

Generating Unity and Establishing Connectivity Through Road Construction by Nepali Army

✉ Pranav Yadav *
Ruby Adhikari**

Abstract

In the diverse topography of Nepal, the Nepali Army has emerged as a beacon of connectivity through its strategic road construction projects. This abstract delves into the profound impact of these endeavors on unifying communities and enhancing connectivity across the nation. The Nepali Army, cognizant of the pivotal role infrastructure plays in connecting regions, has undertaken ambitious road construction projects. These initiatives transcend mere physical connectivity, serving as bridges that link disparate communities, fostering unity, and promoting economic growth. By navigating challenging terrains and overcoming logistical hurdles, the Nepali Army has woven a network of roads that traverse mountains, valleys, and remote areas, bringing isolated communities into the fold of national development. The construction of roads by the Nepali Army stands as a testament to their commitment to the nation's progress. These roads not only facilitate the movement of goods and services but also serve as conduits for cultural exchange and social integration. They act as lifelines, enabling access to essential services like healthcare and education previously inaccessible to remote populations. Moreover, these roads stimulate economic activities, unlocking the potential of remote areas by connecting them to markets and opportunities, thereby uplifting livelihoods and reducing disparities. Furthermore, the Nepali Army's road construction projects have reinforced national solidarity by promoting inclusivity and interconnectivity among diverse ethnicities and geographies. The collaborative efforts between the army and local communities have not only expedited the construction process but have also cultivated a sense of ownership and unity among the populace. So, the Nepali Army's endeavors in road construction transcend infrastructure development; they epitomize a unifying force that bridges geographical gaps, fosters socio-economic development, and nurtures a sense of solidarity among the diverse tapestry of Nepal. These roads pave the way towards a more connected, prosperous, and unified nation, embodying the ethos of progress through connectivity.

Keywords: unity, connectivity, road construction, Nepali Army, inclusivity, social integration.

Introduction

The Nepali Army (NA) is among the most important organ of the government because of the various roles it plays in protecting the nation's territory and maintaining the integrity for its soldiers. The Nepali Army's mandate is to protect the nation's independence, sovereignty, territorial integrity, and unity, according to Article 267 of the 2015 Constitution of Nepal. Furthermore, article 267(4) states that the Nepali Army may be mobilized by the government for projects including development and disaster relief as permitted by federal law (GoN-Constitution, 2015)".

To underline the Nepali Army's role, it is capable and

powerful enough to complete tasks in accordance with directives from the government. While NA is prepared and oriented to carry out its traditional responsibilities, it is also prepared and oriented to carry out a wide range of roles that lie outside the purview of its main responsibilities, covering both defense and non-combat operations.

Among the multiple facets of the NA's secondary roles, its role as a key contributor in national development has garnered much praise and attention

* Technical Major, Civil Engineer at Western Division Civil Engineering Services, Nepali Army. <pranav2076yadav@gmail.com>

** Technical Major, Geomatics Engineer at Geographical Engineering Division, Nepali Army. <adhikariruby1234@gmail.com>

throughout the years. The NA has been mobilizing its engineering resources for developmental works across the nation as well as inside the Army. Even though most of the undertaken projects include development of some form of physical infrastructure, their scope varies in scale, difficulty and nature of the works. The term Military Infrastructure represents all of the assets required to run the organization. The completion of the task and the operational activities requirements is the most essential part of the military infrastructure.

The Army has played a significant role in constructing numerous roads and bridges that have allowed access to isolated areas through difficult mountainous terrain. The Army's institutional drive, integrity, and selfless sacrifices have allowed national planners to maximize the benefits from scarce resources. The development of road networks in isolated and difficult-to-reach places has been greatly aided by the Nepali Army. Some of the roads built by the Nepali Army are listed below.

The old Kantipath project, which built a 105-kilometer road from Kathmandu to the Indian border, had the Nepali Army as its main partner. It also built the road from Kharipati to Nagarkot. Nagarkot is now one of Nepal's most popular tourist destinations. The Trishuli-Somdang road passes through 105 kilometers of extremely challenging terrain to the northwest of Kathmandu. In 1990, this road was finished. The 88-kilometer Katari-Okhaldhunga Road allowed the people living in the Everest region to have access to basic necessities at their doorstep. In 2005, this track was finished. Similarly, the Hile-Leghuwaghat road, spanning 28 km, was also built. The 86-kilometer Salyan-Musikot road passes through some of Nepal's most isolated and impoverished areas. The construction of new roads would significantly spur the area's social and economic growth. When it was finished in 2005, it was transferred to the local authorities.

One of the greatest development feats in modern Nepal is the 232-kilometer Surkhet-Jumla road, which was constructed primarily by the Nepali Army. This project includes a number of side projects in addition to construction of the road in order to improve the rural society that the road passes through. This project includes micro hydroelectric projects,

rehabilitating irrigation channels, and providing vocational training for underprivileged people. The 91-kilometer Baglung, Beni, and Jomsong road passes through some of the most picturesque land and has the potential to aid in the growth of the area by facilitating travel through an area abundant in agricultural goods. The 45-kilometer Drabya Shah Marga was constructed with the goal of pursuing both development and security at the same time in order to counter insurgency. This programme also included the construction of the 37 km Satdobato - Niwel - Balua road, the 39 km Gorkha - Mankamana road, and the 45 km Gorkha - Aarughat - Orkhet road. The mountainous Besi Sahar-Chaame road stretches 65 kilometres. It travels the renowned "Annapurna Circuit" alongside the Marsyangdi River. Service support is available on this route to one of Nepal's most well-liked tourist destinations. 107 km Chhinchu - Jajarkot road, the 112 km Jajarkot - Dolpa road, the 31 km Devsthal - Chourjahari road, the 145 km Musikot - Burtibang road, and the 91 km Nagma - Gamgadhi road, which will connect some of Nepal's most isolated and underdeveloped areas. Similarly, work is underway to establish the 70.977 km Nijgadh-Kathmandu fast track, which is anticipated to play a significant role in establishing a link between the Terai and the capital city of Kathmandu (Nepali Army, 2080 BS).

Numerous nations' economic development histories have demonstrated that easily accessible roads and convenient transportation are important markers of a nation's overall prosperity and development. This study aims to identify the geo-strategic prospects of the Road project by exploring the dimension of national unity and international cooperation. Based on the various literature review, it suggests the government to consider the opportunity beyond trade transport and emphasizes on the scope of people-to-people relations. The research centers on two major arguments: First, the construction of a road network will mitigate the regional gap within the country. Second, it will open up new opportunities to materialize the scope for trilateralism through trade between the three countries Nepal, China and India.

Statement of Problem

Basically, transport network is considered as a base for national unity and sovereignty. As Nepal

is a small nation with limited financial and other resources along with unstable political situation, it is very challenging to the country for infrastructural development of Nepali Army due to the economic condition of our country. Effective and efficient transport network or connectivity is not only the key to unite a country politically, socially and economically but also a base for a dynamic and prosperous country. Comfortable transportation connectivity system is the base for uniting a country politically, socially and economically. The current trend of regionalism in Nepal is also the byproduct of the lack of connectivity. The better the connectivity, the stronger the national unity and sovereignty is. So, the research will focus on the prospects of road construction by Nepali Army in generating unity and establishing connectivity, present status of road construction in the Nepali Army and, challenges for the road construction in Nepali Army.

Significance of the Study

Nepali Army (NA) is currently undergoing a modernization process that involves updating all Army equipment, including weapons, ammunition, training materials, buildings, and infrastructure. The first step in modernizing the army is to upgrade and modernize its physical infrastructure. The Army can modernize itself because of the space and ground provided by physical infrastructures. Therefore, research into modernizing and improving the Army's physical infrastructure is extremely important. It assists in deciding on the best course of action to take, the protocol to follow, and how to handle the financial burden.

The tracks/roads "infrastructures of national pride" so far constructed by NA bear a strategic significance and help to append public trust towards the government. As such, the army has targeted to build the Expressway as an "exemplary state of the art of civil construction" in South Asia, and ultimately contribute to the socio-economic development of the country.

