assets and social networks (Endeshaw , 2016) that may have a severe impact on their wellbeing – particularly psychological wellbeing.

At a very basic level psychological wellbeing might be synonymous to terms like positive mental health, happiness or satisfaction but at a broader level, it entails a wide range of dimensions such as autonomy, environmental mastery, positive relations with others, self-acceptance, personal growth and having a pupose in life (Ryff, 1989) but stressful life experiences such as displacements, may have an adverse effect on the psychological wellbeing of displaced people. Therefore, in order to mitigate the psychological toll surfacing as a consequence of stressors like displacement and subsequent impoverishment risks (Cernea 1995), people tend to look for social support system that may act as a buffer in times of need. Social networks tend to increase one's acccess to psychological and material resources because it may act as a cushion against stress. In this regard, social support in form of emotional, instrumental and informational support, may prove to be significant in reducing the influence of impoverishment risks and stressful life events, thereby, assisiting in maintaining the PWB of displaced people. It is important to understand the overall welfare of society also include the intangible costs that are usually associated with mental health and PWB. Studies associated with different taxonomies of displacement (Gupta, 2018; Adity, 2017; Oginyi, Mbam, & James, 2017; Vardiwale, 2007) highlight the significance of PWB for displaced families in addition to economic well-being. However, literature also shows that the issue of displacement in urban areas is poorly covered as it predominantly focuses on displacements pertinent to conflicts, violence, natural disasters and hydroelectric projects (Herath, Lakshman, & Ekanayake, 2017).

In Pakistan, urbanization is taking place at an unprecedented rate, which is underpinning the construction of urban infrastructure such as Mass Transit Projects. This requires acquisition of land and private property at the expense of compulsory population displacement. However, most of the literature pertinent to development-induced displacement in Pakistan is available for the construction of dams. To the best of researcher's knowledge, one can hardly find any empirical research study conducted on displacements occurring as a consequence of urban infrastructure projects, particularly mass transit projects. We have taken the case of Orange Line Metro Train Project, which is the first mass rapid transit system in Pakistan built as a part of China Pakistan's Economic Corridor (CPEC), in the metropolitan city of Lahore. A project worth $1.62 billion, it extends over 27.1 KM, comprising 26 stations from Dera Gujran at the northern end of its route to Ali Town at the southern end in the city of Lahore. It navigates through the most populated areas of Lahore. The main focus of this research is to investigate whether or not significant variations exist between the psychological wellbeing of displaced and non-displaced families. Hence, in this context, we aim to measure and test the significance of the differences between the psychological wellbeing of treatment group (displaced families) and the control group (non-displaced families).

2. Theoretical Frameworks and Conceptual Model

We have taken cue from two fundamental theoretical models: Scudder-Colson Four Stage Model (Scudder & Colson, 1982) and Impoverishment Risk and Reconstruction Model (Cernea, 1995 and 1997).

Figure 1. Scudder – Colson Four Stage Model (1982)

Stage 1 Recruitment	Stage 2 Transition	Stage 3 Potential Development	Stage 4 Handing over/Incorporation
• Policy makers formulate development and resettlement plans	• People informed about their anticipated displacement and subsequent consequences	• Resettlers struggle to adapt to new surroundings by esatblishing economic and social ties with neighboring communities	• Socio-economic systems and communal headship is transferred or *handed over* to the second generation of the inhabitants

The former emphasizes the concept of stages and aims to investigate the response of the displaced towards voluntary resettlement during each stage. These four stages were categorized as recruitment, transition, potential development, and handing over/ incorporation and have been elucidated by Chiruguri (2015) which defines that in the *recruitment stage* development plans are framed by the stakeholders undertaking development projects without informing people about their potential displacement. In the *transition stage* people are informed about their anticipated displacement and its subsequent consequences, which naturally increase the psychological stress and this stress further elevates in the stage of *potential development* when people are phsycially moved from their orginal dwellings and are resettled in new environments and struggle to adapt to new surroundings by establishing economic and social ties with neighboring communities for the sake of maintaining peaceful social networks. In the last stage local socio-economic systems and communal headship is transferred or *handed over* to the second generation of the inhabitants. Although, this model acted as an intellectual tool for carrying out reseacrh and assisted in building and upgrading theories on settlement process, yet, practical implementation of this framework to the actual process of resettlement proved to be unsatisfactory in some cases as Cernea (1997) points out that it solely emphazised the concept of stages thereby neglecting other important socio-economic risks associated with the process of involunatry displacement and resttlement. There are myriad of behavior patterens exhibited by displaced people which must be comprehended in the light of economic, social and cultural impoverishment (Cernea, 1997). Therefore, to address the shortcoming of Scudder-Colson model and to emphasize the significnace of involutary displacement and resettleemnt, a growing concern surfaced among the researchers over the fate of people who were forced to leave their dwellings for the sake of development projects. The previous models neither focused on the onset of impoverishment and subsequent behavioural patterns of displaced people nor did they devise any prudent coping mechanisms. Therefore, in the nineteis a methdological evolution took place in the study of displacement and resttlement with the introduction of Impoverishment Risk and Reconstruction model (IRR) which was developed by Michael Cernea, a sociologist cooperating with the World Bank, to fundamentally address the concerns of involuntary resttlement of dispalced people.

