

**Exploring the effects of road construction on isolated societies: A case study of
Phander valley.**



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Abstract

This study investigates the socio-economic, cultural, and environmental impacts of the Ghizer Expressway on Phander Valley, a remote and traditionally agrarian community in Gilgit-Baltistan, Pakistan. While road infrastructure projects are often associated with national development, their localized consequences—particularly in isolated, culturally rich regions—remain underexplored. To address this gap, the research adopts an interpretivist philosophy and inductive approach, employing a qualitative design based on semi-structured interviews and focus group discussions. Seventeen participants, representing various socio-economic and occupational backgrounds, were purposively selected to provide diverse insights. Data were transcribed, translated from the local language (Khowar), and thematically analyzed using NVivo.

The findings are organized into five key themes: economic transformation, changes in land use and agriculture, enhanced accessibility, socio-cultural shifts, and environmental consequences. While the expressway has facilitated economic diversification, improved access to education and healthcare, and empowered women's participation in local markets, it has also contributed to environmental degradation, cultural erosion, social inequality, and rising living costs. The study highlights both the opportunities and vulnerabilities introduced by rapid infrastructural change.

This research contributes to the literature on rural development and infrastructure by offering a micro-level, community-centered perspective. This study gives recommendations for inclusive policy making, for instance, local entrepreneurship promotion, cultural conservation, and inclusive monitors. Finally, this study posits that there is a need for infrastructure development that should promote economic development and at the same time respect the culture and the environment in the transforming mountain areas.

1 Introduction

1.1 Chapter Overview

Chapter one provides the background information and justification for choosing the topic of this research, which is to analyse the effects of road construction in Phander Valley. This is followed by the research background and problem statement that seeks to establish the importance of infrastructure development in remote areas and the lack of research on the multifaceted impacts of this phenomenon. The chapter then presents the research objectives and questions of the study as well as the justification and purpose of the study. Last, the structure of the thesis is given to demonstrate how each chapter will help to achieve the research objectives.

1.2 Research Background

It is a well-known fact that infrastructural development has a tremendous impact on the social, economic, and cultural development of remote areas. For instance, road construction ensures the provision of access to market, education, health, and administrative services that help in the overall development of the region, which also helps in eradicating poverty (Ali and Pernia, 2003). In Pakistan, many mega-projects are being undertaken to connect underdeveloped regions to the national and even international network for transportations like the KKH and CPEC. One of these is the Ghizer Expressway which seeks to link the almost secluded Phander valley to the rest of the urban and economic world. Although such connectivity is expected to bring about many benefits, its sustainability presents worries on short and long-term effects on the communities and the environment. On the positive note, road projects are useful in the enhancement of economic

activity, the transportation of people and goods and thus economic mobility (Fan and Chan-Kang, 2005) but on the negative side, road projects result in changes in land use and utilization, deterioration of the environment, cultural depredation and social displacement of people. Nonetheless, road construction in areas such as Phander Valley, which is located in a remote cultural region, may bring other social impacts that are not easily predictable. The integration of enhanced physical connectivity with the socio-cultural and physical environment is a topic that has not been adequately discussed in the context of Northern Pakistan. Hence, it is timely and essential to determine the various direct and indirect effects of road infrastructure on the people of Phander Valley. This paper aims to help to fill this gap by providing a critical discussion on how changes in road access improve socio-economic development, environmental characteristics, and the community status within the valley as perceived by the affected people.

1.3 Problem Statement

While road construction projects in remote areas are seen to have numerous advantages, there is still inadequate knowledge about their multifaceted impacts; especially in Phander Valley of Gilgit-Baltistan. The Ghizer expressway, which has been constructed to connect Gilgit and Chitral has brought drastic changes in the infrastructural development. However, these change brings social, economical, ecological, and cultural implications into question. Though infrastructural development is tied to economic growth and better services provision (Banerjee, Duflo and Qian, 2020), it has negative cultural effects, gender stereotype shifting and environmental impacts if not well understood (Porter, 2014). In the Phander valley, the people living in small close knit communities that are still largely involved in agriculture, small scale trading, and maintaining their rich cultural heritage, the way improved accessibility affects their ability to earn a living, the community fabric, and the environment has not received much attention. Existing literature has

predominantly focused on national-level benefits of transportation infrastructure, neglecting micro-level community outcomes in remote highland areas. Moreover, limited participatory research exists that centers the voices of those most directly affected. Without localized assessments, policy interventions risk prioritizing economic growth over cultural preservation and environmental resilience. Thus, there is an urgent need to investigate how road construction influences migration patterns, economic structures, gender roles, and communal identity in Phander Valley. Addressing this research gap is crucial for ensuring that development initiatives are inclusive, sustainable, and responsive to the social realities of marginalized mountain communities.

1.4 Research Question:

- 1) How will the socio-economic conditions of Phander Valley be affected by the improved road?
- 2) How has the road influenced the accessibility and connectivity of the Phander Valley?
- 3) What are the impacts of the road's construction on the environment?
- 4) How has the road's construction impacted the economic structure and its impact on the livelihoods of the residents of Valley especially in the context of migration and new business opportunities?
- 5) How has road development changed the socio-cultural dynamic including community cohesion and religious practices?

1.5 Research objectives:

- 1) To assess the impacts of the improved road structure on the socio-economic conditions of Phander Valley.
- 2) To assess the changes in accessibility and connectivity.
- 3) To find out the impact of road development on the environment.
- 4) To analyze the impact of road construction on the social dynamics, especially focusing on gender roles and community cohesion.
- 5) To explore how migration and new business opportunities resulting from improved roads have impacted the socio-cultural dynamics of Phander Valley including social identity, community cohesion, religious practices, and local livelihood.

1.6 Significance of the Study

This study holds significant value for both academic and policy-oriented discourses, particularly in the context of infrastructure-led development in remote and marginalized regions. By focusing on the Ghizer Expressway's impact on Phander Valley, the research contributes to a nuanced understanding of how road construction influences socio-economic conditions, cultural dynamics, environmental sustainability, and community identity. While existing literature has largely emphasized the macroeconomic benefits of transportation projects, there is a notable gap in micro-level assessments that foreground the lived experiences of local populations. This study addresses that gap by offering an interpretive, community-centered analysis rooted in qualitative inquiry. The findings will inform development planners, NGOs, and government agencies about the unintended social and ecological consequences of infrastructure expansion. Furthermore, the

research provides valuable insights into how such projects can be aligned with inclusive development strategies that respect local knowledge, gender roles, and cultural heritage. For scholars, it adds to the growing body of critical infrastructure studies by highlighting the complexity of modernization efforts in highland and borderland communities. Ultimately, this research seeks to ensure that infrastructure development is not only economically viable but also socially just and environmentally responsible.

1.7 Structure of the Thesis

This study is structured into five interconnected chapters to ensure a coherent and systematic exploration of the research problem. Chapter One introduces the study by outlining the research background, problem statement, objectives, research questions, significance, and scope. Chapter Two presents a critical review of the existing literature, identifying theoretical frameworks and key empirical findings relevant to road development and its socio-cultural and environmental implications. Chapter Three details the research methodology, including the philosophical stance, research design, data collection methods, sampling strategy, data analysis procedures, and ethical considerations. Chapter Four presents the findings derived from semi-structured interviews and focus group discussions, organized thematically to reflect participants' perspectives. Chapter Five discusses these findings in relation to the literature, and chapter six provide conclusions, identifying limitations, and proposing recommendations for future research and policy. This structured approach ensures the study remains focused, transparent, and academically rigorous throughout.

2 Literature review

2.1 Introduction

Road construction is seen to be a driver of the country's economy especially for developing countries such as Pakistan (Menhas et al., 2019). It is also among the government's agenda to foster development whereby remote regions get access to the nation as well as the global economy (Shoukat et al., 2016). Pakistan's northern territories, including Gilgit Baltistan, and the western province of Baluchistan along Khyber Pakhtunkhwa are secluded and have the least access to natural resources hence are least developed. These regions have been excluded for years from the mainstream economy because of their location which has always locked them out from participating in various mainstream economic activities. The construction of roads is essential in ensuring that these parts are accessed by road by the developed urban centers. The improved roads mean there is a better chance of being able to access important service deliveries such as health care, and education among others.

On the same note, there are benefits and drawbacks in constructing roads in such regions. On one hand, the road has the potential to open up economic and social opportunities while on the other hand, its effects could be negative and unwanted on people, culture and the environment (Ali et al., 2019). The construction of roads especially in isolated areas leads to commodification of the natural resources. They also have the potential to disrupt the indigenous cultures by introducing other cultures from other areas, which may negatively impact the existing cultures.

Research on the impact of road construction in marginalized districts is of significant concern to researchers, policymakers, and development practitioners (Menhas et al., 2019). The Pakistani

government has initiated several road projects in the more developing region including the Karakoram Highway (KKH), the China-Pakistan Corridor (CPEC) roads, the Ghizer Expressway, and many other small road projects. Ghizer expressway aims to connect Gilgit city to Chitral through Phander Valley. The government of Pakistan created the Gilgit–Shandur Road as a 216-kilometer route to join Khyber Pakhtunkhwa with Gilgit-Baltistan where it serves as an essential piece of infrastructure for regional development including economic growth. The road features two lanes which add up to 11.3 meters while offering side shoulders with dimensions of 2 meters and lanes measuring 3.65 meters. A total of Rs16.755 billion funds the project which receives guidance from the National Highway Authority (NHA) during its development. Construction of this project has been delegated to the National Logistics Cell (NLC) alongside Ningxia Communications Construction Co. Ltd. which comes from China. The feasibility study together with the preliminary design of the project was completed by Zeeruk International Pvt. Ltd. along with Engineering General Consultant (EGC) Pvt. Ltd. and Kasib Associates (JV). The project will boost regional socioeconomic growth and trade and tourism through its all-weather high-capacity road link between both territories (Environmental Impact Assessment (EIA, 2021).

