

**IMPACTS OF INFRASTRUCTURAL DEVELOPMENT
ON THE LIVELIHOOD OF LOCAL PEOPLE:
A CASE STUDY OF SULTAN BAHU BRIDGE JHANG PAKISTAN**

**Mazhar Abbas¹, Akbar Ali², Sumera Tul Hasan³
and Hamad Khan⁴**

¹ Pakistan Institute of Development Economics, Islamabad, Pakistan
Email: phdmazharabbas@gmail.com

² Ghent University, Belgium.
Email: akbar.ali@ugent.be; msakbarali785@gmail.com

³ Department of Sociology, University of Okara, Okara, Pakistan
Email: sumerahasan@uo.edu.pk

⁴ Department of Sociology, Abdul Wali Khan University
Mardan, Pakistan

ABSTRACT

Development of infrastructures played a significant role to sustain the livelihoods of local communities in the developed as well as in developing world. The purpose of this research was to investigate the both positive and negative impacts of development project on the livelihood of the local community. In case of negative impacts of infrastructure project, an important question emerges i.e. what kind of coping mechanism are adopted by the local community to sustain their livelihoods? The study had taken “Sultan Bahu Bridge” (SBB) on the bank of river Chenab, located at Ghar Maha Raja near Shoor Kot district Jhang. This is a development project which was constructed for better transport connectivity of Ghar Maha Raja to through road and bridge to main cities of Pakistan. This study used the qualitative method for analysis. Twenty-five semi structure and unstructured interviews were conducted through informal interviews. The respondents were selected from five stakeholders which are farmer, labors, businessmen, shopkeepers, and employees. The impacts of Sultan Bahu Bridge were found different on various groups of the people. Respondents from Ghar Maha Raja were more satisfied with the construction of the bridge. The more affected group of the people was farmers from right bank. The development project like SBB affected all assets of the livelihood. This development project has adverse impacts on the coping mechanism and it decreased the resilience level of the local people against flash flooding. The overall perception of the people about SBB from Ghar Maha Raja was positive but the people from adjacent communities have considered this project as negative for them. It is suggested that the negative impacts could be minimized by making spillways and provided the alternative location for settlement. Furthermore, when even there is any infrastructure project, planner should consider its positive and negative affect and design it accordingly to minimize negative impacts.

KEYWORD

Infrastructure Development, Coping Mechanism, Sultan Bahu Bridge Pakistan,

INTRODUCTION

Role of the infrastructure development is significant that it helps to bring the economic as well as social development in the world (Ghosh, 2011; Looney 1989). This is considered as the life blood for the industrial growth. (Groots et al., 1999; Wanmali and Islam 1997). Jochimsen (1996) has explained the definition of the infrastructures, it is the sum of the all personal, martial and institutional facilities and the data which is available at place. It has important role in providing input for the production and services to enhance the economic activities at its maximum level. According to Ahmad and Cynthia (1992) there are four conditions that explains the infrastructure that infrastructure are the services or the facilities that help to render the economic activity. Secondly the outcomes of the infrastructures have economic and social impacts, third that's services are indispensable, forth the investment on the infrastructure is indivisible.

According to Jochimsen, those infrastructures have three basic forms material, personal, and the institutional infrastructures. 1996 Biehl (1986) explains the material infrastructure consists of all material goods such as transportation, education all facilities of water provision, roads and bridges, and health facilities and the administrative structure for the conversation of the nations resources are perceived as the material infrastructures. Term infrastructure was first used by the military officials by the end of the world war two for their military purpose (Youngsn, 1967). This term is used in economic literature in different meaning by the economists such as social; infrastructure, economic infrastructure, hard infrastructures, soft infrastructures, physical and economic infrastructures, and material infrastructures (Ahmad & Cynthia, 1992).

There is numerous work which elucidates that infrastructure deployment has helped enhance the economic growth. It is the prerequisite for the economic growth. It helped to improve the increase the per capita income of the people by improving the condition of the gross domestic production in the world (Latif, 2010; Chakravorthy & Mazumder, 2009). Infrastructures such as roads, health facilities electricity and sewages facilities, played a greater role in enhancing the incomes of the people, but also it has improved the livelihoods of the local communities in the world. So these infrastructures are important for the sustainability of the livelihoods (Faridi, 2015; Imran & Naizi, 2012; Latif, 2010).