IRR model presents a theoretical framework for involuntary resettlement and brings into perspective the intrinsic risks or *risk factors* which leads to impoverishment through displacement (Cernea, 2004). The fundamental building blocks of IRR are three core concepts – *risk, impoverishment and reconstruction*. All

forced displacees are vulnerable to socioeconomic risks, however , the magnitude of these risks might vary in each situation. These eight impoversihment risks are enumerated in figure 2.

Figure 2. Risk Factors (IRR model)

Impoverishment Risks
•Landlessness •Joblessness •Homelessless •Maginalization •Food Insecurity •Increased Morbidity and Mortality •Loss of Access to Common Property and Services •Social Disarticulation

IRR model is not solely restricted to these risks but it can be adapted to include other risks as well. For example, Downing and Downing (2009) and others have added a few more risks that can be encountered by dispalced people which are, loss of access to public services, disruption of formal educational activities, violation of human rights, changes of climate conditions, and sense of belongingness. However, the IRR model doesn't indicate the impoverishment risks that occur at various stages of displacement and resettlement.

2.1 Conceptual Model

Both models – Scudder Colson and IRR, did not incorporate any dimension pertinent to associated psychological risks encountered by displaced people during the process of displacement and resettlement. Therefore, Disanayake & Ratnayake (2018) formulated a conceptual model by combining Scudder-Colson Four Stage Model (1982) and Impoverishment Risk and Reconstruction (IRR) Model (Cernea, 1990, 1995, 1996 and 1998; Vittas, 1994) in order to gauge the most significant psychological risks occurring at various stages of resettlement and planning process. This conceptual model is illustrated as follows:

Figure 3. Conceptual Model
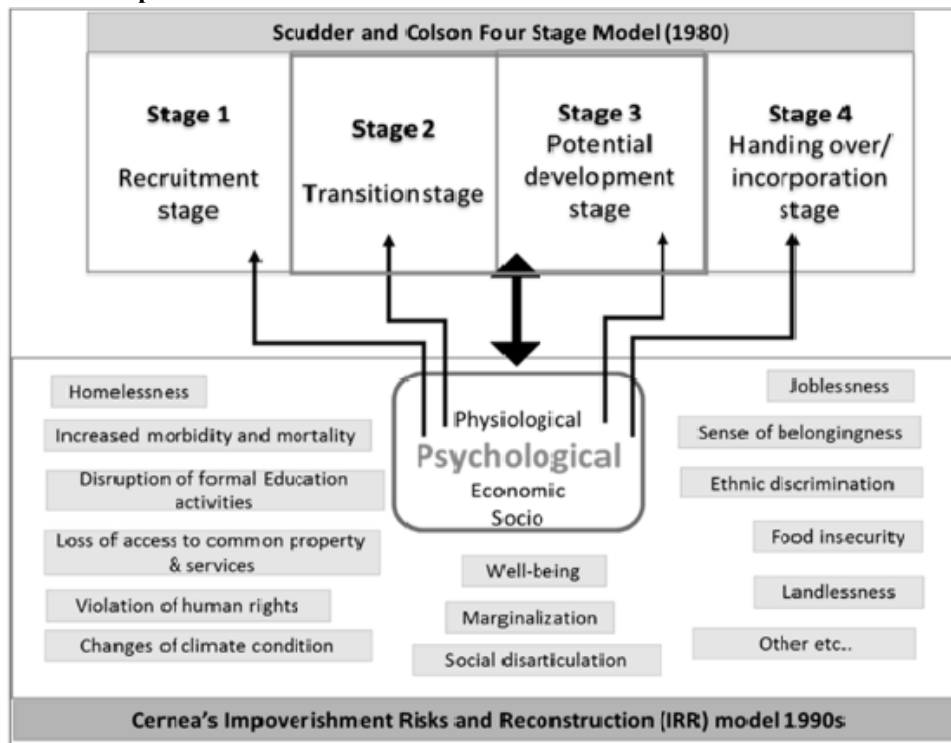
**Source:** (Disanaykae & Ratnayake, 2018)

The above risks are identified as psychological risks by Disanayake & Ratnayake (2018). These risks can be seen as a an interconnected pattern of variables and are forced upon people, beyond their choice.

Moreover, they have to deal with them simultaneously which results in a crisis situtaion. Depending on various circumstances such as site, type of project, sector (urban or rural), and season, among others, the affect of these risks vary. Displacement initiates in the transition stage and continues to occur in the potential development stage, as illustrated by the conceptual model. During these two stages, displaced people face several psychological risk factors – predominantly homelessness, joblessness, landlessness, and loss of belongingness which are ranked the highest.