Literature Review

While maintaining standards of civil-military relations and professionalism, the Nepali Army

has been more actively involved in a variety of operations, including disaster response, United Nations peacekeeping missions, nature conservation, humanitarian aid, and development both domestically and internationally (Nepali Army, 2080 BS). The Nepali Army has gained notoriety and name wherever it has participated in infrastructure development projects (Nepali Army, 2080 BS). The government of Nepal has currently awarded the Nepali Army four national pride projects, including the National Defense University and the Kathmandu-Terai/Madhesh Fast Track Road Project (KTFT Road Project, 2021). Good governance and development require a stable atmosphere of peace, order, and security (NPC, 2020). With the intention of enabling all security agencies to effectively handle a wide range of security threats by enhancing their professionalism, modernity, skill, and resource and means-equippedness. The road construction was incorporated into the National Planning Commission's plan (NPC, 2020)

Based on the extensive infrastructure study conducted at the intersection of political economics and science and technology studies, road construction has been interpreted as an important site of socio-political practise. The argument here is based on the necessity of looking beyond the conventional viewpoint that views roads as common place of physical infrastructures that permeate daily existence and are accepted as standard landscape elements. But we must look beyond the engineering of the highway and begin focusing on its geopolitics in order to address the invisible socio-political infrastructures that are co-produced by physical infrastructure. Stated differently, roads should be understood not only as a feature of the landscape but also as a social structure and a political system (Wilson, 2004). Since transportation is a significant human activity with a significant spatial component, it has emerged as a crucial subject for geographers. Furthermore, it plays a noteworthy role in determining the geographical variation of numerous other social and economic activities (White & Senior, 1983).

In order to view highways as "stretched-out spaces of social interactions," it is especially beneficial to start with geographer Fiona Wilson's (2004) concept of "regimes of territorialization," which she developed via research on mountain roads in Peru. This contrasts

with conventional interpretations, which seek to identify highways as points of penetration (Wilson, 2004). By utilising some important conceptual contributions from the global academic literature, road construction in Nepal is supported by some obvious socio-political infrastructures. According to academics, the discourse on spatial relations starts with the Rana era (1846–1951), when the first motorable roads were built. From there, it explores the relationships between road construction and state formation, geopolitical dynamics, and place-based social cohesion (Rankin et al., 2017).

The extensive geopolitical reach of the road has long been a point of interest for state actors. Roads have been a top priority for attaining governmental objectives since Nepal established a sophisticated bureaucratic state structure. These objectives pertain to the country's people and territory, as well as its relations with neighbouring countries and those with geopolitical interests in the region (Gaige, 1975). If we examine Nepal's road building history from the theoretical perspective of the territorialization regime, we can see how closely King Mahendra's strategic agenda—which aims to achieve national unity and balanced international relations—relates to the development of Nepal's highways. We can examine three massive projects to support our arguments with specific data: the Tribhuvan Highway (1955–1956), which connects Kathmandu to Raxaul on the Indian border via Birganj; and the Araniko Highway (1961–1968), which connects Kathmandu to Kodari on the China border. Ultimately, the most effective spatial strategy to realise the goal of national unity was the construction of the Mahendra East-West Highway (1961–1982), which crossed the Chure foothills from Mechinagar in the east to Mahendranagar in the west (Regmi, 1988).

It is important to keep in mind that prior to the Mahendra East-West Highway's construction, it was impossible for anyone to travel from Nepal's east to its west without crossing the Indian border. When examining this situation, some academics have gone so far as to assert that while Nepal was unified under King Prithvi Narayan Shah in the latter part of the 18th century, full-fledged national integration and unification only occurred

in 1982 following the completion of the east-west highway (Rankin et al., 2017). In the same way, understanding the past of the cultural-political and geopolitical strategies used to pursue territorialized integration through the east-west highway is the best way to effectively use roads for promoting national unity. A country's total integration means that, within a certain bound, all impediments—political, cultural, social, religious, and economic—must be continuously reduced. According to Sattar, regional integration is greatly aided by the national network of highways. However, until every corner of the nation is methodically connected, this is not possible. The fundamental requirement for fair development is cooperation and support from the relatively wealthier segments of a community to the less fortunate segments. The extensive resources found in these places are not accessible to remote border regions with inadequate connectivity to the rest of the nation (Sattar, 2011). Thus, minimising regional disparities requires physical integration and connectivity with the rest of Nepal.

This section examines the body of research on the topic of infrastructure development as well as the claims put forth in earlier studies about the significance of the road network for both domestic and global politics. The investigation will give rise to justifications and comprehension of the significance of this study. Prior research has examined closely related topics, but it did so by concentrating on the economic potential of road development and its advantages for both domestic and international trade. By examining the theoretical discourse and practical implications of the roads built by NA as a milestone of new national unity via people-to-people relations, this study has attempted to close the research gap.

Research Methodology

This research blends qualitative and quantitative approaches, primarily using an explanatory method and relying on library research involving document analysis. It extensively examines various secondary sources such as books, journals, newspapers, reports, and more, with a deliberate selection focused on the geopolitical significance of road infrastructure

concerning national unity and international relations. The analysis incorporates studies on enhanced mobility, people-to-people relations, and national integrity, aligning themes from the literature with the main argument. Both primary and secondary methods were utilized for data collection, ensuring a comprehensive approach. Due to the study's focus on military infrastructure and construction practice in the Nepali Army, maintaining data confidentiality is crucial.

Sources of Data Collection

There are two modes of data collection in this research. Primary source of data collection consists questionnaire surveys and Secondary source as website and published documents.

Primary Sources

Questionnaire Development: The purpose of the questionnaire was to aid in comprehension and involvement. To gauge respondents' perceptions of each variable, a Likert scale with 1 denoting "strongly disagree" and 5 denoting "strongly agree" was employed. The six variables that were chosen to be related to the social, economic, and safety measures in the construction industry were the main focus of the question.

Data Collection: The participants were provided with the questionnaire and allowed ample time to finish it. Throughout the data collection process, the

researchers were accessible to answer any questions or provide clarifications. About 100 numbers made up our sample size. To collect the samples, a convenience sampling strategy was used. Only participants in the study who felt at ease answering questionnaires and who comprehended the goal of the investigation were included.

Data Analysis: The data from the questionnaire was analyzed using descriptive statistics, and Microsoft Excel along with SPSS was used as the analysis tool. To determine the participants' overall perception of each variable, the Likert scale responses were tallied and averaged.

Ethical Consideration: Strict adherence to ethical guidelines was maintained throughout the study, guaranteeing participant anonymity and informed consent confidentiality. All applicable rules and guidelines pertaining to research ethics were followed when conducting the study

Secondary Sources

Secondary source of data collection consists of Nepali Army Jangi Adda, offices, like as for the roadworks data collection first-hand information obtained through Directorate of Development and Construction (DDC) Office, Jangi Adda and for National Pride project Fast Track Road Project were contacted. The name and Locations of the road project currently undertaken by Nepali Army has been presented in Table 1.

Table 1 Road project currently ongoing under Nepali Army

SN	Name of Road Project	Location	Total Length (km)	Length in km completed till 2081 Baisakh
1	Khandbari-Kimanthanka Road Project	Sankhuwasabha, Bhotkhola Gaunpalika	10.51	8.10
2	Karnali Corridor (Khulalu-Laifu-Sarisalla Sector) & (salisalla-simikot sector) Road Project	Humla-Kalikot-Bajura	22.05	15.30
3	Benighat- Arughat- Larkebhanjyang Road Project	Chum Nubri Gaunpalika, Dharche Gaunpalika, Gorkha	92	37.50
4	Darchula Tinkar (Kothedhar Tinkar) Road Project	Byas Gaunpalika, Darchula	79	12.72
5	Kathmandu-Terai/Madhesh Fast Track (Expressway) Road Project	Lalitpur- Kathmandu- Makwanpur- Bara	70.977	Ongoing

(Source: DDC,2081)