Phander is one of many valleys in the Ghizer region. It is a picturesque valley of Gilgit-Baltistan, Pakistan, which being in the northern area of the country presents itself as a perfect site to explore the consequences of development especially the construction of roads. This small place is famous for its stunning sceneries, local ethnic culture and customs, and restricted contact with the contemporary world. The government has launched the Ghizer expressway to link this valley to the metropolitan which has raised questions regarding the overall effects of the construction of roads on the people.

This research will aim to analyze the effects of road development on Phander Valley in which both positive and negative consequences will be considered. This study will focus on the perspectives of residents to understand how the enhanced connectivity has affected the economy, social setting, culture, and the physical environment. It will also pay attention to the extent to which roads harbor the aspirations of the targeted population.

Literature review

The Socio-Spatial Integration Theory served as a guide for this study (Ruiz-Tagle 2013). This theory explores how the physical transformation in the form of infrastructure development, changes the social interactions, inclusion, and exclusion inside the community. It goes further than that, however, implying that the physical change in a landscape presents in a form other than a purely technical intervention, that it also affects social structures, mobility, and integration. According to Ruiz-Tagle (2013), socio-spatial integration is the result of infrastructure building that promotes connectivity, reduces spatial inequalities, and increases social cohesion. But if they are not managed properly, these transformations can end up becoming a source of new segregation, marginalization, and socioeconomic disparity. Akhtar et al., (2021) have emphasized on the significance of road construction for resource-deficient regions of the country stating that better and improved infrastructure in such areas is an important source for improving the economy of the country. Roads help in carrying of goods or traveling from one point to another for marketing or business purposes. With good roads, the remote areas are connected to the urban centers which can help the local producers to market their products and goods in the general market. This access to the markets leads to a higher demand for local products thus the local farmers, artisans and small business people get higher incomes. Several studies identify the economic value of road

infrastructure. Nawaz et al. (2021) revealed that road expansion contributes directly as well as indirectly toward employment, with a 10% expansion in road infrastructure contributing 4.3% toward employment. Likewise, Ali et al. (2020) asserted that road infrastructure makes agricultural commodities more market-accessible in Gilgit-Baltistan, which can be advantageous for the fresh fruit sector

For instance, the road construction in Pakistan's Northern Areas, as highlighted by Mohmand et al. (2017) has not only improved transportation but also increased the overall economic opportunities for the region. The improved means of moving perishable produce such as fruits, vegetables and dairy to the urban market places has reduced the spoilage and hence have improved the returns for the farmers. This access to a broader market allows diversification in agriculture, as farmers are more likely to invest and grow high-value crops knowing that they can reach big markets.

Moreover, road construction plays a role in the development of sectors other than agriculture in rural areas. Better infrastructure is associated with investment in various sectors, including tourism, mining, and the small-scale manufacturing industries (Baig et al., 2010). While it is true that in areas such as Gilgit-Baltistan the construction of roads has helped in the promotion of tourism which is now one of the largest sources of revenues. Improvement of roads means that the previously out-of-bounds areas become touristic zones, since people can get there using their own cars or hired transportation. Thus, it enhances the development of hospitality, retail, and other related businesses. These economic activities contribute to employment opportunities and the development of other sub-sector businesses, thus enhancing the economy. The study made by Ahmad & Islam (2011) evidenced that the improvement of the road network enhances agricultural

yield in Baluchistan. The improvement of road networks also facilitates the transportation of seeds and fertilizers in the farm, hence enhancing the yields in farming. In addition, improved road networks has facilitated access to extension services, training and information by farmers and other people in the local region resulting to improved and modern practices in farming. This in a way, not only increases earnings for the people of the regions but also makes food security available in the areas.

Another benefit of road construction is provision of access to the basic facilities. Reduced travel time and cost implies that more people from the locality will be able to access health facilities, schools and markets among others, thus improved roads (Asher & Novosad, 2020). It has crucial economic benefits. Better health means more effective working force or better educated people are likely to engage in skilled work or business activities. It is also evident that health and education have a significant impact in the improvement of the local economy as they contribute to the formulation of a capable and skilled human capital, whereby, this will lead to the attraction of more investment in the areas .As well, the provision of good roads is also another factor which will also lead to the development of local business and entrepreneurship as noted by Kanwal et al., (2019). For instance, by getting access to the appropriate raw materials or market place. It is the local people who are able to start up new business ventures and also those that are able to expand the existing ones. It may therefore have a vast influence on the local economy in a number of ways such as causing employment opportunities, initiatives as well as playing a role in the promotion of SMEs. In the same respect, these businesses also contributed to the expansion of the flexibility of businesses in the local economy, for more resilient changes.

Besides, economic gains, the construction of roads can positively impact the quality of life of the people inhabiting the remote areas of the regions. The construction of good roads enhances access to social services as well as reduces the costs of transportation and time which may be used constructively. Siddiqui et al. (2023) revealed that the road construction is a key factor to increase social interaction and mobility particularly in the backward and terrible geographical zones of Pakistan. The five communities are secluded because mountains, deserts, and poor transport system hinder them from easily accessing other neighboring communities and the society. Hence construction of roads assists these communities get connected with others around, making the societies more socially integrated.

The works of Khan et al. (2023) and Zia (2016) have also investigated the impact of road construction on mobility and integration of people in the society. This means that those in the rural areas can easily travel from one place to another thus intermingling with other such isolated groups of people. The advantage is that it fosters the sharing of ideas, culture and knowledge hence enhancing the social and cultural development of these regions. Better roads can provide easy access to essential resources (Rajović & Bulatović, 2016). For example with improved roads, children in remote villages can attend schools that were previously out of reach, this increases the literacy rates of not just the community but overall the country. Educated youth means, more opportunities for higher education and skilled employment, which can in return help breaking the cycle of poverty.

Many studies have shown adverse effect of construction in isolated communities. There are significant economic advantages of road construction in far-flung areas of Pakistan but these benefits are not equally distributed among all regions and communities (Ullah et al., 2021).

Building roads can increase existing disparities, causing significant inequalities and challenges, specifically for vulnerable and oppressed communities. Wolf (2020) has highlighted that the economic advantages of road construction often favor those who are already comparatively rich. These people already enjoy a better life, and have good access to resources, capital, and information, thus able to capitalize on the new facilities that building roads brings, these people are either landholders, business owners, or those who have well-established connections in the urban markets. As a result, these people may gain substantial increase in income and wealth thus widening the already existing gap between them and the poor segments of the community.

Additionally, the construction of roads also causes an increase in prices; these prices prevent low-income families from affording homes near newly developed roads (Hussain et al., 2024). In some cases it also leads to the displacement of these families, they are evicted and they are forced to seek other less profitable areas. In addition, many poor families do not have the capital to fully utilize the new opportunities that are associated with road construction. Due to lack of adequate capital to purchase transport and other business requirements, they cannot rival the other well-endowed people, and hence poverty and inequality worsen. The exploitation of natural resources is another issue that can be seen in the construction of roads in remote areas (Ibañez. 2020). When the road construction opens up the remote areas to external markets and investors, there is a huge chance of resource exploitation in these regions, resources such as minerals, timber, and land. Although it may lead to the improvement of short term returns, particularly to external investors and the local elites, it impacts on resource depletion that the communities had relied on for survival.

Almost all the time, it is the external investors and the large companies that benefit from the resource exploitations while the local people gain very little economically. It leads to a situation

where the exploitation of the resources is taken to the other regions and not invested within the community which enhances its development. This causes an increase in the dependency of local communities on external actors while losing control of their own resources and economic future. Road construction can also disturb the traditional livelihoods. In remote areas of Pakistan, communities have developed sustainable economies that are closely tied to the local culture and environment (Cook & Butz, 2021). Such as pastoralism, small-scale agriculture, and artisanal crafts have been the backbone economy of remote areas. Road construction brings new forms of economic activities that compete and displace the traditional ways of livelihood. Road construction poses a significant risk to the cultural fabric of remote communities. Improved and new roads often bring an influx of external influence that can disturb and erode the traditional customs and values of the communities (Hussain et al., 2024). This is known as culture erosion, especially concerning areas with rich cultures like Gilgit Baltistan, where unique and rich traditions have been preserved because of geographical isolation over centuries.

Jan and Hussain (2017) argued that the improved roads have accelerated the culture homogenization in remote areas. As roads open the previously isolated regions to the broader influence of urbanization, mass media, and consumer culture, local traditions, and practices often face challenges to compete with these external forces. This may cause gradual fading of traditional languages, arts, rituals, and traditions, as youth are more drawn towards the lifestyles of urban centers. Mechanical solidarity is very important in remote areas, cultural values and tradition play an important role in fostering a sense of belonging and togetherness among the community members (Cake & Pederson, 2024). As the tradition erodes due to the influence of external factors, the social fabric that holds communities together also begins to unravel leading to disturbance in

solidarity. This is very concerning in the region where social cohesion is very important for their collective survival in harsh climates or resource-scare environments.

Bowitz & Ibenholt (2009) stated that loss of cultural identity has economic impacts too, as in many regions traditional crafts, music, and festivals not only serve as a source of cultural pride but also serve as a source of income. As the cultural expression fades away with time so does the economic potential. Moreover, the change towards homogenized cultural norms often the commercialization of culture, where local traditions are repacked and sold in a form that appeals to outsiders but loses their actual meaning and value for the local people themselves. Environmental impacts related to road construction are severe and most commonly involve the devastation of regional ecosystems (Marzouk et al., 2017). Such construction brings about immense destruction of the environment since it entails the clearing of vegetation, modification of natural landscapes, and disruption of wildlife, all of which have lasting effects. For instance, Shah and Mehmood (2018) have given an example of this in the study done on the Karakorum highway whereby, the construction of the road has negatively impacted on the region in the following ways; deforestation, villages, and the destruction of slopes.