2.2 Hypothesized framework

Based on the literature review, theoretical underpinnings and research gap, hypothesied framework of the study is presented as follows:

Figure 4. Hypothesized Framework
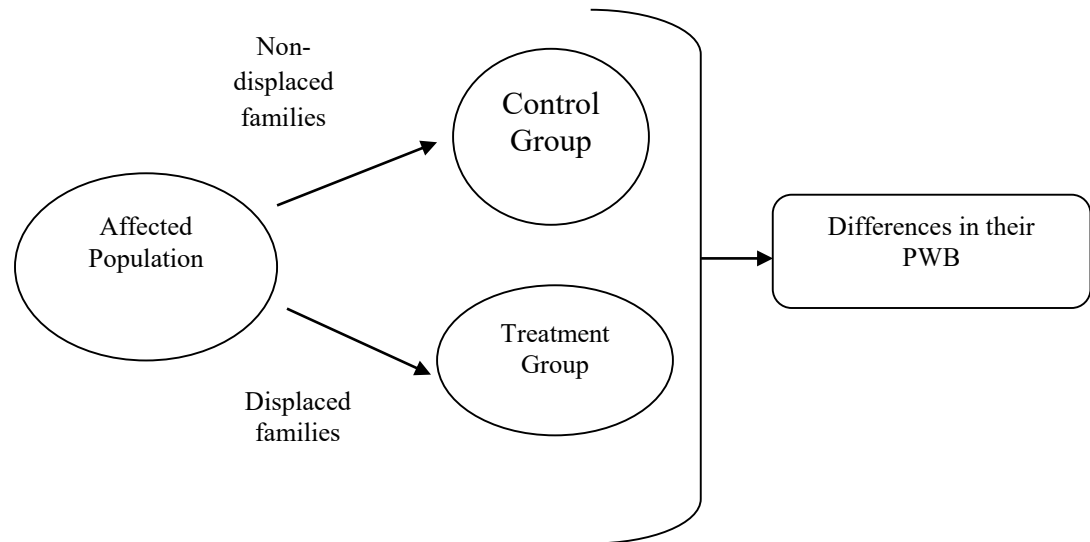
The affected population is categorized into non-displaced and displaced families, which in turn denote the

control and treatment group. The objective is to investigate whether there are any statistical significant differences in the psychological wellbeing of displaced and non-displaced families. Based on the framework, the hypothesis constructed is listed as follows:

Hypothesis 1: There are significant differences between the PWB of displaced and non-displaced households.

3. Research Methodology

This research study is primary in nature and entails an empirical approach. It follows a case study design, since it examines the psychosocial well-being of the displaced community relative to the non-displaced in the case of the construction of OLMT. For analysis, two sample t-test (differences in means) is employed to measure the differences between the psychological well-being of displaced and non-displaced households. Furthermore, OLS regression technique is used to test the significance of the differences between the PWB of treatment displaced families and the non-displaced families.

3.1 Data Collection and Sample Size

The sampling frame comprises of 379 families which were uprooted when the construction of OLMT project headed towards the construction of 1.7 km underground section comprising Anarkali and Central Stations. Maximum displacements occurred in areas that were situated in close proximity to Jain Mandir, Purani Anarkali Ahata Baba Wazir, Edward Road, Kacha Lake Road, Parachute Colony, Potsal Colony and Railway Colony. Since these were densely populated localities, cut and cover technology had to be employed in the construction of underground stations due to which buildings and properties on ground had to be demolished. On the contrary, few square feet of land or property was acquired when on-ground stations were constructed from Dera Gujjran to Lakshami Station and from Chauburji Station to Ali Town because the route of OLMT merely touches the main road.

Figure 5. Map of Orange Line Train
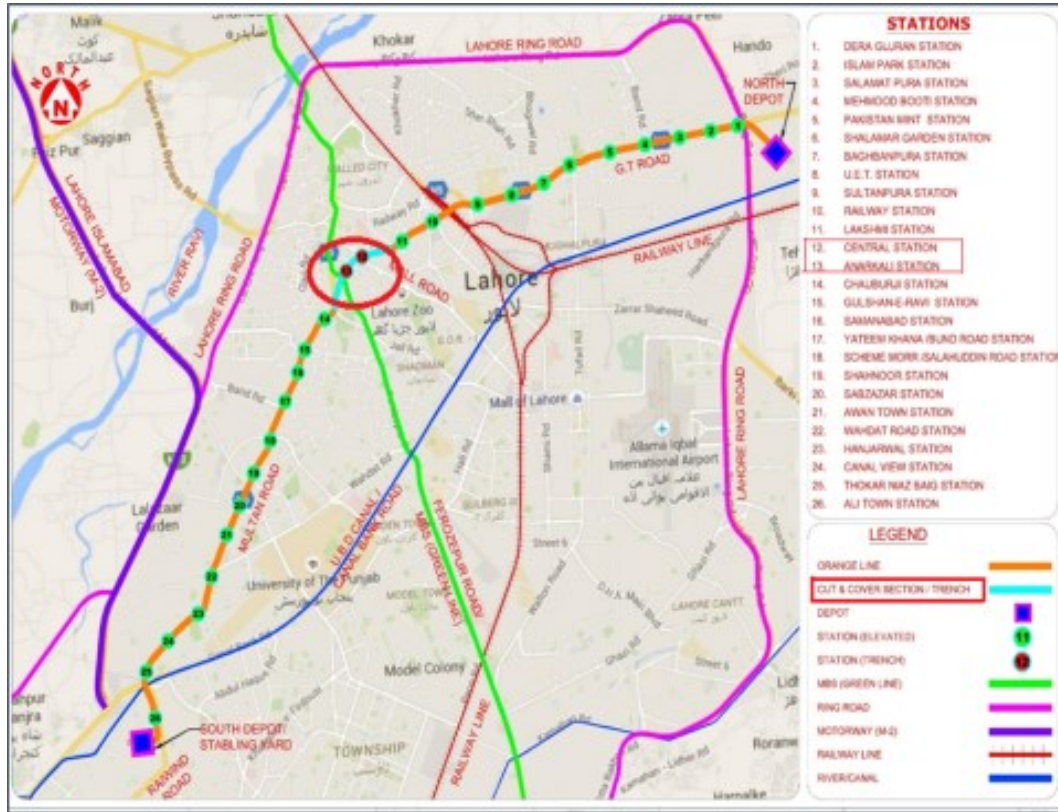
Source: Lahore Development Authority (LDA) & National Engineering Services Pakistan (Pvt.) Limited (NESPAK).