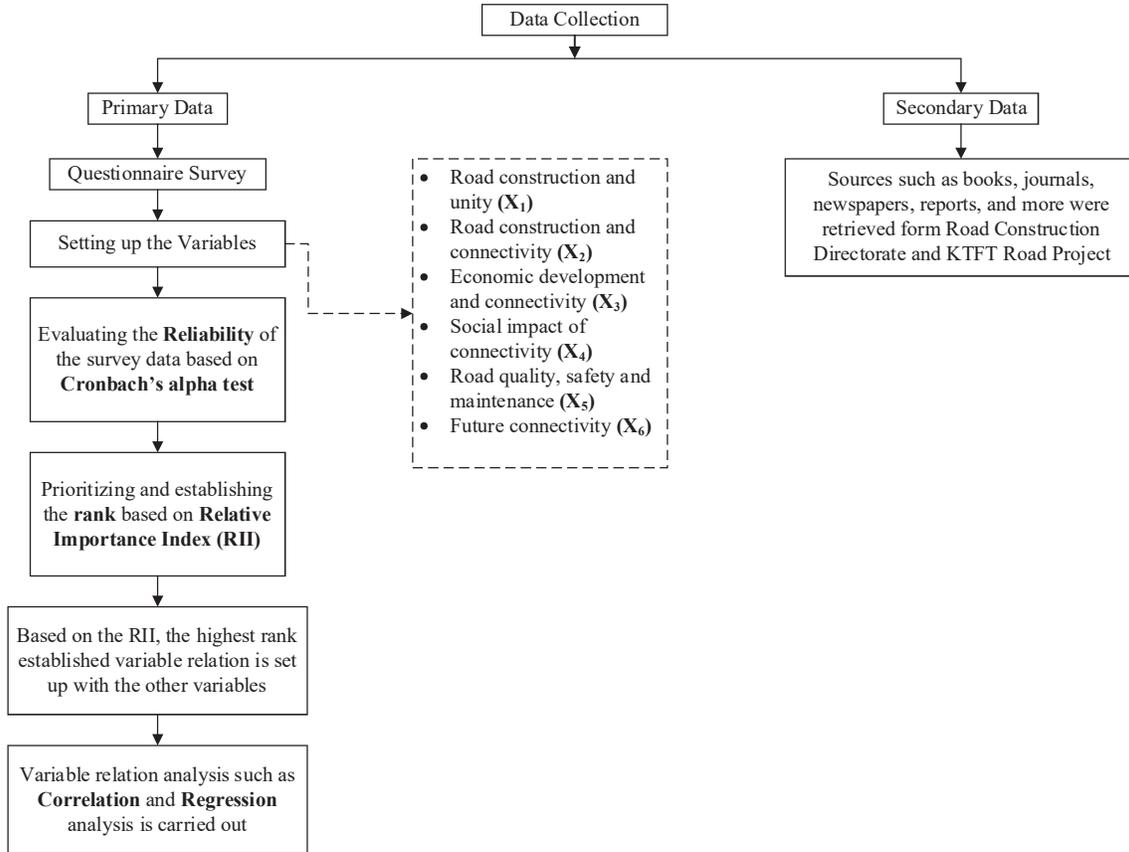


Figure 1: Conceptual framework for data analysis

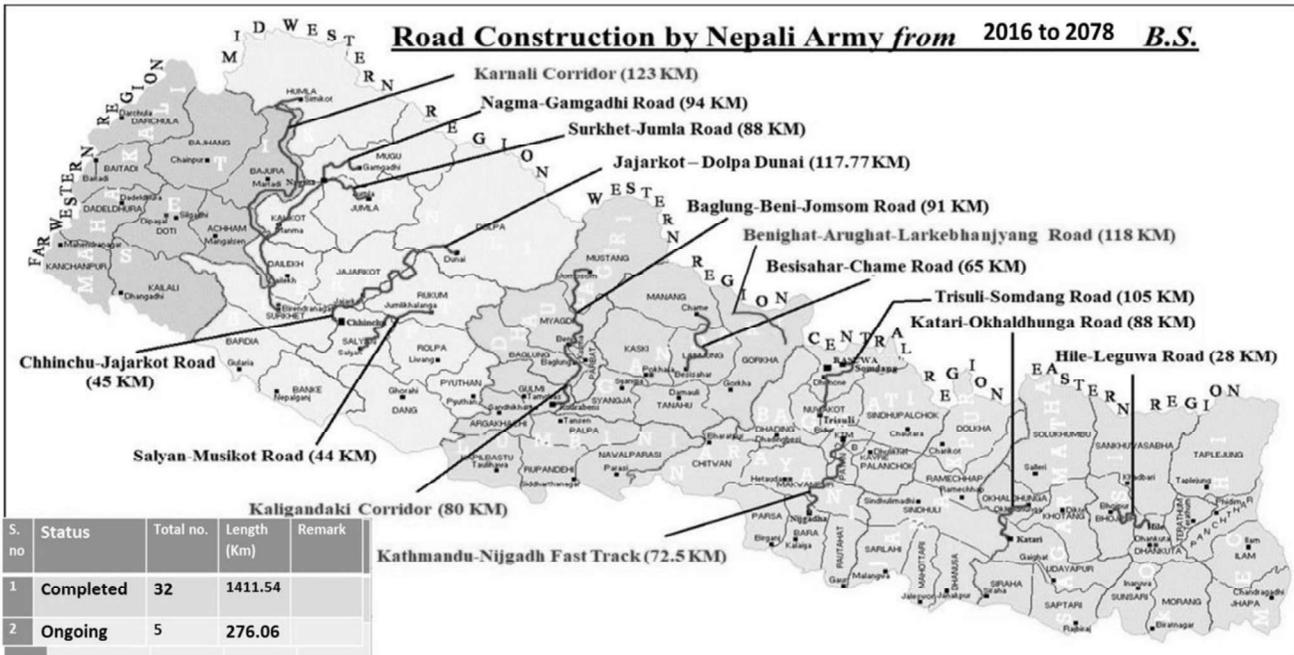


Figure 2: Road Constructed by Nepali Army Directorate of Development and Construction

(Source: DDC, 2081)

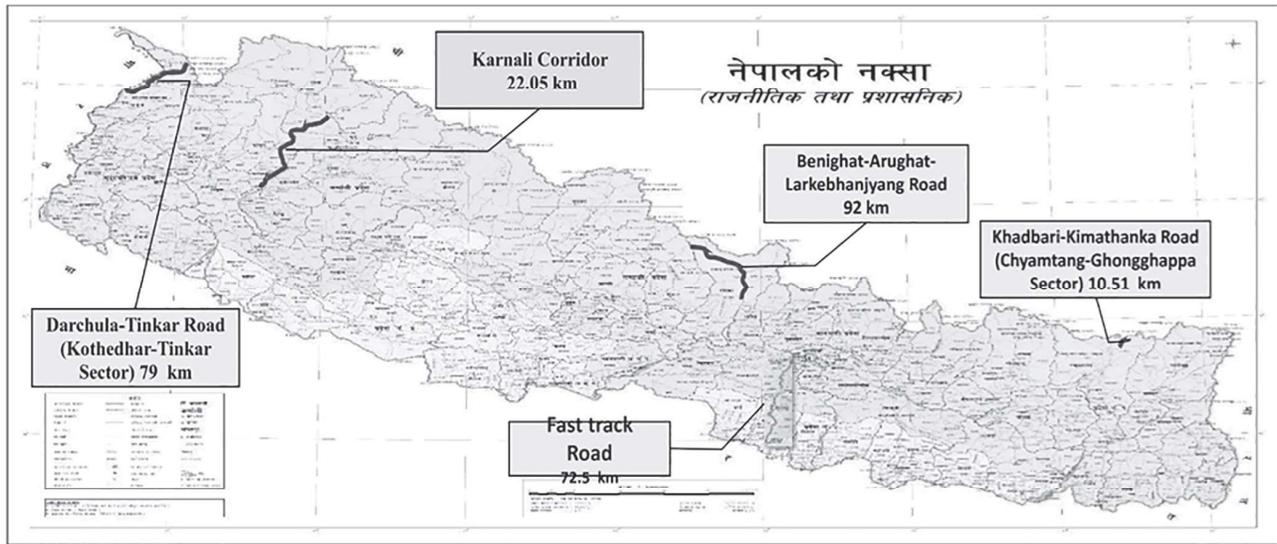


Figure 3: Road Constructed by Nepali Army Directorate of Development and Construction

(Source: DDC, 2081)