This aspect of deforestation connected with the construction of roads is quite alarming, particularly related to sensitive ecosystems, like the northern regions of Pakistan (Ali & Askari, 2023). Forests of this region are also important in maintaining ecological, hydrologic, and soil conservation functions. Habitat loss results to the loss of species diversity. Most parts of Gilgit Baltistan have some rare and threatened species mostly due to its difficult terrain, climate, and low populations. Construction of roads also becomes an issue in conserving their habitats since it divides the area that can support their existence. The impacts of road construction on the environment clearly affect

the living standards of the local people directly or indirectly (Hussain et al., 2024). Deforestation leads to a reduction in the supply of fuel wood which is a necessity, especially in cold areas. Again, pollution of land and water resources can lead to low agricultural yields hence food scarcity and poverty amongst the poor populace. Socioeconomic activities such as road construction which involves clearing natural landscapes and forests thus contribute to the occurrence of natural disasters including floods, landslides, and glacial lake outburst floods. It was noted by Abbas et al. (2019) that these natural disasters have increased in areas where road networks were established.

This, along with other previous literature, illustrates the impact of road infrastructure development on local communities due to its multifaceted nature. Improved connectivity has also been investigated in various other studies as it encourages economic development, and accessibility to basic services and it transforms the social and cultural life. Such theories as Socio-Spatial Integration Theory (Ruiz-Tagle, 2013) offer a good framework to comprehend the relationship between infrastructure development and social transformation, specifically, how space changes affect social relations, economic structures, and social integration. Although extensive literature is found on the economic and environmental impacts of road construction projects, almost no work has been carried out to understand these impacts at a localized level, especially in remote and culturally disparate areas as in the case of Phander Valley. Macroeconomic studies have been made primarily, not leaving a chance to study the impacts of improved transportation infrastructure on traditional livelihoods, migration patterns, and kinship networks. In addition, the interaction between road development with cultural and religious practices, community cohesion, and local governance structures needs more attention. Adopting a qualitative method in this study tries to fill these gaps by exploring the lived experiences of the people in Phander Valley. The research aims to give a nuanced view of how the Ghizer Expressway is transforming the social, economic,

and environmental outlook of the region by embedding the insights of community members and other relevant stakeholders.

3 Research methods

3.1 Chapter Overview

This chapter defines the approach followed in the study to establish the social, economic and cultural effects of road construction in Phander Valley. This is followed by a justification of the interpretivist research philosophy as well as the inductive research approach before elaborating on the research design type, which is qualitative research. The chapter also describes the data collection techniques which are focused on the semi-structured interviews and focus group discussion and the rationale for purposive sampling technique and sample size. Thematic analysis with the help of NVivo software is explained as the analytical method and then the paper focuses on the ethical issues and limitations. Altogether, these components provide a proper framework for the study's investigation.

3.2 Research Philosophy

The study adopts interpretivism as the philosophical approach to the research since the study seeks to establish the experiences and the cultural stance of people that are affected by road development in Phander Valley. Interpretivism still holds that reality is man-made and therefore can only be understood based on the meanings people give to their experiences in the world (Schwartz-Shea & Yanow, p 15). This philosophy is apposite in areas where knowledge is context bound in social practices as it is in the development of infrastructure in isolated societies. As such, while positivism looks for universal laws by using numbers and statistics, interpretivism allows for richness of context in the study of the subject phenomenon, which is particularly helpful in understanding how road construction impacts the economy, culture, and society of the people (Pham, 2018).

Furthermore, the interpretivist paradigm supports the shared construction of knowledge between the researcher and the participants, which is highly appropriate for the regions that are deprived of attention and their voices are dominated by some superior powers. Although a number of approaches like critical realism present a combination of objective and subjective reality, they focus on structure agency, which might not be helpful in the intent of the present study to understand the perception of individuals and communities (Fletcher, 2017). Therefore, interpretivism does not only offer epistemological credibility but also methodological fit with the study's qualitative nature, in-depth interviews, and focus group discussions. This philosophical position makes the outcomes relevant to the participants' realities and therefore contributes to existing knowledge and to the improvement of policy in the region.

3.3 Approach

This study uses inductive research approach since it is effective in research studies that aim at building generalizable theory from research findings. Induction is the process of developing patterns, themes and meanings from rich qualitative data which is crucial when studying the complex effects of road construction to the society in Phander Valley. Thomas (2006) notes that inductive approach is most useful whenever a research focuses on exploring social facts in certain cultural and geographic locales, instead of starting with hypotheses and hypotheses-related hypotheses and deducing outcomes from them, as was done in this research. This is especially important in the present research that aims to investigate people's perceptions of socio-economic and cultural changes in specific communities and is most likely to be masked by a priori assumptions.

Also, inductive strategies are compatible with the study's interpretivist paradigm as both of them focus on the interpretation of meanings rather than on the measurement. For the same reasons, deductive approaches were considered unsuitable in this context; while hypothesis-based research is useful, using it in this study would lead to the oversimplification of patients' experiences by forcing them into narrowly defined categories. Deductive reasoning was also not considered because it seeks to explain the data collected with existing theories, while in this study, the goal is to develop a theory based on the participants' experiences. Therefore, the inductive approach does not only maintain the validity of the collected data but also improves the ability of the study to provide contextual knowledge useful for both theoretical and local policy analysis.

3.4 Research design

This research employs a qualitative research approach because the study is intended to examine the socio-economic, cultural, and environmental effects of road construction to the inhabitants of Phander Valley. Qualitative research is particularly useful when the study focuses on phenomena that are social, complex, and contextual and cannot, therefore be measured numerically (Denzin and Lincoln, 2011). This design helps the researcher to get the real-life experiences of the people within the context of their social worlds, which is in congruence with the interpretivism paradigm and inductive approach used in the present study.

As opposed to exploiting enumeration and Universality, two features of quantitative designs, qualitative designs advocate variance over volume which helps to expound on the meanings, beliefs and experiences (Creswell and Poth 2016). This is significant in the contemporary study when the everyday experiences of people who are in contact with infrastructures, including changes in the economy, women, and tribe – are of interest. Also, semi-structured interviews and

focus group discussions present a certain level of structure that allows for better participant involvement and also enables the development of themes in the process.

Other designs including, mixed methods and purely quantitative were considered but discarded. Although the mixed-methods design provided triangulation, the limitation of the resources and time meant that the use of the approach would have reduced the depth of the qualitative analysis. The use of quantitative research method was considered unsuitable for the study as it would entail measuring experience and discounting socio-cultural factors. As such, a qualitative design is justified both methodologically as well as in terms of context.

3.5 Method of data collection

In order to achieve the research objectives and to get an understanding of the multiple ramifications on social impacts of road construction in Phander Valley, this study used semi structured interviews and Focus Group Discussion (FGDs) as major data collection tools. These are suitable for obtaining elaborate and contextualized data and or/identifying narratives and shared perceptions especially where cultural realities and interpretations are of concern (Bryman, 2016).

This is because semi-structured interviews enable one to have an open-ended but guided method of obtaining individual impressions. The application of open-ended questions allows the participants to express themselves and demonstrate how road development has affected their lives in aspects such as livelihood, migration, and culture. DiCicco-Bloom and Crabtree (2006) noted that this method is ideal for cases when a researcher aims at understanding the deeper meanings and meanings that participants attribute to events and incidents and where ‘themes are developed

emergent during the interaction’. Additionally, the survey respondents include farmers, traders, students, and public officials, which allows capturing data of different social statuses.

In addition to the interviews, focus group discussions are an active method of obtaining community-level discourses and interactions. FGDs facilitate collective meaning-making and the co-construction of shared experiences, particularly useful in rural settings where community values are deeply entrenched (Zenari, 2014). By organizing separate FGDs for men, women, and youth, the study acknowledges the importance of intersectional perspectives and power dynamics in group conversations, thereby enhancing the validity and depth of findings.

Alternative methods such as structured questionnaires or ethnography were considered but deemed unsuitable. Structured surveys lack the flexibility to uncover nuanced interpretations, while ethnography demands long-term immersion that was impractical within the scope of this research. Thus, the chosen combination of interviews and FGDs provides methodological alignment with the interpretivist paradigm and maximizes the potential to uncover diverse, contextually grounded insights.

3.6 Sampling technique

This study adopts a purposive sampling method, which is a non-probability sampling technique commonly used in qualitative research to select participants who possess specific knowledge or experience relevant to the research topic. Given the study’s focus on the socio-economic and cultural effects of road construction in Phander Valley, purposive sampling enables the deliberate inclusion of participants such as farmers, traders, hotel owners, construction workers, students, and public officials, who are directly or indirectly impacted by the infrastructure development. As

argued by Palinkas et al. (2015), purposive sampling is particularly effective when the aim is to gain in-depth understanding from information-rich cases that can illuminate the phenomenon under investigation.

A total of 12 individual interviews and three focus group discussions (FGDs) were conducted to ensure adequate representation of diverse community perspectives. Each FGD consisted of 6–10 participants, with groups stratified by gender and age—men, women, and youth—to capture intersectional differences in experience. This sampling strategy allowed for both individual-level depth and group-level discourse. Although the sample size may appear small by quantitative standards, qualitative research emphasizes information saturation rather than statistical generalizability. According to Guest, Bunce and Johnson (2006), data saturation in thematic research often occurs within the first 12 interviews, making the sample size both methodologically and empirically sufficient for this study.

Alternative sampling strategies such as random sampling or quota sampling were considered inappropriate due to their reliance on representativeness and statistical inference, which are not the primary objectives in qualitative inquiry. The purposive method, by contrast, supports the interpretivist and inductive orientation of this research, ensuring that participants are selected for the richness of their insights rather than numerical distribution.

3.7 Data analysis techniques

The analysis process was guided by Braun and Clarke's (2006) guidelines on thematic analysis that include: getting to know the data, generating codes, themes, reviewing themes, defining

themes, and naming the themes and giving an account of the themes. The interviews and focus group discussion first had to be taken down in writing and translated from the local language, which here was Khowar, to English. These transcripts were then imported into NVivo where coding, categorization of themes and mapping of relationship between the themes was done systematically. It was also appreciated that NVivo was particularly effective in the handling of large amount of qualitative data and in keeping an audit trail, thus increasing the credibility of the analysis (Woods, Paulus, Atkins and Macklin, 2016).