However, there is lot of literature which advocates the negative impacts of the infrastructure development for local communities. (Kumar, 1997; Scudder, 1970; Supplla & Gray, 1977). Development of the infrastructure in the urban areas as increased the level of danger from the flash flooding (Konrad, 2003). Infrastructure development creates the regional disparities and infrastructure such as the some negative ecological and social impacts (Rondinelli, 1982; Scudder, 1970) Chamber, (1992) defines livelihood as the sum of the all capabilities assets, and activities which are essential for the survival human life. Livelihood is perceived as sustainable when it has capacity to bounce back from all kind of external shocks. According to (Carney, 1998) there are five part of the livelihood physical human natural financial and social capital. All the members of the communities consume these assets of the livelihood and invest them in future needs (Islam at el, 2014). Freudenberg (1986) explained that social impacts of any

development process are very significant because these are the consequences which are used in policy making and social wellbeing. Fraser (2014) argued that the hazard of flash flooding is the outcome of the unplanned development which was incurred in urban setting without accessing the societal conditions. There is evidence that development of infrastructure facilities helped to decrease the poverty level however it has negative impacts also noted in different parts of the world (Faridi, 2015; Imran & Naizi, 2012; Latif, 2010).

REVIEW OF LITERATURE

Fiedorowicz and Rzepka (1997) term infrastructure was initially used by the army officials. The main purpose of this usage was to describe the logistic and technical arrangement which is imperative for the army. After that this term was included in the academic literature and it was used by scholars by different names and purposes. He further explains that infrastructures are essential for the economic production and it is a pre-condition for the functioning of the economy. Rees (1984) has a glance on the history of infrastructure development in the world after World War Two. Establishment of a common market in European countries was the outcome of the Treaty of Rome in 1957. So this region has seen enormous economic and social uplift due to infrastructural development in the next two decades. According to (Wanmali and Islam, 1977) infrastructure is mainly classified as hard infrastructure and soft infrastructures, examples of hard infrastructure are roads, railways, schools and health facilities, soft infrastructure includes banking and credit systems, communication and marketing systems. It is proved that infrastructure in the developing world has a positive effect on the livelihood. Hard infrastructure provides a framework for the soft infrastructure.

Bhatia, (1999) defines infrastructure as all the facilities and activities that are helpful in the economic growth. There is evidence from the World Development Report (1994) that infrastructure development plays a crucial role in economic prosperity and sustainability of the livelihood of the people. Ehrlich & Szilagy (1980) argued that infrastructure development is a major part of the integral policy of the Hungarian government. Infrastructure like railways, bridges and roads played a key role in bringing improvement in the Hungarian economy. Prabir (2004) classified infrastructure in three major parts: these are physical, social and financial infrastructure. It is possible to increase productivity from the development of infrastructure. He further divided it into Economic Overhead Capital and social overhead capital in provision of economic and social services to improve the livelihood of the community. However, these facilities on one side provide benefits to the local communities but on the other hand they have adverse effects on human life and social settings. These infrastructures created regional disparities among the different regions of the world.

World Bank (1994) recommended that the role of infrastructure varies due to different factors from case to case and other factors such as project planning and implementation. Bougheas et al. (2011) argued that it is unclear that infrastructure like roads and telecommunication are key to bring development in the livelihoods of the people. The key factor which plays the role is the efficiency of the infrastructure; it is clear that the efficiency of the project is possible if it is clearly planned and implemented with great care.

and consulting with the local communities. According to Robles (1998) role of the government in development and implementation of the project is not clear. One side a development project help to sustain economic development but on another hand it the under and inefficient usage of project fund creates problems and degrade the economic output. Looney and Winterford, (1992) argues that there is strong relationship between the infrastructural development and growth of livelihood. There is lake of consultation among developing countries such as Pakistan in role of infrastructural development. There is need to improve the whole system of infrastructural development in Pakistan.

Shughart (2006) elucidated the causes of hurricane Katrina in United States of America that main cause of this disaster was the quality of the construction material used was not good. There is delay in the evacuation during the time of the flooding. So mismanagement, created the disaster of flash flooding. Barker (2005) elaborated that due to wrong decision making in implementation of the project caused degradation of the environment the current negative effects that's are the results of the collisions between the environment and manmade mistakes. There are so many factors which are behind this phenomenon such as political decision making is one of them. According to Han et al., (2000) with high rate of economic development is the outcome of the over limit use of the natural recourses. And it has disastrous effects on the human environment and livelihoods of the local communities in all around the world. So this phenomenon is hammering the social and environmental degradation. Storey (2012) pointed out that urban pollution is major issue of China, Vietnam and East Asia countries and the whole region. Excessive economic and degradation of the natural environment are the factor responsible for this. It has also created the urban living issue in the whole region.