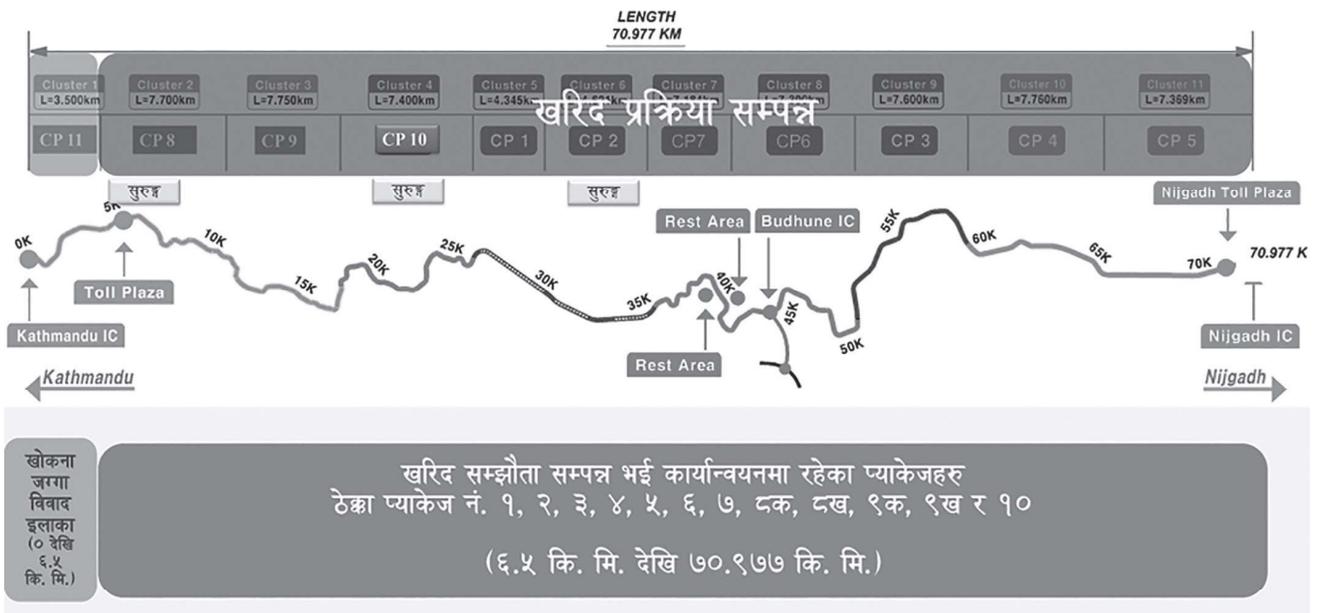


Figure 4: KTFT Road Project alignment showing different packages undergone for construction

(Source: KTFT Road Project, 2081)

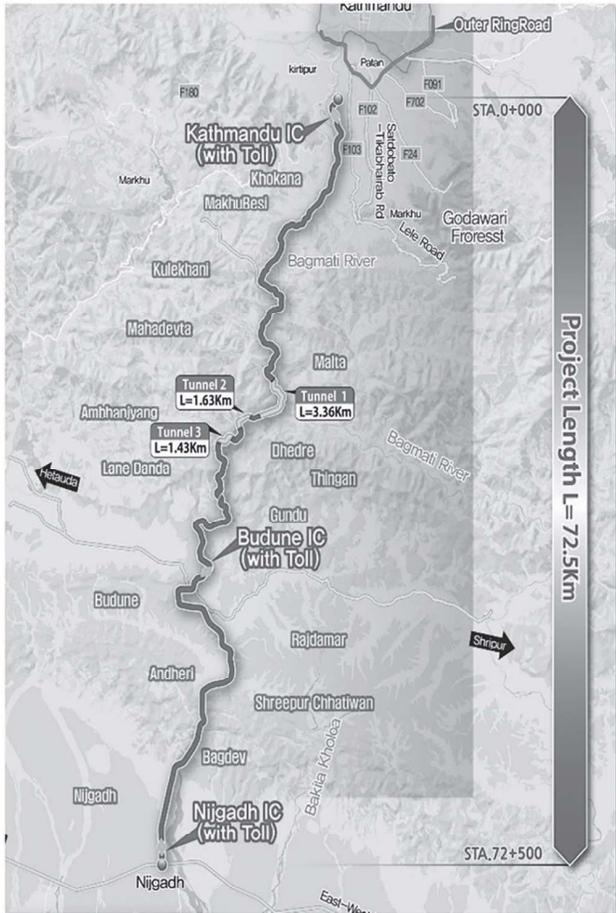


Figure 5: KTFT Road Alignment
(Source: KTFT Road Project, 2081)

Data Analysis and Interpretation

Validity and Reliability of Data: A reliability test was conducted on the set of questionnaires created and utilized for this study. The questionnaire was

put through the Cronbach's alpha test in order to gauge its internal consistency. The Cronbach's alpha coefficient, created by Lee Cronbach in 1951, assesses the reliability of survey questions. The formula for Cronbach's alpha is Alpha

$$\alpha = \left(\frac{k}{k-1}\right) \left(\frac{s_y^2 - \sum s_i^2}{s_y^2}\right)$$

where, K = number of items, s_y^2 = Average Covariance between item pairs, s_i^2 = Average Variance. The alpha value obtained for this study is shown below.

Table 2: Cronbach alpha value

Cronbach's Alpha	No. of Items
0.8	6

Table 3: Cronbach's alpha level of Reliability

Alpha Score	Level of Reliability
0-0.2	Less Reliable
>0.20-0.40	Rather Reliable
>0.40-0.60	Quite Reliable
>0.60-0.80	Reliable
>0.80-1.0	Very Reliable

Source: Hair, 2010

Since the range is regarded as reliable, the questionnaire's reliability is also demonstrated. Bivariate Correlations analysis was used to validate the questions. Each variable's significance value is less than 0.05, indicating the validity and significance of the questionnaire. Here, the designation of the respondent is shown in the Figure 6.

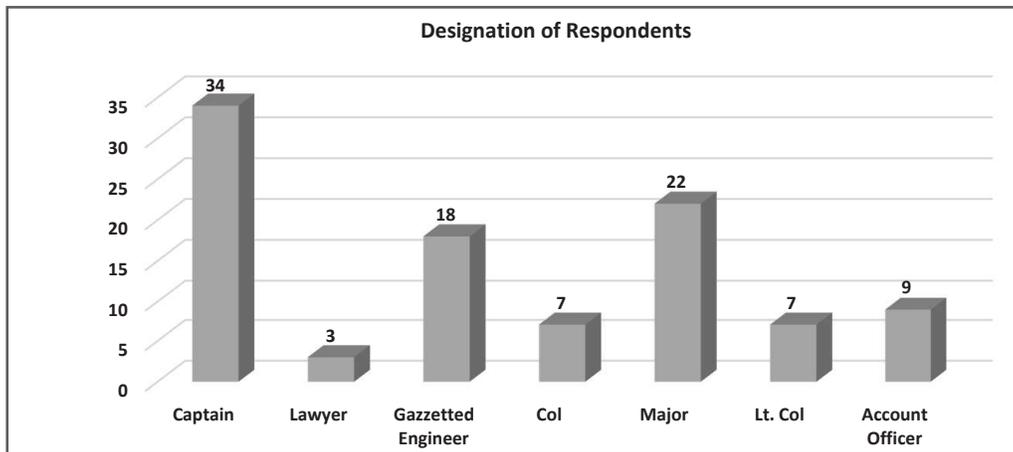


Figure 6: Designation of the Respondents

The participation of both male and female were seen. The male and female both in the military and non-military field have well anticipated the questionnaire which is as shown in the Figure 7.

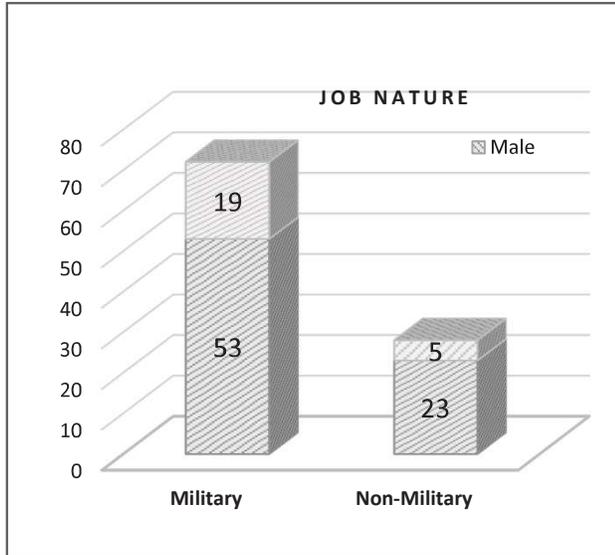


Figure 7: Job nature of the respondents

The age categories of the respondents vary from greater than 20 to above 50. The age factor also becomes significant as it renders the expertise of the respondents based on the understanding and experience and also, a level of maturity gained is considered. So, the age categories of the various respondents are shown in the Figure 8.