There were other options of analysis such as the grounded theory or content analysis that were also dismissed. At the same time, while using grounded theory, the level of generating the piece of theory is beyond the possibility of the given study; in content analysis, the meaning is usually investigated with the emphasis on its frequency. Thematic analysis on the other hand provides a neat and scientifically appropriate method which enables the researcher to stick close to the research questions while at the same time making the process more systematic in identifying patterns from the participants' experience.

3.8 Ethical considerations

In this research, necessary precautions were taken to follow the ethical measures regarding subject protection, respect of their subjectivity and their self-determination in the investigation of the effects of road development in Phander Valley. The participants' consent was sought before they were administered through questionnaires in this study. Among the measures taken to address this include ensuring that the participants are informed of the purpose of the study, the use that will be made of the findings, and the fact that participation was voluntary, as recommended by Orb, Eisenhauer and Wynaden (2001).

As for the participants' privacy, their identities were kept anonymous and the nature of the information disclosed was confidential. All personal details that allowed the identification of the participants were omitted during the transcription and analysis of the material, pseudonyms were used instead. The audio recordings and the transcripts were kept safe and only the research team had access to them. In line with Wiles et al. (2008) recommendations, participants were also informed of their right to withdraw from the study whenever they wished without any penalties to avoid any pressure during the research process.

Extra care was taken on issues of cultural and gender sensitivity especially when conducting the focus group discussions. For example, we conducted the FGDs for men, women and the youth separately to enhance comfort and free flow of information which is acceptable in ethical research when dealing with conservative or rural Communities (Liamputtong, 2006). As for the ethical considerations, the research was approved by the relevant institutional review board before the study was conducted.

Thus, the incorporation of these ethical measures made the study not only methodologically appropriate but also ethically sound in terms of participants' rights, contexts and welfare.

3.9 Limitations

Despite the findings of this research, it is also important to note limitations that are found while undertaking this study regarding socio-economic, cultural, and environmental impacts of road construction in the Phander Valley. Firstly, the area under study is only one valley of the Gilgit-Baltistan, and this restricts the generalization of the study finding to other areas affected by such infrastructural projects. However, qualitative research does not seek generalizability in statistical

terms while, at the same time, the context under investigation may limit its generalizability. Secondly, the sample size used in this study is adequate for the purpose of generating themes and ensuring saturation but it may not include all categories of stakeholders within the community. It would have been possible to fail to incorporate certain groups such as seasonal migrants or people of certain classes due to limitation of access.

Third, the study used only qualitative data and thus there was no possibility to corroborate such data with quantitative data like economical data or records of migration. This may limit the multifaceted view of infrastructural influence due to the use of the mono-method design. Lastly, there is a language translation from Khowar to English during transcription which leads to interpretive loss, where some cultural meaning or expressions may not be fully translated. However, these limitations were controlled through proper methodological approach and handling of data hence making this study coherent and meaningful in its given context.

3.10 Chapter Summary

This chapter has presented a clear justification of the research method used in this study. It was justified to adopt an interpretivist philosophy and use inductive reasoning to analyze participants' experiences. A qualitative design was employed, using semi-structured interviews and focus groups to gather rich, contextual data. Purposive sampling ensured diverse yet relevant participant inclusion. Thematic analysis, supported by NVivo, enabled systematic examination of key themes. Ethical considerations, including informed consent and confidentiality, were carefully addressed. Finally, the chapter acknowledged limitations relating to scope, translation, and sample representation. These methodological choices collectively support the validity and relevance of the study's findings in the upcoming chapters.

4 Findings and discussion

4.1 Chapter Overview

In this chapter the researcher analyzed the collected qualitative data through thematic analysis. The section provides an overview of participant details, ensuring a diverse representation of perspectives. The researcher used Nvivo to create themes, which explored various aspects and influences of Ghizer Expressway in the context of Phander valley

4.2 Thematic analysis

The researcher employed thematic analysis to explore the impact of the Ghizer Expressway on Phander Valley. Data was collected through interviews with 11 research participants. The following table represents the details of the interview participants.

Table 1: Details of research participants; Source: Author's own

Participant Category	Number of Participants	Occupation/Role	Remarks
Constructor	2	Road construction & infrastructure	Insights on road impact on businesses and employment
Local Shopkeepers	2	Retail business owners	Changes in sales, competition, and market access
Hotel Owners (Local)	2	Hospitality sector	Impact of tourism growth on income and employment

Potato Contractors (Outsiders)	1	Agriculture & trade	Influence of external traders on local economy
Locals	2	General residents	Perspectives on lifestyle changes and economic shifts
Students	2	Education & future workforce	Youth aspirations and employment opportunities

The researcher followed all the steps of thematic analysis to identify recurring patterns and categorizing data into meaningful sub-themes and themes. This method allowed for an in-depth understanding of participants' experiences and perceptions. By systematically analyzing qualitative data, this study provides a comprehensive narrative of how the expressway has reshaped economic conditions in the valley.

4.2.1 Theme 1: The influence of Ghizer expressway on the economic transformation

The interview participants explored that the Ghizer Expressway has completely changed the economic conditions of Phander Valley. The improved road infrastructure has led to increased trade, business expansion, and a shift in traditional economic practices. For example, one of the participant, P2 believed that

“It’s paved the way for many new possibilities. It’s hard to scrounge up supplies so I wouldn’t have been able to open a shop before, but I did, and I love it. With the road comes regular goods, and I’ve gotten more customers to come from nearby valleys”

Similarly, one of leading economic influence of Ghizer expressway is based on the increasing business opportunities and improved business activities. In the past, businesses in the area were restricted to small, family-run shops catering to local needs. The better connectedness has attracted more traders, tourists, and new business ventures, bringing a more competitive and dynamic market. The road has considerably improved access to goods and services. The businesses that previously struggled to stock essential items now receive supplies regularly, leading to increased sales and profitability. For instance, one of the female entrepreneur, P2 stated that

“The road enhanced my custom clothing business substantially because I operate it from my house. Before the road I needed my husband or male relatives to get fabrics and sewing supplies from Gilgit during their trips.”

The tourism sector, in particular, has benefitted, with guesthouses, restaurants, and trekking services emerging as viable economic activities. Entrepreneurs who once hesitated to invest in tourism-related businesses are now capitalizing on the growing demand for accommodations and guided tours. The development of local handicrafts and traditional products has further enhanced the valley’s appeal to visitors. As it is evident from one of the interviewee response

“Initially when I thought of starting my hotel, there were practically no tourists passing by. I saw that potential after the expressway was built. I built a small guesthouse on my family’s land, and we were fully booked every summer within a year.”

While new businesses thrive, some small shop owners face difficulties due to increasing competition from larger businesses. The influx of external traders has altered the traditional market dynamics, compelling local entrepreneurs to enhance their service quality and product variety.

Furthermore, high property rents in prime commercial areas have made it hard for small businesses to grow or compete. For instance, P5 stated that

“There are many external investors, which makes it very difficult for local people to expand businesses. Yeah, they can find small jobs and small opportunities but the people with money are taking more benefits. They can buy land and expand businesses. They can invest in hotels like you can see in the valley that all the people with wealth have done”

Therefore, this new wave of commercialization presents both opportunities and threats. While the overall economic activity has increased, many local entrepreneurs feel overshadowed by wealthier investors who have the resources to expand at a much faster rate. The need for policy interventions that support small businesses through financial aid or regulatory protection is growing.

In addition, the interview participants discussed that due to the expansion of business activities in Phander Valley, diverse job opportunities have been created. Previously, most of the residents relied on agriculture and livestock for their livelihoods. However, with the expressway, new sectors such as hospitality, construction, and retail have emerged. As a local, P6 stated that

“After the road construction, I started working as a Mazda driver, delivering goods to the people, shops, and markets from Gahkuch and Gilgit city.”

As the tourism sector has grown, jobs in hotels, restaurants, and as local tour guides have increased. These new industries have provided many young people with employment, moving them away from traditional farming practices. For example, P8 mentioned that

“Our children who used to work and settle in cities will now be able to get jobs in the valley.”

Likewise, another participant P3 added that

Since the development, there are more economic opportunities than before so yes, now both males and females can get jobs in different areas like the tourism industry”

Previously, women were primarily engaged in household and agricultural work, but they have now entered guesthouses, handicraft businesses, and small retail shops, contributing to household income. Furthermore, infrastructure and new commercial building construction projects have employed skilled and unskilled laborers in the valley.

Moreover, another major impact of the expressway has been the ease of transporting goods, which has significantly influenced the local economy. Before the road was built, traders faced numerous challenges in transporting goods into the valley, leading to high prices for necessities. The improved infrastructure has reduced transportation costs, making essential products more affordable for the local population. For instance, one of the local shopkeeper, P2 mentioned that

“I am a shopkeeper, and this road construction has made it very easy to transport goods”

Thus, local businesses have also expanded their scope. The movement of crops, farm products, and other commodities has improved, allowing residents to commercialize their agricultural produce. Farmers who once struggled with market access can now sell their products beyond the valley, thereby increasing their income and reinvesting in better farming techniques.

Nevertheless, there is a noticeable shift from subsistence farming to a more market-dependent economy. Due to the construction of roads and the availability of new employment opportunities, people prefer to buy products from the market rather than produce them themselves. The improved

road has caused a change in lifestyle, particularly among the youth, who now favor business and service-related jobs over farming. For example, P7 believed that

Nowadays, given easy access to the markets, we choose to purchase it instead of growing it on their own. Young people no longer want to engage in farming anymore, and I can foresee a time when we will have to rely on outside sources for the bare essentials. ”

Hence, while this shift has enhanced income levels in the community, it has also increased dependency on external markets. The decline in self-sustaining agricultural practices poses risks to food security, particularly in times of market disruptions or economic downturns.