Erikson (2008) argued that there is strong relationship between economic activity and environmental damages. Another reason is the lake of interests of the government and the lake of research to tackle the issue. Daylay (1996) explored that occurrence of disaster have some political causes which help to generate the disaster. In case of America, elections factor play a role in development of infrastructure. Most of the government spends money on the development projects by the political pressure and vested interests leads to low performance of the infrastructural development projects. Kemp (2008) describes that losses of flooding in America are very high, due to all walks of the life are affected. Daylay (1996) explains the reason for this disaster. The infrastructures we develop are not capable of dealing with pressure of flash flooding. One main reason for this failure is the political vested interests in dealing of the projects which cause unbearable losses to the livelihood of the local communities. Second is the funding of the projects and third reason is the planning of the projects. Srinivasan (2001) illustrated that is important that after the completion of the project to reevaluate the benefits and losses of the projects.

METHODOLOGY

This study was conducted in Ghar Maha Raja where Sultan Bahu Bridge is located. This study is qualitative and explanatory research design has been used. This explanatory

research design was used because this study explains the problems of local communities and impacts of development project. Probability sampling method was used in the research, further in this method cluster sampling was used at different stages which was dependent on the characteristics of the population. Two stage cluster sampling was applied to collect the sample from the population. Clusters were made on the basis of geographical proximity at the first stage. After that cluster was indicating the area from where the units of data collection were accessed. At the second stage cluster were divided in to sub clusters and data was collected from the selected samples. Unit of data collection were divided in to five categories (shopkeepers, businessmen, laborers, employers and farmers). From the sub-clusters the samples was selected through the random sampling method. For the collection of data fifteen structured and unstructured fifteen interviews five focus group discussion and five key informants were used for data collection. Data was analyzed through thematic analysis. Framework analysis tool was used in thematic analysis for the analysis of data. Transcription familiarizations with data indexing and coding, identification of themes are steps carried out for analysis of data.

RESULTS

Transportation Facilitates

The development project of Sultan Bahu Bridge ease the problem in transportation system of that area such Ghar Maha Raja. Before the construction of the bridge the boots were used to move across the mighty river which was danger for the human lives. This consumes almost four hours of the travelers from Ghar Maha Raja to Mulloh Morr of Shoor Kot. Secondly the Historical shrine of Sultan Bahu is located in Gar Maha Raja and it was very difficult for the religious tourists to move across the river This Bridge also facilitated so a lot to them. There is positive sentiment of the respondents of the transport facilities which are available due to this project in that area. So this development project played a vital role in provision of transport services to local communities and connecting them to whole country.

Business Opportunities

With the completion of this development project in the Ghar Maha Raja there is strong perception that this helped to grow the business opportunities to the local people in that area. Property rate were higher due to construction of road and Bridge. New construction of shops and small businesses such as Khuddi work and small hotels were constructed. A small market for the agricultural products such wheat, cotton and fruits was established in that area. So overall this development project helped the local people to establish small new businesses in their area to earn the livelihood.

Facilities to Laborers and Employees

There is perception in that area that the construction of Sultan Bahu Bridge project has benefited to every segment of the society in Ghar Maha Raja vicinity. Due to better connectivity and transport system Daily wages laborers are able to work in adjacent city of Jhang and Shoor Kot and Ahmad Pur Sail. Government and private employees have felt a

sigh of relief due to road and bridge construction. All these different walks of life of people return to home at evening which was not possible before.

Facilities to Shopkeeper and Farmers

The categories of Shopkeepers and farmer were satisfied with development project specially from the Ghar Maha Raja. But the farmers from the far long areas to left bank of the river have disastrous affects to their livelihoods. However the farmers of GMR town are getting benefits from this project. This development project provided a chance to the chance to the shopkeepers to access their products from all over the Pakistan. Shopkeepers from the other vicinities have faced difficulties due to higher flooding due to this bridge however, the shopkeepers from GMR town are satisfied with this project. Overall all this project help to improve the livelihood in that area.