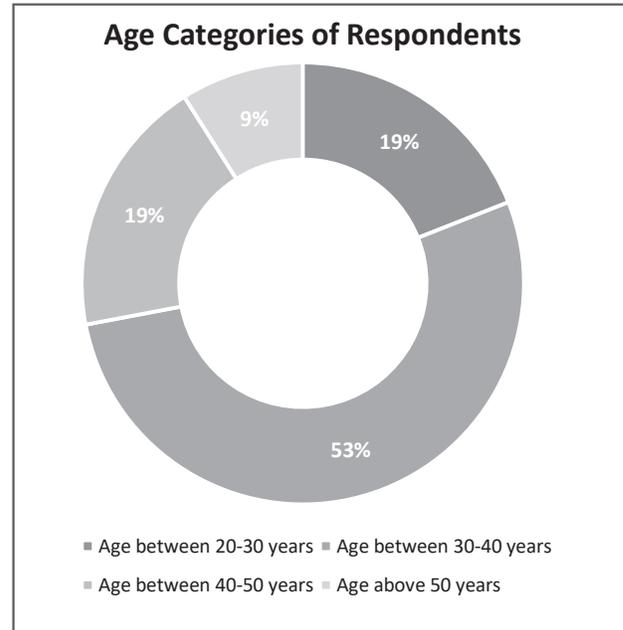


Figure 8: Age categories of the respondents

The Relative Importance Index (RII) was utilized, which is a suitable tool for prioritizing indicators rated on Likert-type scales and allows for the identification of the majority of the important criteria based on participant replies. It determines a factor's mean, which gives respondents' perceptions of its weight. RII equals 1 for the factor with the highest weight. So, in our case The RII calculated is shown in the table below.

Table 4: RII calculation of the variables

S.N.	Statement on subject	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total	RII	Rank
1.	Road Construction and Unity	610	852	123	20	14	1619	0.810	5
2.	Road Construction and Connectivity	990	784	18	0	0	1792	0.896	1
3.	Economic Development Connectivity	590	984	93	10	0	1677	0.839	3
4.	Social Impact of Connectivity	360	1180	93	4	0	1637	0.819	4
5.	Road Quality, Safety and Maintenance	310	696	267	112	19	1404	0.702	6
6.	Future Connectivity	645	1000	42	14	0	1701	0.821	2

As shown in the above table, the RII is maximum for the variable “Road Construction and Connectivity” which is also ranked 1. Similarly, RII is least for “Future Connectivity” and consequently has the least rank. The variable with the highest rank is given the maximum priority as per the RII and

the relation of this variable is established with the other variables. So, based on the above output the correlation and regression analysis were further carried out. The number of respondents in each of the Likert’s scale is presented in the Figure 9 and Figure 10 respectively.

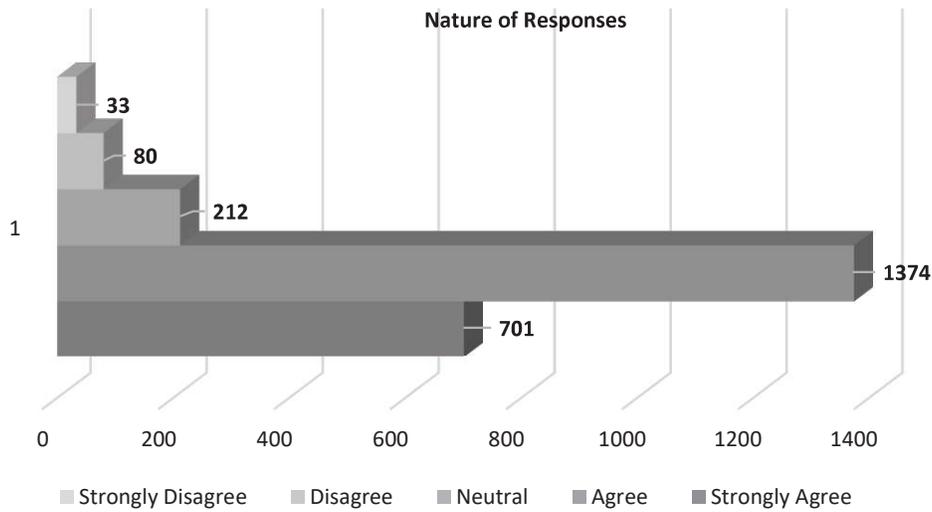


Figure 9: Nature of responses by the respondents

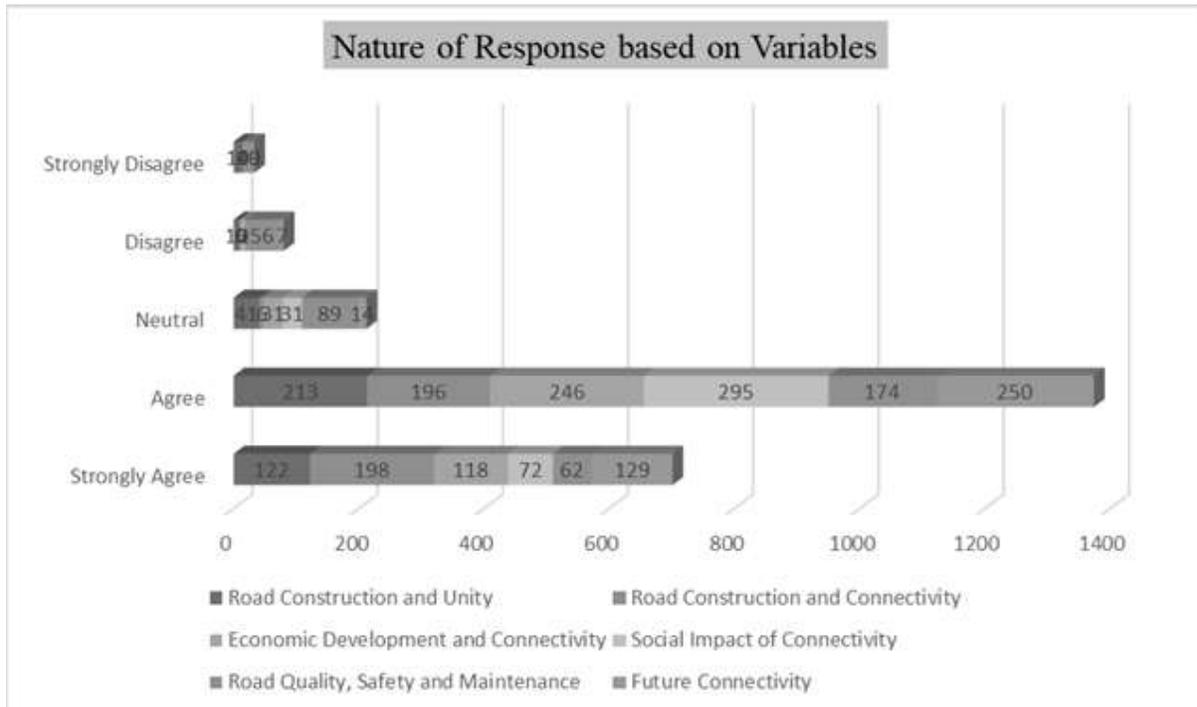


Figure 10: Nature of responses based on variables

Further, a correlation analysis was performed among the different variables. The correlation value was very close to 1 and that signifies that the two variables are highly correlated. The increase in the parametric of one variable results in the increase of other and vice versa. The correlation table is as shown in the Table 5.

Table 5: Correlation value among the variables

		Road Construction and Unity	Road Construction and Connectivity	Economic Development and Connectivity	Social Impact of Connectivity	Road Quality, Safety and Maintenance	Future Connectivity
		X1	X2	X3	X4	X5	X6
Road Construction and Unity	X1	1	0.919	0.997	0.951	0.845	0.994
Road Construction and Connectivity	X2	0.919	1	0.893	0.762	0.600	0.916
Economic Development and Connectivity	X3	0.997	0.893	1	0.971	0.873	0.996
Social Impact of Connectivity	X4	0.951	0.762	0.97	1	0.927	0.956
Road Quality, Safety and Maintenance	X5	0.845	0.600	0.87	0.93	1	0.834
Future Connectivity	X6	0.994	0.916	0.996	0.956	0.834	1

The least correlation value is 0.60 which is fair enough to be categorized into well correlated status. The highest correlation value of 0.997 is observed in between Road construction and unity vs Economic development and connectivity as road construction acts as a medium to unite the people of different topography hence creating an opportunity of economic development by various means. The correlation between the various variable is shown in the figure below.