Additionally, the improved road infrastructure has led to increased migration, both within and outside the valley. Externally, families are moving to urban areas with better amenities such as health, education, and employment facilities. Despite the expressway’s benefits, basic challenges such as electricity shortages, lack of CNG, and severe climatic conditions make Phander Valley a difficult place to live year-round. For example, P6 stated that

“People come to the valley in summer mostly, and many local people leave the valley in winter and move to warmer areas. No doubt there is development in the valley but still very difficult to survive the harsh weather of winter. ”

Internally, people are relocating within the valley, particularly to areas along the expressway, in anticipation of business opportunities. While this migration trend is boosting commercial hubs, it is also creating economic disparities, as regions not connected to the road remain underdeveloped and excluded from new economic activities.

However, some participants mentioned that the Ghizer expressway has positive influence on the economic outcomes and lifestyle. The standard of living in Phander Valley has improved due to economic growth. Families now have increased incomes, allowing them to invest in better housing, education, and healthcare. Many households have been able to buy modern appliances, vehicles, and better-quality food, resulting in improved well-being. As an example, P5 highlighted that

“I am not able to create a decent lifestyle for my family but I can educate my children in private school LRS Phander. Previously very few people were able to afford to send their children to private schools LRS Phander, but now they can afford to send them to good schools.”

The expressway has also made travel easier, improving access to medical facilities and educational institutions. It has become more convenient for children to obtain higher education in cities, as transportation has significantly improved. Moreover, consumer goods are more readily available, enabling residents to enjoy a more comfortable lifestyle. As it can be extracted from the response of P9

“In old times, it wasn’t possible so people used to rely on Taveez, desi remedies or when things were out of control they would come to the Aga Khan Health Center. Now because of better roads, we have easy access to medical facilities”

However, these improvements come at a cost. The rising cost of living, coupled with inflation, has made it difficult for lower-income families to sustain their improved living standards. Additionally, the surge in property prices due to increased demand for housing and commercial

spaces has pushed land ownership beyond the reach of many locals. For instance, P7 highlighted that

"Maybe we need some kind of regulation. Otherwise, the locals who've lived here for generations might end up being pushed out of their own land."

Furthermore, a closer examination of gendered economic experiences reveals nuanced differences in how men and women engage with and benefit from this development. Male participants mainly focused on economic opportunities associated with movement and infrastructure development, which included venturing into the provision of tour guiding services, opening up small-scale hotels, and employment in transport and construction sectors. These activities are associated with high mobility, capital intensity which are generally associated with conventional male dominated sectors in the public domain. For example, P6 shared:

"After the road construction, I started working as a Mazda driver, delivering goods to the people, shops, and markets from Gahkuch and Gilgit city."

Another participant, P3, emphasized tourism-related growth:

"Since the development, there are more economic opportunities than before, so yes, now both males and females can get jobs in different areas like the tourism industry."

On the other hand, women's economic narratives referred to home-based businesses, which included selling embroidery or starting clothing businesses from home. These activities signify a peculiar compliance with the cultural expectations and restricted mobility; women use the better

road access to source raw materials and deliver finished products to other distant markets but all this is done from home. As P2 described:

“The road enhanced my custom clothing business substantially because I operate it from my house. Before the road I needed my husband or male relatives to get fabrics and sewing supplies from Gilgit during their trips.”

Another female participant (P9) noted:

“I make and sell embroidered shawls now. Tourists like them. I never thought my hobby could bring income, but now I can contribute to my family.”

This division demonstrates how infrastructure influences economic involvement: men are involved in more prominent, easily noticeable sectors like tourism, while women are in the hidden, domestic sectors of business; therefore, equal attention should be paid to both types of participation to encourage equal growth of the economy.

Therefore, the economic potential of the Ghizer Expressway has been revolutionized, the businesses have been opened new employment has been provided and the standard of living of the people of Phander Valley has been elevated. But the fast developments also brought some unfavorable factors such as the higher competition, the increase of living expenses and economic inequality. This is because the transformation of the valley from an agricultural based economy to a more commercial one, the social structure, in terms of both, the quality of life and level of income inequality is improving as well as deteriorating. These are prerequisites of the long-term sustainability of this transformation concerning changes in the business environment, governmental policies, and community adaptation measures against economic inequalities.

4.2.2 Theme 2: Transformations in Traditional Land Use and Agricultural Practices

In the past few decades, the socio-economic changes have led to the changes in the traditional land use and agriculture in the Phander Valley. Previously, the valley was mostly used for agriculture and pastures, where people cultivated crops mainly for consumption. Yet, due to the enhancement of tourism, the increase in the business and commercial activities and the construction of the Ghizer Expressway such as the Ghizer Expressway, more and more people are renting or even selling lands for non-agricultural uses. One participant (P7) noted,

“Not all people are stuck to traditional agriculture as a way of life. You can see people renting their fields to people who can cultivate crops and give the owner money for that.”

This change has also impacted labor dynamics in agriculture. While families once collectively engaged in farming activities, many now outsource farm labor, reducing the role of traditional household-based agricultural work. As Participant 6 reflected,

“Or even if they grow their crops, they do not toil in the farming field rather hire people to perform the labor work. Which was impossible before the development. Earlier, every member of the family was into farming; the males used to cut the crops, and the females used to gather them in one place. Then males used to transport them on donkeys to the houses of their respective owners. Where they were refined and then stocked for winter. Now the trend has been shifted to a different level where people pay labor for the task.”

This economic shift is accompanied by the conversion of agricultural lands into commercial plots for hotels, restaurants, and retail shops, particularly along newly developed roadside areas. While this shift has led to financial gains for many, it has also raised concerns regarding the future

availability of arable land and the erosion of ancestral agricultural practices. Participant 5 remarked,

“Some have sold bits of their pasture land so they could build shops or houses for tourists. I think that a lot of the farmland is going too quickly, but it’s good for business.”

With land prices increasing, it has become difficult for lower-income families to retain ownership. Some prefer leasing over selling to retain partial control, but external investors are increasingly influencing the valley's real estate and commercial dynamics. As Participant 5 explained,

“People are being smart and giving their fields to others and get money in return.”

The road development has not only changed land usage but also triggered shifts in settlement patterns. Locals are moving closer to roadside areas where they can more easily engage in trade, guesthouse businesses, or agriculture using transported machinery and fertilizers. Participant 6 observed,

“We needed to use some farmland for road construction but now we can transport fertilizers and machinery which has resulted in increasing productivity. They are also using their land for small shops or guesthouses.”

Alongside land-use changes, a noticeable shift has occurred toward the cultivation of cash crops. Potatoes have emerged as a dominant crop, particularly with the influx of external traders—referred to as potato contractors—who lease land from locals and introduce commercial-scale farming. These traders bring machinery, structured supply chains, and bulk production methods that benefit from improved transportation. Participant 10 described this development:

“Phander is very fertile and yields very good quality potatoes. These people cultivate it and then transport it to cities. This was possible because of developed roads... These people got huge land for a very low price, as locals were happy getting something instead of nothing from those fields... Over the years, these people have increased their production and are now experimenting with growing other crops, too.”

In addition to potatoes, fruit farming—particularly apricots and apples—has gained importance. While these fruits were once consumed locally or dried due to poor transport links, improved roads now allow for the sale of fresh produce in urban markets, generating greater income. As shared by Participant 3,

“As the new road connected Phander Valley to the main markets, my financial condition has become better... I sold my apricot harvest last year for nearly twice what it was before the road was built.”

Nonetheless, this shift towards cash cropping presents several challenges. Farmers face limitations due to the lack of adequate storage facilities, and dependence on monocultures has led to increased use of pesticides and artificial fertilizers, raising environmental concerns. Participant 10 expressed,

“Now it is very common to use pesticides and artificial fertilizer in the fields. If don’t use them we don’t get good yields like the potato contractors. It is a compulsion, even after knowing that these chemicals are harmful to our land in the long run.”

The Ghizer Expressway has not only changed the types of crops being grown but has also encouraged farmers to adopt modern agricultural practices such as mechanized irrigation and high-

yield seeds. These advances have contributed to improved productivity, but they also mark a departure from organic and community-based farming traditions. As stated by Participant 10,

“The production has also increased as people are using artificial fertilizers for crops. Previously, we used only natural fertilizers like cow manure. Which was good but not enough for all fields.”

While farming is increasingly profit-oriented, the younger generation is opting for tourism and business rather than agriculture, leading to a gradual reduction in farming activity. This generational shift raises concerns about the future of food security and the preservation of traditional knowledge. Finally, there has been a decline in collective farming practices. Once a communal task involving neighbors and families working together during planting and harvest seasons, agriculture has become more individualized and mechanized. This has reduced the social and cultural bonds once embedded in agricultural life, with economic efficiency taking precedence over traditional communal values.

4.2.3 Theme 3: Enhanced Accessibility and Connectivity Transformative Impacts of Improved Connectivity

Construction of Ghizer Expressway has significantly affect the communication and transportation system of Phander Valley by making it more linked with other cities and towns. These changes have affected the health, education, transportation and resources, which has improved the socio-economic development. Even before the construction of the road, people especially those living in the hilly regions or remote areas could hardly access the basic

amenities including, health and education facilities. Accessing health facilities or governmental institutions meant having to cross long and rough terrains, which resulted in the denial of essential treatment and education. The expressway has in particular eliminated these constraints which have made transport to be faster, safer, and more reliable. One of the female participants (p9) was of the opinion that better roads have greatly enhanced the access to healthcare:

“Improved transport systems mean that women can go for check up at the health center and at the same time gain faster access to hospitals in case of emergencies. This development can therefore be said to have brought general improvement of the maternal health care”

Another male participant (p7) acknowledged the positive outcomes for previously isolated communities:

“I am very happy for the people who were completely isolated, especially the hilly areas like Dalumal and Sarbal. Now these people have access to health, education, and markets.”