Negative impacts of Ghar Maha Raja Bridge

	Physical Capital	Human Capital	Financial Capital	Social Capital	Natural Capital
GMR	Most of the respondents argued that SBB enhance business, transport facilities and created employed for locals	Improvement Health facilities due SBB people are more satisfied	Income of Employees shopkeeper and businessmen increased and they are satisfied but farmers and labor facing losses in form of permanent loss of life and their land	There is no effect on the social capital of Ghar Maha Raja.	Prices of land are much higher Employees and labors having find the opportunities to work. But due to noise and transport issue creating some problems
Basti Ghulam Abad	Physical capital is harmed during the flood time	Due to transport facility people are getting health facilities from Shoor Kot and Jhang	By comparison of five year before construction of SBB Incomes of the families reduced	People are poor normally they have to support their families to. They sale their animal or assets of family and they forced to do this	Farmers sale their trees in their land which is cause environmental degradation
Naiko Kara	Most of respondents homes were totally demolished due to flash flooding	Mostly respondent said there is danger of infectious has been increased due to flooding in that area	People having less income after the construction of SBB project	Most of the respondents from this area said that social of whole community is not harmed	Respondent from this community perceive this project as a main cause of flooding in their area.
Rashed Poor	Due to SBB project people lost their homes and their animals	Many families lost their dear ones due to flash flooding	Due to destruction of crops and homes the income of the people are low	Social capital is harmed	Agricultural land has become he regular part of river so it affect negatively

DISCUSSIONS

It is evident from the literature that infrastructure development has a significant role in fostering the pace of economic and social development in all around the globe. Infrastructure development has fulfilled the different type of the needs of the people. Bhatia (1999) argued that infrastructure development has different effects on different walks of life of people. Road, Railways, air ports, are the examples of physical infrastructure which benefited India in enhancing in economic productivity. Socioeconomic development is the outcome of the infrastructure development. The major aim of Construction of the Sultan Bahu Bridge development project was to improve the connectivity and road infrastructure, and to make the lives of people more easier. Secondly the intention of the government was to save the people from the hazard of the flooding which historically smashed the livelihoods of the local communities. This development project was proved as blessing for the one segment of the society, however the segment of the society have adverse effects of this project. This project has created two group of the people one was benefited group and other was at loss. The role of the government is very important because of the implementation of the project their major lake in this phase of the project. And the losses were incurred due to bad implementation of the project.

According to Beddhabed and Prabir (2014) that development projects in any area help to revive the livelihoods of the people, it also enhances the standards of life. In the same the development project of Sultan Bahu Bridge supported the local communities of Ghar Maha Raja to improve the live standards through improving the livelihoods. The protective Band and the road infrastructure has helped the a portion of the community to which has faced every year flash flooding in that area. Han et al, (2000) the development project which are poorly planned it has potential to create disaster in any part of the world and disrupt the livelihood of the local communities. Sultan Bahu Bridge project is the example of this scenario because in that area the intensity of the flooding water was very low however, the flooding after the construction of the bridge is very dangerous. So losses of flooding after the construction to the local infrastructures such as local rods, houses, and animals are more intense than before. Government and nongovernmental aid which was somehow sufficient in past but it does not cover the losses of recent flooding due to this bridge. Scudder 1970 explained the case study of Kariba dam project this was indentured to bring development but it created perils for the local communities in the same way Sultan Bahu Bridge Project disrupted the livelihoods and also weakens the resilience and coping mechanisms of local communities in that area.

CONCLUSION

Poor planning by the government of the development project was one of the major factor that disrupted the livelihoods of the local communities. Location of the Sultan Bahu Bridge project was inappropriate. Coping mechanisms and community resilience level was decreased by the construction of the project. Government supporting mechanism to sustain the livelihoods of the local communities were not up to the mark awareness about the flood resistant crops is absent that most of the local

communities member are mostly dependents to the landlords. People of these communities are not aware of their political rights so they get their rights. Respondent from the adjacent communities such Rasheed Pur Naiko Kara were not satisfied with construction of this development project.

POLICY RECOMMENDATIONS

The length of the protection Band should have to be increased. Government should have to facilitate all those people who want to relocate to adjacent districts. New flooding resistant seed varieties have to be introduced it will help to increase agricultural income to sustain livelihoods of the people. There is urgent need of the people that government and Jhang district administration should make the extra water passage on both side of the bridge to that will help to reduce the chance of the flash flooding in that area.