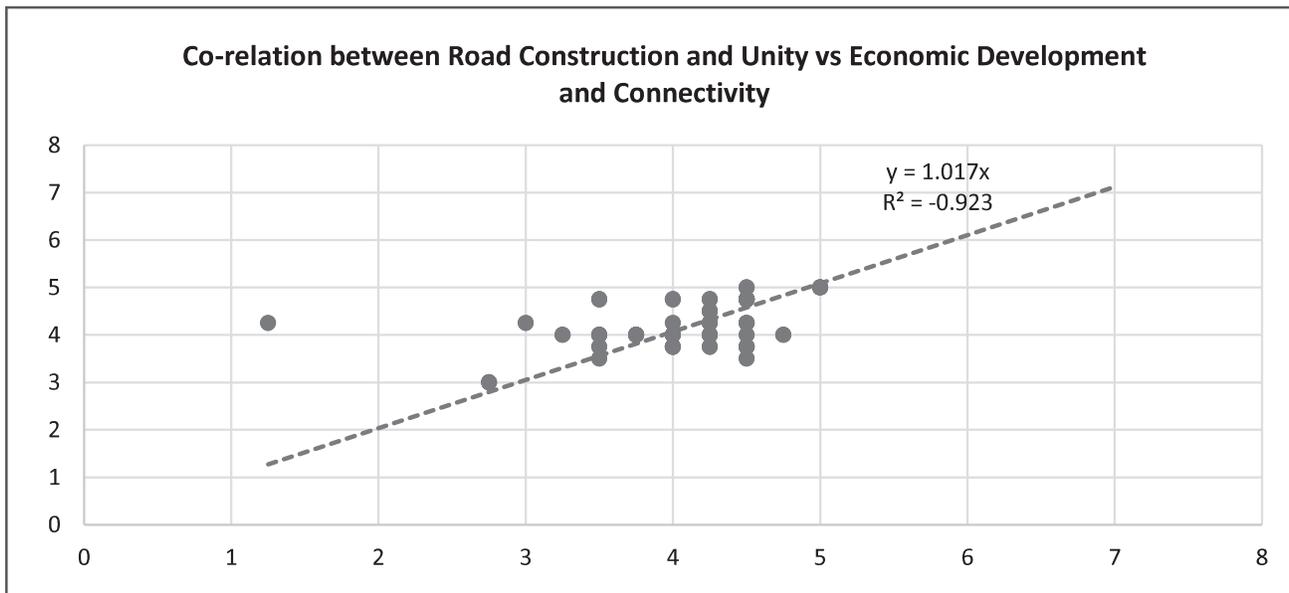


Figure 11: Correlation between road construction and unity vs Economic development and connectivity

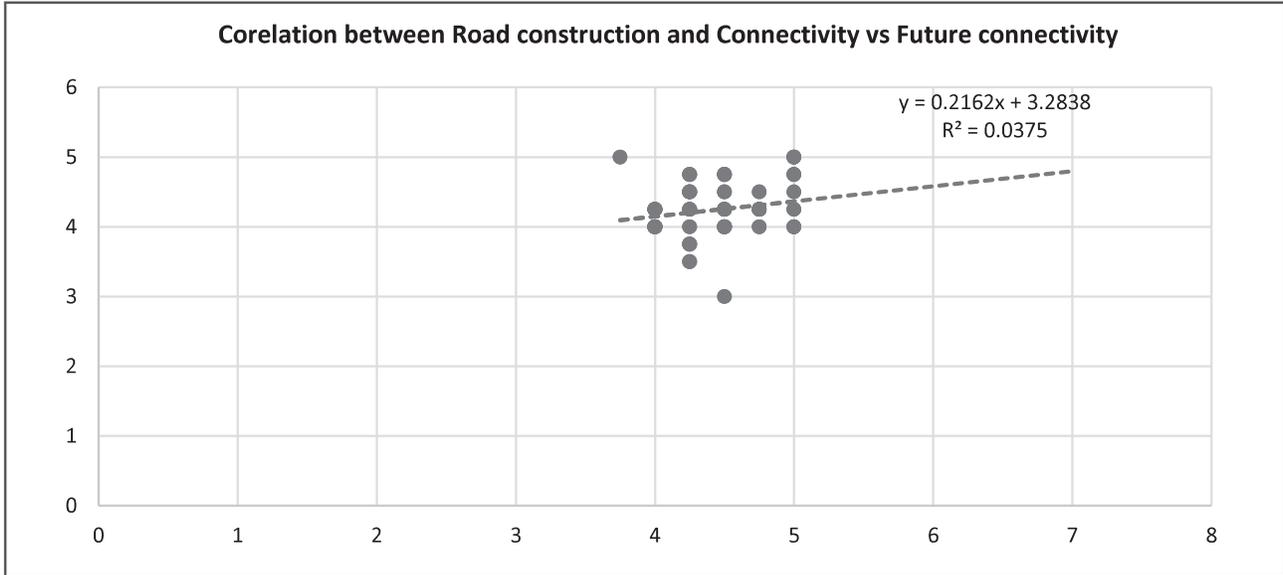


Figure 12: Correlation between Road construction and unity vs Road Construction and connectivity

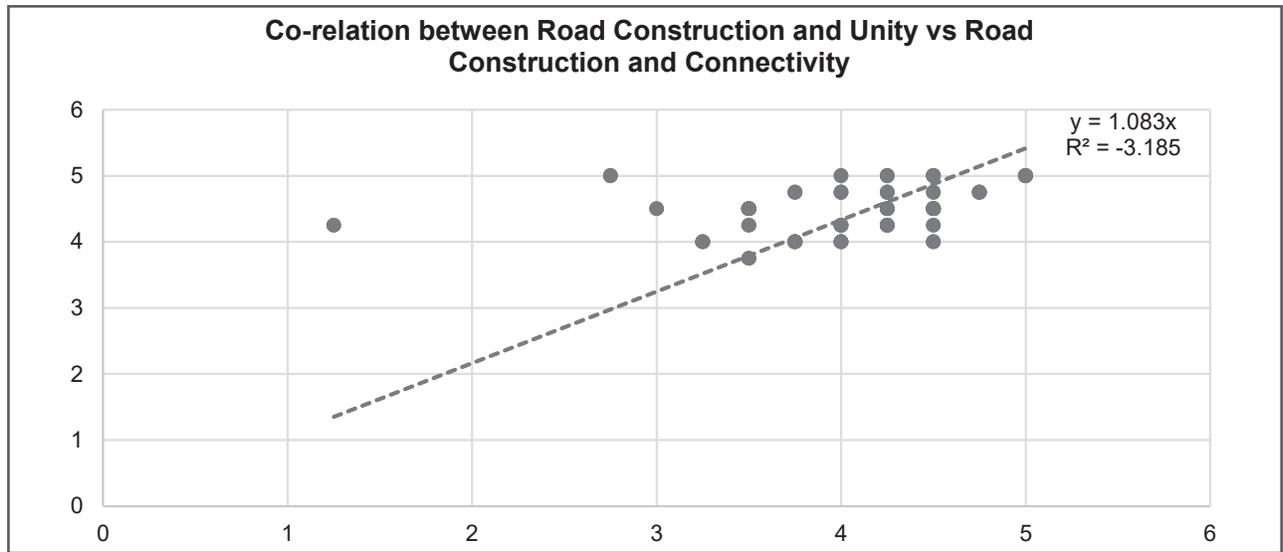


Figure 13: Correlation between Road construction and connectivity vs Future connectivity

Regression analysis was performed at the end. The performance of the variable (X2) was determined based on the other variables. The reason for choosing this particular variable is as it has the highest weightage calculated in the RII and is ranked 1. So, the output of the regression is shown in the Table 6.

Table 6: ANOVA Table

	df	SS	MS	F	Significance F
Regression	5	1.843456956	0.3686914	3.557649	0.005446564
Residual	95	9.741543044	0.1036334		
Total	100	11.585			

The significance value F is 0.00544 which is less than 0.05 which shows that the analysis of variance is well significant. Similarly, the regression coefficient is calculated in the Table 7.

Also, the final relation of the variable (X_2) with respect to the other variables is shown by the following equation:

$$Y(X_2) = 3.03 + 0.08 X_1 + 0.21 X_3 + (-)0.03 X_4 + 0.03 X_5 + 0.06 X_6$$

Validity and Reliability of Data (Regression Coefficients)

Residual normality: Linear regression assumes normality for residual errors. Shapiro Wilk p-value equals 0.0002393. It is assumed that the data is not normally distributed.