The sample size for this study comprises 165 affected families – 90 displaced and 75 non-displaced. Snowball sampling technique was employed for the displaced. Once evicted it was difficult to locate them because Lahore Development Authority (LDA) had no record pertinent to their relocation. Therefore, LDA was requested to provide the pre-displacement contact details of displaced families. Assurance was provided that the shared information would be kept confidential and the anonymity of the respondents would be maintained in line with ethical considerations. Systematic sampling technique was employed for non-displaced families. Houses, which were located in proximity of 100 meters from the boundary of OLMT project, were selected on the premise that they shared same conditions as the displaced but were not evicted. Every third house was selected from that area of Jain Mandir.

For this study, head of the household, predominantly a male spouse was interviewed in presence of other family members and female spouse was interviewed in case of a female-headed household. Self-administered questionnaires were conducted in the presence of all family members. Incorporating the perceptions of all family members not only allowed immediate cross-checking but also gave a gendered perspective and an alternate view of household dynamics.

3.2 Selection of Variables

The variable PWB is assessed with a modified 18 item version of Ryff's Scales of Psychological Well-Being. The scale includes 3 items for each of 6 aspects of well-being: self-acceptance, autonomy, environmental mastery, purpose in life, positive relations with others, and personal growth. Demographics comprise control variables. The description of variables is illustrated in Table 1.

Table 1. Description of Variables

Variables	Variable definition and measurement	Variable source
1. **Psychological Well-being (PWB)**	Psychological well-being consists of positive relationships with others, personal mastery, autonomy, a feeling of purpose and meaning in life, and personal growth and development.	

Autonomy	The ability to make one's own decisions without relying on, or waiting for, the approval of others	
Environmental Mastery	The ability to manage the environment and to mould environments, or to choose environments, which align with one's needs and values	
Personal Growth	To continuously grow and develop as a person; working towards optimizing one's full potential.	Psychological Well-being Scale by Carol D. Ryff (1989)
Positive Relations with Others	To be able to form warm, caring relationships with others; the capability to develop intimacy and to show empathy with others.	
Purpose in Life	Having goals in life and a sense that one's life has purpose and meaning; living intentionally and with clear direction	
Self-Acceptance	To have a realistic perception of the self, including both good and bad qualities, and still be able to accept oneself.	

2.	**Demographics**	
	Gender	Male =1, Female =2
	Age	In years
	Household Size	Total number of household members
	Dependents	Total number of dependent members
	Employment Status	Yes =1, No =2
	Income Level	Less than Rs. 15,000 = 1 Rs. 15,001 to Rs.30,000 = 2 Rs. 30,001 to Rs.60,000= 3 Rs. 60,001 to Rs.100,000 = 4 Rs. 100,000 to Rs.150,000 = 5 Above Rs. 150,000 = 6
	Total Earners	Total number of male and female earners in a household
	Education	Illiterate = 0 Till Primary =1 Primary to Secondary =2 Secondary till Bachelors =3 Above Bachelors = 4

3.3 Regression Equation

In order to measure the relationship between psychological well-being of displaced and non-displaced families, preferred specification uses the following regression model (estimated as ordinary least squares).

Equation: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_{2i} + e$

Where, the dependent variable is Y, Psychological wellbeing (PWB); β_0 is the regression constant $\beta_1, \beta_2, ..., \beta_n$ terms are the partial regression coefficient for the independent variables, 1, 2,...., i respectively.

X_1 = Displacement (Reference Category – Displaced Families= 1, Non-Displaced Families = 0)

X_2 = Control Variables

i=1,2, 3,...,n. where i represents variables pertaining to Control Variables which include Gender, Age, Household Size, Dependent Members, Income, Total Earners, and Education of Head of the Household.