These infrastructural changes have extended service reach and provided vulnerable populations—particularly women and residents of remote villages—with timely access to critical facilities. Similarly, access to education has seen a marked improvement. Previously, students from distant villages had to either walk long distances or relocate to attend schools. The improved road system has made daily commutes feasible, thus reducing school dropouts and allowing students to remain within their communities while pursuing education. As noted by a senior government school teacher (p4):

“We have a few students from Golaghmulu (another village) coming to the school. It was possible because of the road. In the past, students had to stay with their relatives so they could

attend college in the valley, but now it is convenient for them to attend college and schools because of the road.”

Improved access to education has not only benefited students academically but also relieved families of the financial and emotional burden of sending children away from home. Additionally, beyond essential services, the expressway has brought about significant savings in time, energy, and cost for daily commuters. The convenience of faster and more direct routes has improved productivity, allowing individuals to balance multiple responsibilities in a single day. A senior teacher (p6) from the valley illustrated this change through his own experience:

“Moving around is much easier and faster now. I am from Dalumal and I teach in government boys' school Anotak. Previously I had to park my bike at Gologh and then travel by foot home. Usually, I had to wake up around 5:00 am to travel for 40–45 minutes on foot to reach Gologh and get on a bike. Descending the hill is still less time-consuming, imagine going back home after a hectic day of teaching for hours and then walking on the hilly path to reach home. It was very difficult especially at my age and in winter. Now I can directly ride my bike and go to the school. After the road construction, it is very convenient to travel within the valley and outside as well. It is time, energy and money saving.”

This account underscores the tangible improvements in quality of life for those working in public service roles and living in geographically challenging parts of the valley. Furthermore, the road has also impacted transportation economics by reducing vehicle wear and tear and decreasing travel time. This has lowered operational costs for transporters and passengers alike, making mobility more affordable and efficient. A van driver from the region observed:

“Once the roads are fully developed, it will be much easier and cheaper to travel to and from the valley. The travel time will decrease and so will the fare. Now we pay 1100 PKR to travel to Gilgit city and it is a 6–7 hours journey.”

Although the road is still under development in some sections, the early signs of reduced travel fares and operational expenses indicate potential long-term economic benefits for both residents and transport businesses. Therefore, with the help of construction of Ghizer Expressway the people of Phander Valley have been benefited with better connectivity. Apart from providing a connection that has led to better access to health, education and other amenities that were out of reach due to geographical barriers the road has also cut across the hardship of the day and enabled more people to engage in economic and social activities. These are all revolutionary formations in the way the region was set to pursue inclusiveness and sustainable development.

4.2.4 Theme 4: Social and Cultural Transformation Changes in Customs and Social Norms

The construction of the expressway has manifested positive change in the social and cultural life of Phander Valley. For instance, the most apparent advancement is the change in mobility and participation of women in the community. Since there is relative improvement in road network, women are now in a position to pursue education, health services, and employment without relying on male members of the family. In the past, the poor state of the roads deterred the women from moving around the village for other services. Now, the situation is changing, as women gain the confidence and freedom to travel for their needs and take part in the local economy. As one female participant (p2) shared,

“The access of females to the market has also increased due to this development of road. Phander was a valley where only male members used to have shops. Now we can see ladies having shops, a few are selling handicrafts. We have a ladies’ parlor here. Female tailors are available in the markets, which was not a thing before the roads. I think we will see more females in the market, once the road is fully developed. Our females are talented but they didn’t have any opportunities but now this is their chance.”

Another participant (p4) echoed this sentiment, reflecting on the changing cultural attitudes:

“I feel like the construction of roads has given more opportunities for females. Before the streets, there were no women shops in the markets, but now there are. We hardly used to see any women in the market areas, and it was considered wrong for women to be in market areas. Now there are ladies' shops, beauty parlors, and canteens owned and run by women. In a few years, I can predict that there will be businesses owned by women. Now there are ladies' tailors as well. So things aren't the same anymore, and that is a good thing.”

A participant (p7) also noted the gradual shift in societal roles:

“The construction of the road has created multiple opportunities that empower women as the traditional gender roles evolve. Women used to avoid business activities because traditional society assigned them domestic care duties. I frequently encounter women who operate their own businesses in current times. Two women have broken traditional gender norms by establishing a beauty parlor and sewing handmade clothing for sale in the village. Such things were absent from our previous reality.”

However, while these developments are empowering, they are not without challenges. The influx of outsiders—including tourists, traders, and seasonal laborers—has raised new concerns, particularly regarding female safety. Parents and guardians now express hesitation about allowing women and children to move freely, fearing harassment and overcrowding in public spaces.

A female respondent (P8) expressed her concern about this changing environment:

“Now it is more convenient for women to visit health centers for checkups. But as of now there are a lot of strangers from outside of the valley so many people also show their concerns regarding the safety of the women. In the past there were no outsiders so there weren’t any such concerns. Everyone in the valley is somehow related to each other and traditionally they are very respectful towards women. There was no aww teasing from males. Now there are strangers in the valley, not only the tourists but the potato field workers, who often are uneducated so women feel hesitant because of them. My female family members say that they feel uncomfortable because of these workers.”

Another participant (p6) reflected on how children's mobility has also been affected:

“No doubt road has made it easier for people to join events but at the same time it has made it difficult for children and women to walk around in the valley alone. Especially in the summer parents worry about the safety of little children as there are many tourists in the areas and a lot of vehicles as well. In the past, it wasn’t a big deal for children to roam around the valley or go to religious education centers (REC) and schools on their own, but now they have to go in groups or with an elder.”

Language barriers also remain a problem for some women, particularly those with limited education, making travel outside the valley a daunting experience. P7 stated that

“It is difficult for uneducated women to travel on their own because of the language barrier, they can’t speak Urdu so it is very difficult for them to navigate while traveling to cities even within GB, as Khowar is only limited to the Ghizer area.”

Alongside increased mobility, the expressway has facilitated greater interaction between the residents of Phander Valley and outsiders, introducing both opportunities and challenges. New exposure to different cultures, languages, and digital trends has inspired a new wave of openness, especially among the youth, who are becoming more expressive, confident, and entrepreneurial. For instance, p9 stated that

“It has also a positive influence as well. Our children are more aware of the surroundings now as the parents and schools are actively advocating that. They are becoming more confident, and their language and communication skills have also improved. By interacting and seeing different people, they have started thinking out of the box. My brother has started vlogging his daily routine after being inspired by a tourist.”

Despite the excitement around modernization, there is also a sense of loss. As economic activity becomes increasingly commercial, some residents feel that social warmth and traditional hospitality are disappearing. P6 stated that

“Earlier, people could invite their guests into the inside of their houses and prepare food for them. Today everything has turned into business—guesthouses, restaurants, and shops. It may be

due to the change in culture and social surroundings; people seem to be cold and communication is businesslike.”

In terms of economic impact, the road has created uneven development. Families located near the main road or those with resources to invest in shops and guesthouses have benefited significantly. In contrast, those in remote areas or engaged in traditional livelihoods are struggling to adapt. This disparity has heightened feelings of inequality, especially as commercial land becomes increasingly unaffordable. P5 believed highlighted that

“Yes, the conditions have changed but there is competition too. Competition not just between the local people, but also competition between locals and outsiders as well.”

Another participant (p1) commented on the lack of readiness for this rapid change:

“Locals cannot even afford their land, let alone invest in any business. Most of the adults of the valley are not so educated so they are afraid to invest and still attached to their traditional agriculture and way of life. This road development is very abrupt and I don’t think we as a community are ready for all the changes that come with it.”

This sense of exclusion is compounded by inflation, which has made essential goods and services more expensive. Those still relying on agriculture or manual labor are finding it harder to make ends meet. While prosperity is growing for some, the gap between those benefiting from the changes and those left behind is widening, creating visible social and economic divisions. One of the more unexpected social changes has been the emergence of begging behavior, particularly among children. Traditionally, begging was seen as dishonorable, and residents took pride in their

work ethic. However, exposure to tourists—especially those offering unsolicited money to children—has begun to normalize this behavior. For instance, p9 mentioned that

“Yes, it has a very big influence on the people of the valley, especially young children. We don’t have a begging culture here and the people here are very honor-conscious, but I have noticed that tourists—particularly domestic tourists—tend to give money to young children as a gift which can develop the habit of asking for money in children. The intentions of the tourists aren’t wrong but it is leading to something wrong, which is a begging culture. Growing up we have never seen anyone in the valley begging, but due to this current situation, we might end up with a begging culture.”

Altogether, the construction of the expressway has initiated a wide-ranging transformation of Phander Valley’s social landscape. While it has empowered certain groups—particularly women and youth—and opened up new opportunities for cultural and economic engagement, it has also brought challenges related to safety, inequality, cultural erosion, and moral shifts. The community is now in the position where it has to modernize itself and maintain its social and cultural values and unity.

Theme 5: Environmental Consequences of Road Development in Phander Valley

The construction of the expressway through Phander valley has brought about some physical changes on the area and most of them are raising concerns among the people of the area. For as much as road construction has empowered both the economic and social mobility, it has impacted the ecology. The following effects are easy to observe; they include deforestation. Many spaces of the forest were cut down to enable the construction of the road, which has also led to loss of plant

cover that would have held the slopes and reduce cases of soil erosion. Local farmers, who have used the forests as a source of pastures and for maintaining the balance of the ecosystem, are exposed to rising landslide hazards, and most of which occur during the rainy season. A local farmer (P7) commented,

“The trees also played the role of preventing landslides from occurring in the region. Since they were removed, even small rains are causing soil erosion, hence making our lands unsafe for carrying out farming on them.”

The removal of trees has disrupted not just farming practices but also traditional animal husbandry, with herders now forced to travel farther in search of grazing grounds. Residents point out that the physical clearing of land has also interfered with natural water drainage systems. During the road’s construction, blasting and excavation altered the flow of streams that had existed for generations, causing not only seasonal water shortages but also affecting irrigation and drinking water sources. As an elderly male participant (P3) stated,

“Some of the water streams have been existing for generations and our ancestors have been using them for many years but the streams have disappeared. The road has provided the opportunities for reaching the market but at the same time it has deprived the water source nearby.”