Homoscedasticity: homogeneity of variance: The White test p-value equals 0.255888 ($F=1.382349$). It is assumed that the variance is homogeneous.

Multicollinearity: intercorrelations among the predictors: There is no multicollinearity concern as all the VIF values are smaller than 2.5

Priori power: of the entire model: The priori power should be calculated before running the regression. The power to test the entire model is strong: 0.8487.

The power to prove that each predictor is significant is always lower than the power to test the entire model.

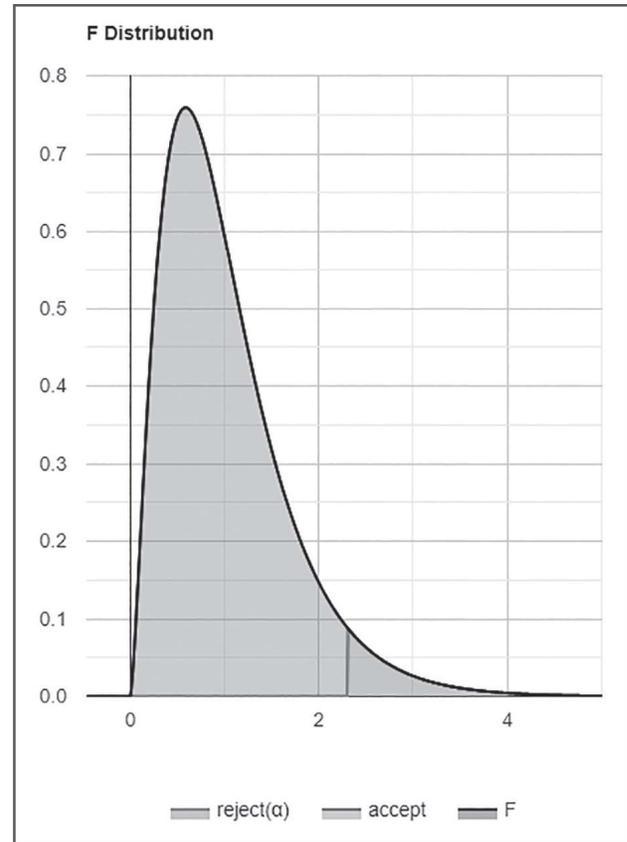


Figure 14: F Distribution

Table 7: Regression coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.03	0.47	6.47	0.00	2.10	3.96	2.10	3.96
X Variable 1	0.08	0.05	1.50	0.14	-0.03	0.19	-0.03	0.19
X Variable 2	0.21	0.10	2.12	0.04	0.01	0.41	0.01	0.41
X Variable 3	-0.03	0.11	-0.27	0.79	-0.25	0.19	-0.25	0.19
X Variable 4	0.03	0.06	0.47	0.64	-0.09	0.15	-0.09	0.15
X Variable 5	0.06	0.09	0.63	0.53	-0.12	0.24	-0.12	0.24

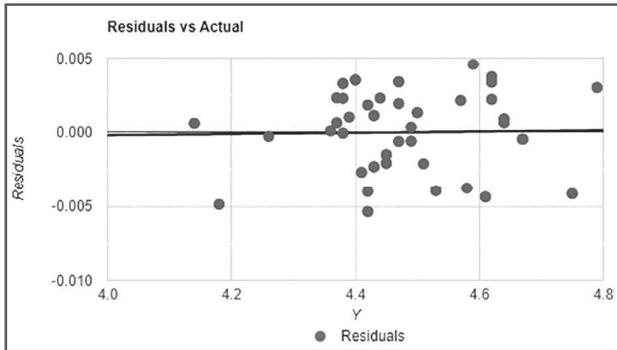


Figure 15: Residual vs Actual

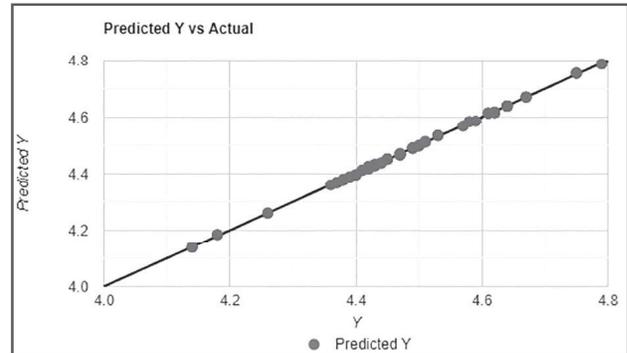


Figure 16: Predicted Y vs Actual

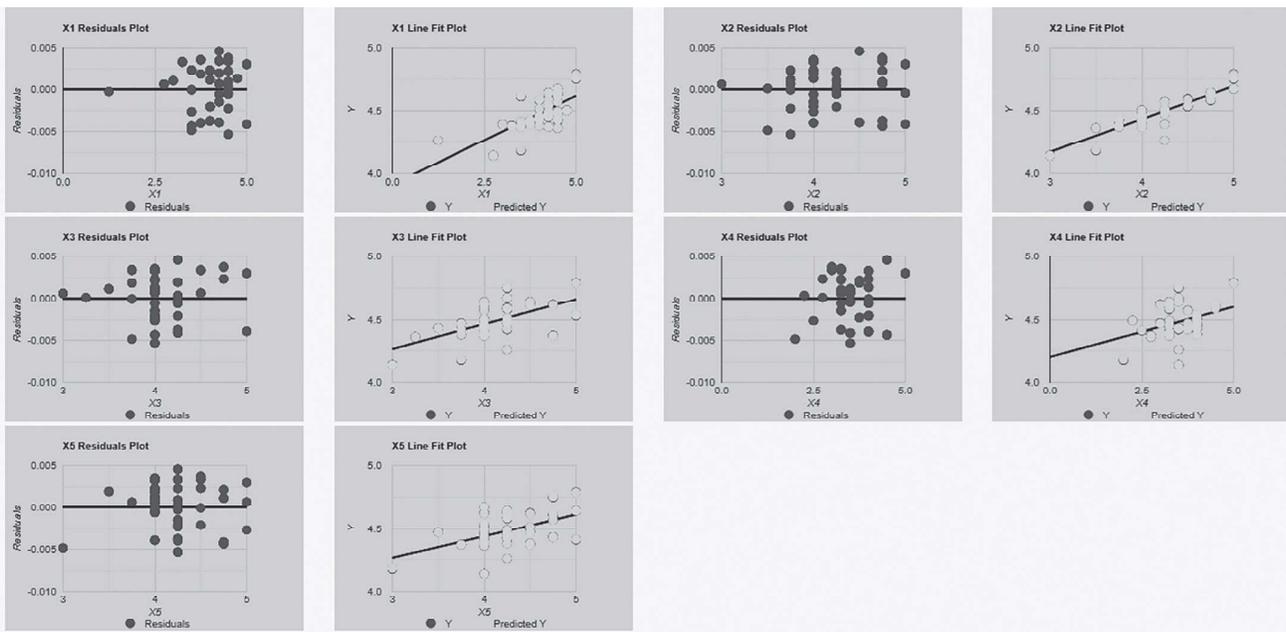


Figure 17: Residual Plot and Line fit Plot

Challenges for the Infrastructural Development in Nepali Army

Economic Concerns

Nepal, a small and developing nation, faces significant challenges in its progress. With a low-income economy placing 146th out of 193 countries on the Human Development Index in 2023, poverty remains a pressing issue. The country operates on a tight budget, allocating a mere 3.3% of its total budget, approximately 58.84 billion rupees, for defense in the 2080/81 fiscal year. This limited budget primarily covers basic soldier needs such as salaries, food, and minimal accommodations, leaving little

for modernizing the army's physical infrastructure. Consequently, soldiers live in cramped, outdated quarters with inadequate training facilities, hindering the overall modernization and standardization of the armed forces. To achieve this modernization, the government needs to significantly increase its investment over several years to construct updated infrastructure for the entire army.

Government in Uncertainty

Government is crucial in setting national plans, including security policies outlined in constitutions. When formulating a comprehensive security policy,

it's essential to consider resources, objectives, and stability. Government instability often sidelines long-term military modernization for short-term agendas. Clear tasks and a consistent mandate are vital for the army's preparation. However, some political factions doubt the need for a well-equipped army due to a perceived lack of conventional war threats. Unfortunately, our unstable government hampers the necessary vision for vital armed forces' modernization, including essential infrastructure updates.