3.4 Descriptive Analysis

This section highlights the descriptive analysis through the lens of summary statistics, and pair wise correlations among variables. The total sample size for non-displaced comprised 75 households out of which 69 were male headed whereas 6 were female headed households. Correspondingly, displaced consisted of 90 households – 85 were male headed households contrary to female headed ones that were only 5 in number. While conducting the survey questionnaire and semi-structured interviews, if both husband and wife were
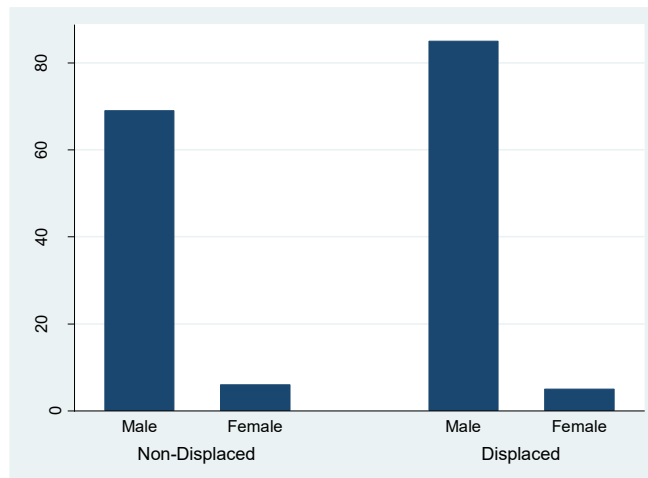
present, the husband answered the questions. It was observed that female, who was head of the household, was either widow or divorced, thereby, solely looking after her family comprising elderly and children.

Figure 6. Bifurcation – Displaced and Non-Displaced
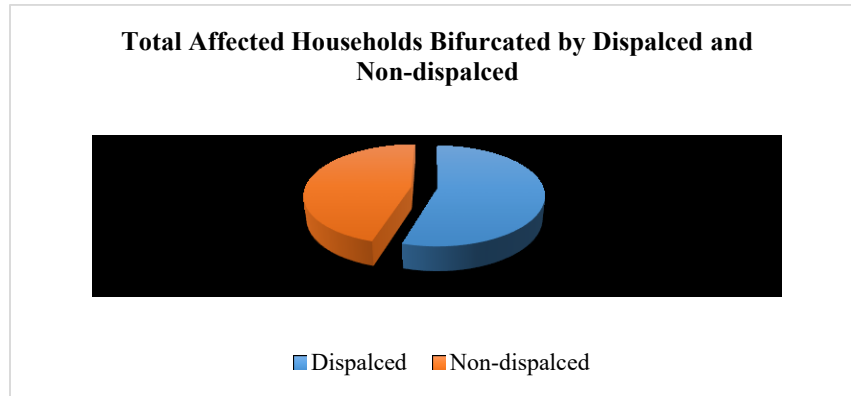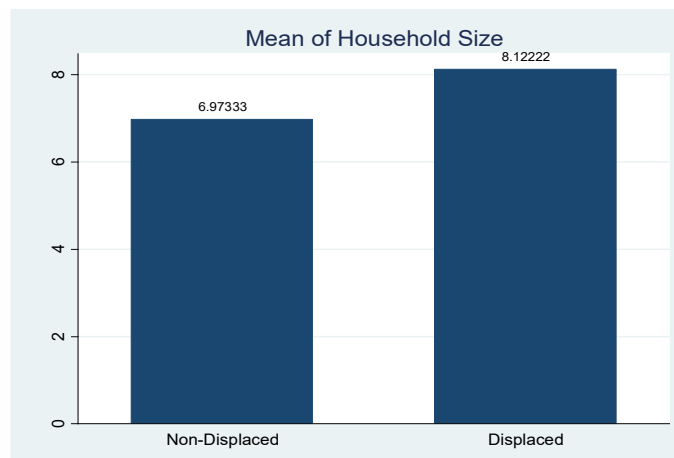

Source: Based on author's self-administered survey

Figure 7. Bifurcation by Gender

Source: Based on author's self-administered survey
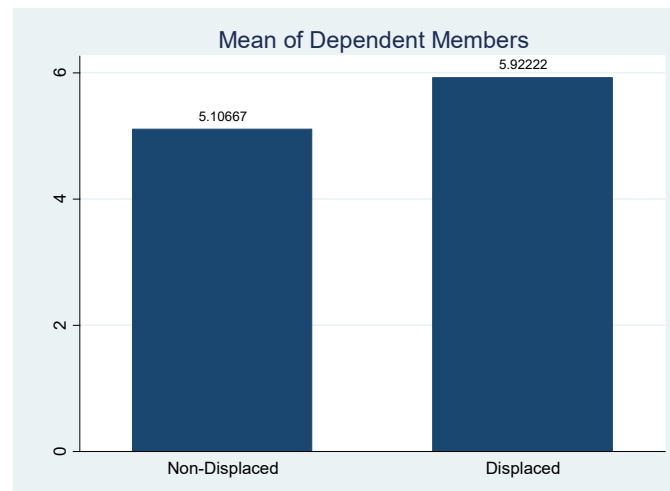
Figure 8. Mean of Household Size

Source: Based on author's self-administered survey

The average household size for non-displaced comprised 7 members, whereas for displaced it was 8.

Figure 9. Mean of Dependent Household Members

Source: Based on author's self-administered survey

Correspondingly, Figure 9 illustrates that displaced households consisted of more dependent members as compared to non-displaced.