Beyond water loss, the poor planning of drainage infrastructure has led to waterlogging in certain areas. Rainwater tends to accumulate near roadsides and fields, hampering the fertility of agricultural land and sometimes making transport difficult during the monsoon season. Farmers

continue to report stagnant water near their crop fields, which affects soil quality and delays planting activities.

The absence of a proper sewage and waste management system has further compounded the environmental challenges. Previously, when the valley was a small, close-knit rural community, the need for formal sewage systems was minimal. But the rise in tourism and commercial construction—especially hotels and guesthouses—has introduced wastewater management issues. Without proper sewage channels, much of the wastewater is directly released into nearby streams and open areas, contributing to pollution and raising public health concerns. As a local elder narrated,

“We did not experience such situations in the past because our houses were small and we used to live according to traditions, not having an extensive sewerage system. But now, with the hotels and commercial buildings, the wastewater is being let directly into the environment, which pollutes water and consequently affects our health.”

Women in the community have voiced particular concern about hygiene and sanitation, fearing that the pollution of natural water sources could increase the risk of waterborne diseases among their families. Alongside this, the growing population of tourists has led to a rise in solid waste. Items such as plastic bottles, food wrappers, and disposable products are now commonly found littered along roadsides and in streams—an unfamiliar and troubling sight for locals who were once accustomed to natural biodegradation of organic waste. As a youth participant (P9) expressed,

“Tourism has been beneficial in the aspect of generating income, but on the other side, it has also introduced the problem of plastic waste. There are bottles and wrappers that are left in areas that used to be clean. If this continues, then Phander will lose its natural beauty.”

Another set of concerns has arisen around pollution related to construction activities. The use of explosives during road building has reportedly introduced harmful chemicals into the soil and water systems. Some residents worry that these substances are contaminating open water sources, making them unsafe for drinking and domestic use. Additionally, the increase in vehicular movement has raised dust and smoke levels in the valley, which residents—particularly the elderly and those with respiratory sensitivities—have found difficult to manage. As a youth participant (P10) further noted,

“Open water resources were drinkable, now there is dust and chemicals on it and we are not sure if it can still be used.”

Dust from construction, combined with traffic emissions, is reported to have caused a noticeable decline in air quality. Women and elderly residents in particular have noted breathing difficulties, coughing, and increased sensitivity to dust particles. What once was a serene and unpolluted environment now suffers from excessive noise and air pollution due to the influx of vehicles passing through the area daily. Those living closer to the main road complain of sleepless nights caused by the constant sound of passing traffic.

Beyond immediate pollution, residents have begun to perceive broader climatic changes linked to the environmental disturbance caused by the expressway. The removal of trees has not only reduced shade during summer months but is also believed to have affected local temperature

regulation. Those areas that were once shaded are now open to direct sun and therefore making longer hours of work in the farm more challenging. In line with the earlier discussion, another FGD participant (P5) said,

“Earlier we used to seek refuge under trees especially during the scorching of the sun in the midday but today trees are nowhere to be seen.”

Some people argue that such influences as deforestation and emission from vehicles are responsible for climate changes in the region. It is not unusual to hear about hotter summers, colder winters and a tendency of unstable climate. Some views hold that glaciers in the nearby mountains are melting at a faster rate, and that such degradation may lead to adverse effects on the availability of water in the long run in the region.

These changes have been described by the residents as the need to come up with sustainable development that will integrate environmental conservation with development of infrastructure. Although, expressway has added a positive impact to the social and economic life of the valley but the environmental impacts if not controlled can harm the ecological capital, agricultural productivity, and health capital of the region in a longer run.

Chapter summary

This chapter discusses the qualitative data analysis of the socio-economic and environmental effects of Ghizer Expressway on Phander Valley. Five major themes are distinguished here: the economic change, changes in land and agriculture, improvements in accessibility, cultural changes, and the environmental impacts. The expressway has brought about development in business through the creation of new business opportunities and convenient transport. Nevertheless, it also

brought new problems such as increase in the level of inequality, commercialization of land, loss of culture, and harm to the environment. Gender roles have evolved, with increased female economic participation. The chapter concludes that while development has spurred progress, it poses challenges to traditional practices, sustainability, and social cohesion.

5 Discussion

5.1 Chapter Overview

This chapter presents the discussion of the important findings obtained from the thematic analysis conducted in the previous chapter. It responds to the methodological framework in a direct manner as it provides an interpretive analysis of the impact of the construction of Ghizer Expressway on different facets of life in Phander valley. This is done in light of the Socio-Spatial Integration Theory that serves as a conceptual lens through which changes in social relations, economic activity, cultural practices, and interactions with the environment brought about by physical infrastructure can be analyzed. This chapter analyses the nature of the changes that have taken place and relates them to the respective literature to identify the causes and consequences of such changes. The argumentation of the analysis is presented logically and smoothly, with resulting themes revolving around socio-economic development, accessibility, gender, culture, and the natural environment.

5.2 Discussion

The Ghizer Expressway has now transformed the social and economic landscape of Phander Valley, introducing new paradigms associated with infrastructural development theories, some of which are unique to this region. Last but not the least, the impact of the road has been most evidently noticeable in economical revolution in the local economy. While in the past valley was mainly engaged in marginal farming and small trading, there is now a tendency to commercialize activities, depend on the services sector for employment, and more external investment due to road connectivity. New employment sectors in the field of trade, tourism, transports, and constructions have been opened for the residents. This aligns with the findings of Nawaz et al. (2021), who also

stressed the relationship between road infrastructure and employment enhancement in Pakistan's northern area. Conversely, Mohmand et al. (2017) observed that road infrastructure in such regions plays a role in enhancing market access and economic growth.

However, this economic transformation is nothing without the following paradoxes: The local business people have been experiencing stiff competition due to the influx of external investors and traders who, at times, have better financial resources. Some of the issues that were raised included the high cost of land and the issue of being outcompeted by people with deep pockets in terms of accessing strategic business locations for commercial use. These findings support the analysis made by Wolf (2020) that the economic benefits of infrastructure development based on the construction of new facilities only help to deepen the existing divisions as they favor those who are already financially and socially privileged. Currently, many residents of Phander stated that they faced challenges in establishing or growing their businesses, which was mainly due to the lack of policy support or specific funding for SMEs. Hence, it can be concluded that though infrastructure can drive economic development, the benefits do not trickle down to the needy" group if the inclusive policies are not implemented alongside.

This conflict between profit-making and indigenous dislocation is also evident in the effect of the programme on traditional means of employment, especially farming. According to the participants, most of the locals have sublet or sold their lands used for potato farming to contractors or developed them for commercial purposes, particularly along the newly opened road reserve. While these changes have provided positive impacts to the household incomes and enabled individuals to participate in the cash economy, these changes have signified a shift from the past communal and sustainable agricultural systems. High-input agriculture and monoculture in crops like potatoes also have implications for the environment and food insecurity. This matches concerns raised by

Ali et al. (2019) regarding the ecological hazards of intensive commercial farming in the mountains of Pakistan. However, relying on the external markets for food and inputs means that there is a new form of dependency that may be problematic during an economic or climatic shock.

The regularity with which they are practiced has also declined, and social capital in agricultural activities has diminished, a shift that affects the economic and social lives of the people in the valley. Traditional agriculture was integrated into the family and the society where members supported one another in their farming endeavours. This is quite evident in the current society where farming has been commercialized, mechanized and where paid labor is being used instead of family-based labor. The literature depicts the same transition in other rural contexts that are experiencing infrastructural development. Cook and Butz (2021) also argued that such changes also redefine the economy, identity, and communities, especially in areas where most people depended on traditional practices.

Effects in relation to education, healthcare, and mobility also point to the expressway and accessibility/ connectivity; these are some areas that are in tune with the more theoretical conception of socio-spatial integration. They testified of shortened time when moving from one school, hospital, or an administrative office, especially from the remote or hilly regions. It has also enhanced children's ability to attend school locally and not be forced to move to distant relatives or cities. Both genders also claimed that they had better access to healthcare services and markets, signifying a change in mobility and gendered space. These accounts are in line with Siddiqui et al., (2023) and Asher and Novosad (2020), who have cited the importance of infrastructure in improving human capital development in underdeveloped areas.

However, it seems that with this success, new dependencies have been created. The enhanced transport of goods has led to a change in the lifestyle of the community from subsistence to

consumption, one where daily needs are sourced from outside markets. This transition supports Rajović and Bulatović's (2016) opinion that construction of the road infrastructure minimizes the spatial constraints of the supply chain while enhancing structural dependence on the supply chains that are not always stable and pro-fair. In Phander, the people have no option but wait for supplies in their daily needs, which means that any interruption such as a shortage of fuel, increase in the prices, or any other hindrances affecting the transportation can be a major setback. This, though it increases convenience, creates certain issues about the long-term viability, especially where no complementary investment in local production or storage systems are made.

It is especially significant when it comes to gender roles and aspects of cohesion in the community by the construction of the expressway. Some women who used to work domestically and in the agricultural sector are now participating in business activities like embroidery, fashion designing, and petty businesses. The mobility that has been witnessed has helped them in accessing the raw materials and markets even though the establishment of these businesses is still constrained to homes for cultural reasons. The findings support the findings of Cook and Butz (2021) and Cake and Pederson (2024) in their findings that infrastructural development leads to increased women's economic opportunities in conventional societies despite the existing cultural boundaries. However, the involvement rate of female participation is still conditioned by traditional gender roles; whereas men are involved in highly mobile and capital-intensive sectors such as transport or tourism services, women are still confined to work in the private sector due to structural barriers in the society.