REFERENCES

1. Babbie, E. (2013). *The basics of social research*. Cengage Learning.
2. Barker, A. (2005). Improving Local Capacity in Coastal Management: Experiences and Lessons from the Developing World. *Journal of Coastal Research*, 42, 387-393.
3. Biehl, D. (1986). *The contribution of infrastructure to regional development*. Luxembourg: Office for official publications of the European Communities.
4. Bogle, J. (1977). Infrastructure for rural development. *Ekistics*, 43(257), 195-198.
5. Bougheas, S., Demetriades, P. and Mamuneas, T. (2000). Infrastructure, Specialization, and Economic Growth. *The Canadian Journal of Economics/Revue canadienne d'économique*, 33(2), 506-522.
6. Boyatzis, R.E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage. Case Western Reserve University, USA.
7. Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
8. Brody, S.D., Bernhardt, S.P., Zahran, S. and Kang, J.E. (2009). Evaluating local flood mitigation strategies in Texas and Florida. *Built Environment*, 35(4), 492-515.
9. Bryman, A. and Bell, E. (2015). *Business research methods*. Oxford University Press, USA.
10. Burchell, R., Crosby, M. and Russo, M. (2010). Infrastructure Need in the United States, 2010-2030: What Is the Level of Need? How Will It Be Paid For? *The Urban Lawyer*, 42/43(4/1), 41-66.
11. Carney, D. (1998). *Sustainable rural livelihoods: what contribution can we make?* Papers presented at the Department for International Development's Natural Resources Advisers' Conference.
12. Chakravorty, U. and Mazumdar, J. (2008). Openness, Lobbying, and Provision of Infrastructure. *Southern Economic Journal*, 74(4), 1149-1166.
13. Chambers, R. and Conway, G. (1992). *Sustainable rural livelihoods: practical concepts for the 21st century*. Institute of Development Studies (UK).
14. Chandy, T., Keenan, R.J., Petheram, R.J. and Shepherd, P. (2012). Impacts of hydropower development on rural livelihood sustainability in Sikkim, India: community perceptions. *Mountain Research and Development*, 32(2), 117-125.

15. Cohen, C. and Werker, E. (2008). The Political Economy of "Natural" Disasters. *The Journal of Conflict Resolution*, 52(6), 795-819.
16. Dayley, R. (1996). Infrastructural adjustment: The Political Economy of Infrastructure Development and Marginalization in Thailand. *Crossroads: An Interdisciplinary Journal of Southeast Asian Studies*, 10(1), 77-112.
17. Depoorter, B. (2006). Horizontal Political Externalities: The Supply and Demand of Disaster Management. *Duke Law Journal*, 56(1), 101-125.
18. Desai, A. (1958). Community Development Projects—A Sociological Analysis. *Sociological Bulletin*, 7(2), 152-166.
19. Ehrlich, É. and Szilágyi, G. (1980). International Comparison of the Hungarian Infrastructure 1960-1974. *Acta Oeconomica*, 24(1/2), 57-80.
20. Faridi, M.Z., Chaudhry, M.O. and Ramzan, M. (2015). Role of Infrastructure in Poverty Alleviation: Evidence from Pakistan. *Pakistan Journal of Social Sciences*, 35(2), 533-542.
21. Freudenburg, W., Gramling, R., Laska, S. and Erikson, K. (2008). Organizing Hazards, Engineering Disasters? Improving the Recognition of Political-Economic Factors in the Creation of Disasters. *Social Forces*, 87(2), 1015-1038.
22. Ghosh, A. (2011). Physical infrastructure and development of secondary sector: an econometric analysis for six states in India. *The Journal of Developing Areas*, 44(2), 207-216.
23. Ghosh, B. and De, P. (2004). How do different categories of infrastructure affect development? Evidence from Indian states. *Economic and Political Weekly*, 39(42), 4645-4657.
24. Glasson, J. (2001). Socio-economic impacts 1: overview and economic impacts. In *Methods of environmental impact assessment*, (pp 36-57), Routledge.
25. Kumar, R. (2009). *Research Methodology 3rd edition: A Step by Step Guide for beginners*. SAGE Publications Ltd.
26. Shrestha, D.K. (2014). The impact of sustainable infrastructure development in the sector of environment, livelihood, access and ownership in Nepal. *Int. Res. J. of Science & Engineering*, 2(4), 121-30.
27. Strauss, A.L. (1987). *Qualitative analysis for social scientists*. Cambridge University Press City.
28. Supalla, R. and Gray, J. (1977). Local Socio-Economic Impacts from Coal Developments in the Southwest. *Western Journal of Agricultural Economics*, 1(1), 201-205.
29. Terchunian, A. (1988). Permitting Coastal Armoring Structures: Can Seawalls and Beaches Coexist? *Journal of Coastal Research*, 65-75.
30. Walliman, N. (2010). *Research methods: The basics*. Routledge.
31. Wanmali, S. and Islam, Y. (1997). Rural Infrastructure and Agricultural Development in Southern Africa: a centre-periphery perspective. *Geographical Journal*, 163(3) 259-269.