Table 2. Descriptive Statistics for control variables bifurcated by Displaced and Non-Displaced Families

Variable	PWB	Age	Household Size	Dependents	Income	Education (HH)
Displaced	3.18	42	8	6	2.2	1.5
Non-Displaced	4.38	41	6	5	3	2

Source: Based on author's self-administered survey

Table 2 illustrates descriptive statistics for displaced households relative to non-displaced. It is observed that the average value of PWB came out to be 3.18. It summarizes the demographics of the respondents. Mean age in our displaced sample is 42 years, whereas mean household size is 8 members which include 6 dependent members. Mean income and education of the head of displaced household is lower than non-displaced.

Table 3. Descriptive Statistics for Control Variables Bifurcated by Gender

Variable	PWB	Age	Household Size	Dependents	Income	Education (HH)
Male	3.74	42	8	6	3	2
Female	3.53	30	6	4	2	1

Source: Based on author's self-administered survey

It is illustrated that the psychological wellbeing of females is relatively low contrary to males. Correspondingly, mean age, income, and education of females is also lower than their male counterparts.

Table 4. Pairwise Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Psychological wellbeing	1.000						
(2) Age	-0.107	1.000					
(3) Household Size	-0.108	0.186*	1.000				
(4) Dependent Members	-0.176*	0.243*	0.938*	1.000			
(5) Income	0.149*	0.017	0.288*	0.122	1.000		
(6) Total Earners	0.135*	-0.034	0.563*	0.253*	0.536*	1.000	
(7) Education of HH	0.215*	-0.125	-0.217*	-0.224*	0.193*	-0.065	1.000

Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Based on author's self-administered survey

The variable of psychological wellbeing is collinear with all demographic factors as illustrated in the table above.

5. Empirical Analysis and Discussion

The empirical analysis is categorized into two main segments– T-statistics and Ordinal Least Squares (OLS) regressions. The former is used as a hypothesis-testing tool, to determine if there are

significant differences between the mean values of displaced and non-displaced households. OLS, on the contrary, is used to estimate the relationship between dependent variable and independent variables via controlling for control variables.

5.1 Differences in Means of Displaced and Non-Displaced Families

Since mean tests are deficient in disentangling differences pertaining the PWB of displaced and non-displaced households, therefore, two sample t-test is applied to gauge differences in means of PWB of displaced and non-displaced households. The variable of PWB is further categorized into six dimensions – autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance (the dimensions are explained in chapter 3). Two-sample t-test is applied on each one of these dimensions for both displaced and non-displaced households.

Table 5. Two- sample T-Tests with Equal Variance

Variables	Mean 1 (Non-Displaced Families)	Mean 2 (Displaced Families)	Diff	T-Value
Psychological Wellbeing (PWB)	4.4	3.2	1.2	8.3***
Dimensions of PWB				
Autonomy	10.6	6.8	3.8	7.7***
Environmental Mastery	8.7	4.4	4.3	10.1***
Personal Growth	10.6	9.3	1.3	3.4***
Positive Relations	11.6	8.5	3.0	5.3***
Purpose in Life	11.7	10.0	1.7	3.6***
Self-Acceptance	9.2	6.5	2.7	5.0***

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$
Source: Based on author's self-administered survey

The results show statistically significant differences in the mean of PWB of non-displaced and displaced families (t-value 8.3) as the p-value is coming out to be highly significant. Significant differences are also observed in means of all other dimensions of PWB which are discussed in order of significance. *Environmental mastery* is observed to be highly significant which indicates that displaced families relative to non-displaced lack the ability to choose or change the surrounding environment through their physical or mental actions. In other words, they are unable to control or effectively use resources or opportunities to their very own benefit. The dimension of *autonomy* indicates that displaced families are more concerned about the expectation and evaluation of others, thereby, relying on judgment of others to make important life decisions and conforming to social pressures to think and act in certain ways (Seifert, 2005). According to Ryff (1989), this happens because they lack independence and are unable to make decisions without the approval of others. *Positive relation with others* between displaced and non-displaced families according to the theory Seifert (2005) indicates that the former may have few close, trusting relationships with others; often finds it difficult to be warm, open, and concerned about others; are isolated and frustrated in interpersonal relationships and are not willing to make compromises to sustain important ties with others. Displacement results in social disarticulation which according to Vivoda (2017) results in weakening of community cohesion, informal neworks and interpersonal ties among displaced persons thereby affecting their relation with others particularly when they get relocated to new communities/neighborhood. Displaced families' relative to non-displaced have low *self-acceptance* as they feel dissatisfied with self, are disappointed with what have occurred with past life, troubled about certain personal qualities and therefore wish to be different than what they are. In other words, they may lack positive psychological functioning and self-regard (Ryff & Keyes, 1995) because displaced people live under stressful situations and therefore are affected by harmful psychological conditions (Aziz, 2017), which results in low self-acceptance. The belief that one's life is purposeful and meaningful (*purpose in life*) and a sense of continued growth and development (*personal growth*), may differ for displaced families contrary to non-displaced as the former can lack a sense of meaning in life with hardly any goals or aims, which can result in personal stagnation. Displaced families can be marred by inability to develop new attitudes and behaviors.