There are changes in social, mobility, safety and youth behavior that come with road development. It was noted and encouraged that the youth today are more exposed, confident, and even more ambitious than the previous generation, but, at the same time, there are concerns raised about the

decadence of values, discipline, and even the moral code of ethics especially as it relates to gender. Allegations of begging behaviors among children and concerns about women's safety and regarding their ability to move around in the presence of outsiders. Such an observation is in line with the views of Jan and Hussain (2017), who associated road infrastructural development with cultural globalization and the subsequent loss of cultural diversity. However, there is a great threat that they may eventually be replaced by international traditions, languages, and affiliations if not for the efforts on conserving culture and involving the communities.

The negative consequence associated with the Ghizer Expressway does not stop at the social level but also adds to the environmental issues of development. To be specific, while it can be seen that there are a lot of advantages to having the road, it has also led to quite a significant level of ecological degradation. They observed that construction led to deforestation, changes in the flow of water, polluted water in the streams, and poor quality air caused by construction materials and congestion. These observations are also in agreement with the studies conducted by Shah and Mehmood (2018) and Ali and Askari (2023) which have also highlighted such effects due to the construction of Karakoram Highway. The loss of habitats and the degradation of the soil needs to be examined specifically in relation to the Ghizer Expressway, as the region is in the mountains and its ability to regenerate itself is very low.

Also, poor waste disposal and management, especially considering the growing number of tourists, are key factors that have led to increased visibility of pollution and even health risks. Lack of proper management and control on the disposal of waste and sewage from various businesses have started polluting the land and water, thus affecting the population's standard of living and making agriculture less sustainable. This was evident when women expressed more concern with regard to hygiene and sanitation since contaminated water sources posed a high risk of outbreak of

diseases. These accounts resonate with Marzouk, et al.'s (2017) assertion that most infrastructure projects in the developing regions lack proper consideration of the environmental impacts thus bringing more harm than good in the long-term.

In addition, natural resources that include the shade trees, clean water streams, and pastures have been degraded not only reducing the levels of biodiversity but also the level of resilience among the communities. Most of the original barriers, which used to hold back landslides, floods and climate change, are, however, no longer intact, and the valley is as such exposed to these natural vices that could worsen off if no corrective measures are undertaken. The following aspects of climate change were highlighted by some of the participants: an increase in temperature during the summer and in rainfall that was blamed on deforestation and increased emissions. Although such links may be tendencies, they are in line with research on the role of infrastructural expansion in enhancing local expressions of climate change, particularly in regions of environmental sensitivity.

In this regard, it is possible to conclude that the effects of the Ghizer Expressway are complex and multifaceted. The road has no doubt brought development in Phander Valley through the provision of access to market, education, women, and other services. However, it has also deepened the economic discrepancies, questioned the prevalent culture, and has exhibited significant dangers towards the environment. These findings corroborate the key tenets of the Socio-Spatial Integration Theory, which postulates that infrastructure is never neutral; it repurposes space, reorganizes relationships, inclusion or exclusion depending on how it is handled. In the case of Phander, however, development has promoted access and opportunity but has done so in a manner that has exposed the conflict and contradiction lying at the heart of spatial change.

5.3 Chapter Summary

This chapter has explored how the Ghizer Expressway has affected the Phander Valley to argue that infrastructure development has changed economic activities, land use, social relations, access to public services, and the environment. The outcomes were discussed in terms of the Socio-Spatial Integration Theory in order to demonstrate how the changes to space result in changes to the social structure and opportunities/inequalities. Though the expressway has brought economic opportunities, better connectivity, and empowered women to an extent, many more negative impacts include the destruction of traditional occupations, environmental degradation, and social inequality. The chapter argues that development that is regarded as a positive process is not always so and not for all people. It is influenced by the context of the socio-economic development, availability of resources, and the ability to respond to changes that the community may possess. In conclusion, there is a need to have an improved infrastructure development that integrates economic development with culture and environment.

6 Conclusion and Recommendations

6.1 Conclusion

This study was undertaken to critically examine the multidimensional impacts of the Ghizer Expressway on the Phander Valley, a remote and traditionally agrarian community in Gilgit-Baltistan. The primary motivation behind this research was the lack of localized, community-driven evidence on how road infrastructure projects affect isolated societies beyond their economic metrics. While infrastructure development is commonly associated with national growth, its influence on social cohesion, gender dynamics, cultural preservation, and environmental sustainability in remote contexts remains underexplored.

To address this gap, a qualitative methodology was employed. Grounded in an interpretivist philosophy and an inductive approach, the study utilized semi-structured interviews and focus group discussions to gather narratives from 17 participants across various occupational and demographic backgrounds. Thematic analysis, supported by NVivo, allowed for systematic exploration and organization of emergent themes from translated and transcribed data.

The findings revealed profound and diverse changes across five major thematic areas:

Firstly, the **economic transformation** was evident. The road facilitated the expansion of local businesses, reduced transport costs, and opened opportunities in tourism, trade, and service sectors. Young people, previously dependent on migration for work, now find viable opportunities within the valley. However, participants also noted that commercialization disproportionately benefits external investors and wealthier locals, exacerbating economic inequalities.

Secondly, the **transformation in land use and agriculture** highlighted a shift from subsistence farming to cash crop cultivation and land commercialization. Traditional farming practices have been abandoned by many in favor of leasing land to external contractors, especially for potato cultivation. While this has increased income for some, it has compromised long-term food security, environmental sustainability, and cultural continuity.

Thirdly, **enhanced accessibility and connectivity** due to the expressway improved access to healthcare, education, and mobility, particularly benefiting elderly citizens and students. Residents in previously disconnected areas now experience improved quality of life. However, the influx of traffic and increased cost of living have introduced new challenges.

The fourth theme focused on **social and cultural transformation**. Better transport and communication has increased woman's freedom and employment. Females are now opening shops, becoming tailors, as well as operating beauty parlors and the people are changing their habits. However, there are some issues related to cultural degeneration, social alienation, and the appearance of new threats that can be associated with safety problems due to the arrival of outsiders and the emergence of a beggar population among children due to negligence of tourists.

Last but not the least, the impacts of road development on the environment have been felt as follows. The issues that were mentioned by the participants include deforestation, water source depletion, increased pollution, and ecological degradation. Construction work and improper tourism have led to improper disposal of wastes and degradation of indigenous water resource management systems.

In conclusion, Ghizer Expressway has played a very positive role in the development process, has introduced modernization in the field of economy and has made it easier for the people of Phander Valley to access the services. Unfortunately, these developments have come with some social vices as regards to inequity, cultural shift, environmental pollution, and social disintegration. The results support an approach to infrastructure development which is inclusive of the communities and takes into account the potential rates of growth, the role of the community and its culture.

6.2 Recommendations

The following are the recommendations that based on the study findings:

Supportive policy interventions in the following three domains are required to foster a balanced and culturally sound development in the targeted areas along the Ghizer Expressway: Entrepreneurial development, Culture, and Monitoring.

First of all, the development of local entrepreneurship, especially women and young people, is crucial for the development of the economy. Kabeer (2005), Banerjee et al. (2015) prove that micro-enterprise development and microfinance facilities can also support vulnerable populations' economic and personal independence. The government agencies and NGO should provide training, ease the process of obtaining credit, and provide financial literacy to ensure that the members of the community can take advantage of the new opportunities in tourism and retail. If such interventions are not made, external investors with more resources will continue to dominate the local economy, exerting more pressure to the already existing inequalities.

Secondly, there is the concern of culture and language barrier, which is more so because modernization is likely to affect societies such as that of Phander Valley and erode their traditional values. Appropriate cultural heritage centres, documentation archives, and school-based programs can help pass the knowledge from one generation to another (Logan, 2016). Engaging youths in cultural clubs and oral history programmes also helps them maintain cultural identity and foster social cohesiveness that is very important when society is going through a transformation.

It is recommended that monitoring and evaluation (M&E) frameworks that involve the community will facilitate the infrastructure development to reflect the needs of the people. The use of PM&E increases people's participation and ownership in programs, increases accountability, as well as promotes program sustainability. These systems make it possible to monitor the road-related social-economic and environmental impacts on a regular basis for policy making and resource mobilization.

Altogether, the above-said strategies present a systemic approach to managing infrastructural change – inclusive of people, diverse, and culturally sensitive.

6.3 Implications of the Study

It, therefore, has relevant implications for both scholarly and policy fields. To development researchers, it underscores the usefulness of the qualitative methodologies that involve the communities under study in explaining the intricacies of infrastructure-driven development in the disadvantaged areas. It adds to the body of knowledge that opposes the notion that road construction invariably leads to positive and uniform effects on the concerned areas and stresses that the effects are cross-sectional and vary according to the demographics and occupation of the affected population.

To policymakers, such findings are valuable to understand the side effects of modernization in remote areas. The conclusions show that, though infrastructure development opens up the opportunities of economic growth and improves the transportation, it puts pressure on social fabric, fosters cultural loss, and negatively affects the environment. The findings are important to institutions such as National Highway Authority, tourism departments, and regional planning agencies so that they engage in integrated, inclusive, and sensitive planning. Finally, for development practitioners and NGOs working in Gilgit-Baltistan and similar geographies, this study provides a framework for designing socially inclusive, environmentally sustainable, and culturally respectful infrastructure interventions. It advocates for empowering local voices in all stages of development, from planning to implementation and evaluation.

6.4 Suggestions for Future Research

Future research should adopt longitudinal designs to trace the evolving impacts of infrastructure development over time, particularly concerning migration trends and intergenerational cultural shifts. Additionally, mixed-method approaches combining qualitative interviews with economic and environmental indicators can offer more comprehensive insights. Comparative studies across multiple valleys in Gilgit-Baltistan could help generalize findings and inform regional development strategies. Exploring the perspectives of marginalized groups—such as landless workers, seasonal migrants, and ethnic minorities—would deepen understanding of exclusion and inequality. Lastly, studies assessing the effectiveness of policy interventions post-road construction could inform adaptive infrastructure governance.

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