5.2 Psychological Wellbeing of the Displaced and Non-Displaced Families

This section illustrates empirical findings of the impact of displacement on the psychological wellbeing of those who have been displaced relative to those who are non-displaced, controlling for demographic factors (age, household size, dependent members, income, total earners, and education of head of household).

Table 6. Determinants of PWB between Displaced and Non-Displaced Families

Variables	Eq. (1)	Eq.(3)
	The dependent variable is psychological well-being	
Displaced Hs	-1.206***	-1.297***
	(0.139)	(0.151)
Gender (HHHs)		-0.382**
		(0.185)
Age (in years)		-0.00917
		(0.00575)
Household size (in no.)		0.00529
		(0.167)
Dependents (in no.)		-0.0509
		(0.164)
Income (in scale)		**0.218***
		(0.0734)
Total earners (number)		0.199
		(0.392)
Education of HHS		0.0361
		(0.0706)
Constant	4.389***	4.278***
	(0.0668)	(0.321)
Observations	165	165
R-squared	0.294	0.409
Probability > F	0.00	0.00

Note: Coefficients in each cell correspond to different estimations by Ordinary Least Squares.

Robust standard errors reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

Reference category of displaced HHs is non-displaced HHs; for gender it is male HHH.

In equation 2, controlling for demographic variables, the PWB of the displaced still remains significantly lower than the non-displaced. Interestingly, it is found that PWB of female-headed households is significantly lower than their male counterparts during the episode of displacement. It is generally perceived that men are more constructive thinkers and intrinsically more practical in nature. This finding is in line with the study conducted by Matud et al (2019) which signifies the embedded gender stereotypical and traditional socialization practices in our existing patriarchal societies. Further, results suggest that the income of the households significantly correlates with their PWB, where lower levels of income are associated with lower PWB and vice versa. The existing literature also suggests that lack of income increases the vulnerability of individuals towards psychological distress (Sareen et al., 2011). The overall strength of the relationship is significant and confirms a good fit as illustrated by the values of F-statistics and R-square.

Conclusion and Policy Recommendations

The main aim of infrastructure development projects per se is to promote economic growth, alleviate poverty and improve the standard of living, but sometimes consequences can be disruptive for those in the project area. Projects acquire land and property, forcing people to relocate. The adverse socioeconomic outcomes of development-induced displacement are well-known. However, there are certain intangible costs that are associated with mental health and psychological well-being, which are often relatively ignored. This research study has examined the psychological well-being of displaced people in the metropolitan city of Lahore due to the construction of Orange Line Metro Train.

Our main empirical finding suggests that displacement significantly undermines the psychological well-being of displaced households. It has implications for all the stakeholders related to the whole process of infrastructure-led development projects. The decline in the well-being of the displaced families caused by stress and trauma experienced during the course of displacement and relocation, suggests lack of resettlement planning on the part of government which results in higher psychological costs. Laws that specifically deal

with resettlement issues generally do not exist. This is because resettlement was not an issue when these laws were made back in 1894, as maintenance of law and order, and not development, was the main priority of the colonial government. Hence to date, due to absence of prudent policies, infrastructure projects address resettlement issues as they arise on ad hoc basis. This underlines the need for a resettlement and rehabilitation policy. The policy must commence with devising a social impact assessment plan with the aim of assessing the potential adverse impacts of a certain project because if the impacts are not completely identified in the beginning, it becomes challenging to fully mitigate them later.

Secondly, it is important that project-affected people should participate in the decision making since they are making a pivotal contribution to the development process by giving up their homes and livelihoods. In this manner, participation will provide project authorities with the perspectives of the displaced, which can prove to be critical for their complex long-term re-establishment. Moreover, participation of potentially displaced households could minimize information asymmetries and transaction costs during discourse of displacement as it will also assist them in cognizance of rules and regulations related to land acquisition and provision of compensation. Adequate provision of compensation is necessary; otherwise, resettlement efforts will be in vain. The Land Acquisition Act 1894 has a particularly harsh impact on those who are non-titleholders of land because it does not recognize them as the intended beneficiaries of compensation due to forced displacement. Therefore, the law needs to be updated and amended. Titleholders and non-titleholders should be considered as intended beneficiaries of the resettlement plan.

Moreover, this law should contain clauses on resettlement of displaced families in an adequate manner, particularly in terms of reconciliation of their social connections and networks. The disruption of social ties is a key mechanism by which development-induced displacement may negatively impact the psychological health of displaced families. This is because social capital may be linked to poverty indicators such as income, livelihood, employment, health, education and food security and its disruption may take its toll on the psychological well-being. Hence, government should be responsible for providing a conducive resettlement environment for displaced families, where they can resettle in an adequate manner with minimum disruption of social connections.

One form is to provide alternate housing to the displaced families, in addition to cash compensation, so that they could get resettled in a particular area. Therefore, an option for alternate housing should also be included in the Land Acquisition Act (1894). Moreover, the act should also ensure that governments take responsibility of displaced people on psychological grounds by extending counseling sessions to those who are psychologically disturbed. They should have a counseling network to help people. In this regard, government can collaborate with private counseling networks through public private partnership. And lastly, to discourage patronage system, an unbiased monitoring and evaluation mechanism should be in place for the entire process of land acquisition, price assessment of land and provision of compensation.

References

Adity, J. (2017). Psycho Social Correlates of Quality of Life of Pakistan Occupied Kashmir Displaced and Non Displaced Persons.

Aziz, A. (2017). *Individual difference predictors of well-being among displaced persons who live under stressful conditions* (Doctoral dissertation, University of Leicester).

Cernea, M. M. (1990). Poverty risks from population displacement in water resources development. *Development Discussion Paper Harvard Institute for International Development*, (355).

Cernea, M. (1995). Understanding and preventing impoverishment from displacement: Reflections on the state of knowledge. *Journal of Refugee Studies, 8(3),* 245-264.

Cernea, M. (1996). *Bridging the Research Divide: Studying Refugees and Development Oustees.* World Bank.

Cernea, M. (1997). *The risks and reconstruction model for resettling displaced populations.* World Bank Environment Department. Washington DC.

Cernea, M. M. (1998). Impoverishtnent or social justice? A model for planning resettlement. *Oxford, New Delhi.*

Cernea, M. (2004, October). Impoverishment risks, risk management, and reconstruction: A model of population displacement and resettlement. In *UN Symposium on hydropower and sustainable development* (Vol. 27). Beijing: United Nations.

Cernea, M., & Mathur, H. M. (2009). *Can Compensation Prevent Impoverishment? Reforming Resettlement through Investments and Benefit‑sharing.* New Delhi: Oxford University Press.

Chao, L. (1990). State plans new rules for dam resettlement. *China Daily*, (2632), 4.

Chiruguri, S. K. (2015). Search for theoretical model to measure displacement: Anthropological reflections. *International Research Journal of Social Sciences*, *4*(7), 46-53.

Disanayake, H., & Ratnayake, R. (2018, January 30). *Psychological risks of resettlers in resettlement planning:* A study in Moragahakanda resettlement project (MRP).

Downing, T. E., & Garcia-Downing, C. (2009). Routine and dissonant cultures: A theory about the psychosocial cultural disruptions of involuntary displacement and ways to mitigate them without inflicting even more damage. *Development and dispossession*, 225-253.

Endeshaw, G. (2016). Impacts of Urban Renewal Induced Displacement and Resettlement on the Economic and Social Life of Displaced People: The Case of Yeka-Ayat 2 Condominium, Addis Ababa, Ethiopia. *AAU. Addis Ababa, Ethiopia*.

Gupta, D., & Singh, P. K. (2018). The hidden cost of development—A Review of mental health issues of displaced tribal populations in India. *Journal of Public Health*, *26*(6), 717-723.

Herath, D., Lakshman, R. W., & Ekanayake, A. (2017). Urban resettlement in Colombo from a wellbeing perspective: does development-forced resettlement lead to improved wellbeing?. *Journal of Refugee Studies*, *30*(4), 554-579.

Internal Displacement Monitoring Center website accessed on 3rd September 2022 https://www.internal-displacement.org/database/displacement-data

Kaushal, N. (2009). Displacement: An undesirable and unwanted consequence of development. *The Indian Journal of Political Science*, 77-89.

Malik, A. (2011). Pro-Poor Urban Development and the Antecedents of Poverty and Exclusion in Lahore. *Pakistan Journal of Urban Affairs, 1*(1), 3-13.

Matud, M. P., López-Curbelo, M., & Fortes, D. (2019). Gender and psychological well-being. *International Journal of Environmental Reserach and Public Health, 16*(19), 3531

Oginyi, R. C., Mbam, O., & James, O. (2017). Depression, Psychological Distress, Social Support and Coping Strategies as Predictors of Psychological Well-Being Among Internally Displaced Persons. *Middle-East Journal of Scientific Research, 25(*6), 1269-1279.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069-1089.

Ryff, C. D., & Keyes, C. L. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-727.

Sareen, J., Afifi, T., & McMillan, K. (2011). Relationship between household income and mental disorders: findings from a population-based longitudinal study. *Archives of general psychiatry, 68*(4), 419-427.

Scudder, T., & Colson, E. (1982). From welfare to development: A conceptual framework for the analysis of dislocated people. In *Involuntary migration and resettlement* (pp. 267-287). Routledge.

Seifert, T. A. (2005). The Ryff scales of psychological well-being. Retrieved from Center of Inquiry at Wabash College: https://centerofinquiry.org/uncategorized/ryff-scales-of-psychological-well-being/

Stavropoulou, M. (1994). The right not to be displaced. *Am. UJ Int'l & Pol'y, 9*, 689.

Vardiwale, S. (2007). Psycho-Social Study of Project Affected Families of Sardar Sarovar Project Gujrat.

Vittas, D. (1994). Resettlement and development; the Bank-wide review of projects involving involuntary resettlement 1986-1993. Washington D.C: The World Bank.

Vivoda, V., Owen, J. R., & Kemp, D. (2017). Applying the Impoverishment Risk and Reconstruction Model to Involuntary Resettlement in the Global Mining Sector. *C. f. SR i. Mining (Ed.). Brisbane Centre for Social Responsibility in Mining.*