Regional Variability

Nepal, despite its small size, boasts diverse geography with three distinct regions: the Himalayas housing Mt. Everest, the Hilly region, and the Terai plains. The Himalayan area, freezing year-round with districts still lacking proper road connections like Humla and Dolpa, demands unique infrastructure, especially specialized accommodation due to extreme weather. Construction materials and techniques differ in these cold regions, posing challenges in transportation and sourcing local labor and materials. The Hilly region experiences both cold and hot climates, often in remote districts, making material transport and labor accessibility difficult. Unlike the hilly areas, the Terai region stays mostly hot, experiencing extreme cold only briefly during winter. Infrastructure designed for one region doesn't apply to the others due to weather variations, impacting construction costs and complicating the modernization of the national armed forces spread across these diverse regions.

Not Enough Robust National Policy

Our defense policy is influenced by the contentious 1950 Treaty with India, hindering a definitive vision for our army's standardization. This lack of clarity indirectly impacts infrastructure modernization and other facilities within the armed forces. Time and again there is frequent amendment in the Public Procurement Regulation which also has been influenced by the elite contractor. Moreover, the government's ambiguity about future troop numbers hampers infrastructure planning beyond current standards. Establishing a clear vision for the future of our National Army would facilitate long-term planning.

Construction Time

Occasionally, the time allotted to finish building a physical infrastructure deviate from the basic engineering construction principles. Time constraints and hurried construction ultimately led to low-quality work that was completed before the planned period of time. Because it needed maintenance sooner, this ultimately lowers the quality of the infrastructure and raises project costs.

Findings

From the above analysis, it is evident that road construction and connectivity has obtained the highest rating among the variables. Also, the correlation between the various variables is on the higher side. We can deduce that each of the aforementioned variables must have a positive harmonious trend for the successful connectivity to occur. The relationship among the variables can be established with the following equation.

$$Y(X_2) = 3.03 + 0.08 X_1 + 0.21 X_3 + (-)0.03 X_4 + 0.03 X_5 + 0.06 X_6$$

On the other hand, transportation advancements play a vital role in spatial development, fostering new urban centers and serving as meeting points for diverse regional populations. Analyzing the road's trajectory reveals its passage through national road network to district headquarters along with Terai and Kathmandu, boosting people and goods' mobility, especially between Kathmandu and Terai and also with the mountainous terrain with the shorter distances. This improved connectivity can ease socio-political tensions between these regions. Also, the road construction has emphasized on the various facets of economy, development, unity and future prospects as well. Some of them is described further.

National Integration Based on Territories

The geographical distance hasn't only caused economic barriers but also a political divide between Kathmandu and the rest of Nepal, weakening national unity and sovereignty. While transport networks are usually seen for trade and market advantages, their role in enhancing national unity is often overlooked. The ongoing Madhesi-Pahadi regional difference stems from

this lack of connectivity and cultural integration. Strengthening connectivity, like the Kathmandu-Terai fast track road, can create a platform for national unity. The road could reduce the Madhesi-Pahadi gap, fostering social belongingness and intergroup cohesion. Bridging this distance through infrastructure like the fast-track road amalgamates individuals into a stronger national group based on shared commonalities, culture, and socio-economic relations, fostering positive social change. Additionally, the fast track aims to connect Nijgadh airport and other eastern cities to Kathmandu, facilitating population dispersion and institution decentralization. It's anticipated to reduce travel time and stimulate industrial growth in both regions, potentially leading to the establishment of new economic hubs.

The Path to Global Connectivity

Viewed internationally, the fasttrack road would significantly reduce the distance between the Nepal-India trading point and the Chinese border, opening avenues for improved connectivity across Nepali territory. With strategic management by Nepal's government, this expressway could facilitate tri-lateral trade among Nepal, India, and China. Positioned along the country's North-South Axis, it holds the potential to become a transit route between China and India, pivotal for the world's fastest-growing economies. Notably, the Nijgadh International Airport's functionality hinges on the existence of this Fast Track Road. This infrastructure could cater to a greater influx of Buddhist and Hindu tourists, reducing travel time to destinations like Janakpur and Lumbini, thus promoting tourism, a potential catalyst for stronger trilateral cooperation.

International tourism plays a crucial role in fostering global peace and understanding, connecting individuals across cultures and civilizations. The Kathmandu-Terai Fast Track could serve as a meeting point for people from Nepal, India, and China, paving the way for a diplomatic triangle based on robust people-to-people relations. Furthermore, the road's viability offers the opportunity to relocate industries to the Central East Terai, fostering closer ties with the international airport and Kolkata port, strengthening trade relations with India. Being part

of the North-South Transit Route linking Birgunj and Rasuwaghadi, the Fast Track assumes a significant role in connecting China to the Indian subcontinent. The anticipated extension of the Chinese railway line to Rasuwaghadi suggests immense trade potential among the three nations. Nepal's strategic position as a land-linked nation becomes crucial in shortening the land route between India and China, positioning the country at the geo-strategic center for connecting these two burgeoning Asian economies.

Nepal's road connectivity has seen notable enhancements through its involvement in the Belt and Road Initiative (BRI). The BRI has facilitated the development of vital transportation corridors like the Trans-Himalayan Multi-Dimensional Connectivity Network, aiming to link Nepal with China's Tibet Autonomous Region.

This initiative has supported Nepal's infrastructure growth, fostering better road connectivity within the country and linking it to broader regional networks. Improved roads and trade routes have boosted economic ties, enhanced trade, and promoting cross-border exchanges. However, the relationship has also sparked debates regarding sovereignty and debt concerns, prompting careful evaluation of the long-term implications of Nepal's participation in the BRI. Overall, while contributing to Nepal's connectivity and infrastructure, the BRI involvement necessitates a balanced approach to ensure sustainable development and safeguard national interests.

Conclusion

Road construction significantly influences connectivity, impacting various facets of society. Enhanced connectivity through well-constructed roads fosters unity by bridging geographical divides, facilitating interaction between communities, and promoting cultural exchange. Economically, robust road networks drive development by improving accessibility to markets and reducing transportation costs. This fosters trade, attracts investments, and creates employment opportunities, stimulating economic growth. Additionally, efficient road systems are crucial for industries, enabling the smooth movement of goods and services, thereby bolstering economic prospects.

Socially, improved connectivity positively affects access to education, healthcare, and essential services. It enhances mobility, linking people to opportunities and amenities, thus improving quality of life. Moreover, better roads promote social cohesion by connecting remote or marginalized areas to urban centers, reducing disparities. Regarding future prospects, well-constructed roads accommodate technological advancements like smart infrastructure, supporting sustainable transportation systems. They lay the groundwork for future innovations and developments, ensuring adaptability to changing needs.

However, ensuring road safety is paramount. Construction must align with safety standards to prevent accidents and ensure the well-being of road users. Safe roads not only save lives but also instill confidence in using transportation networks, promoting economic and social activities. In essence, road construction and connectivity are integral to unity, economic and social development, future prospects, and road safety. Their interplay shapes communities, economies, and the quality of life while dictating the trajectory of progress. Balancing development with safety measures is crucial for reaping the full benefits of enhanced connectivity.

Recommendation

A nation state is a clearly defined entity that is expressed in the public sphere through its political, legal, health, and educational systems as well as the morals and values these institutions stand for. Indeed, who is allowed to access these components determines who is allowed to remain in a nation state and who is not? Who is treated with respect as a citizen and who is not? Who is a relative and who is not? Everything is dependent upon how things relate to the center. Therefore, road connectivity in such a scenario can strengthen national cohesion in two ways: by drawing people closer to the center or by decentralizing Kathmandu as the nation's hub. In terms of international relations, China's Tibet and Nepal's capital Kathmandu are intended to be connected by the 170-kilometer Kerung-Kathmandu railway under the Belt and Road Initiative (BRI) project. The road connectivity will automatically

materialise the potential for trilateralism through trade between the three countries by ensuring improved connectivity from Kathmandu to Indian borders.

Efficient road construction and connectivity are pivotal for fostering unity, social inclusion, and robust economic development. To achieve this, collaborative planning involving local communities and stakeholders is essential. Emphasis should be placed on constructing roads that not only link regions but also respect cultural and social identities, promoting unity while ensuring equitable access to opportunities for all. Integrating social infrastructure along roads, such as schools and healthcare centers, contributes to social development by enhancing accessibility to essential services, empowering communities, and reducing disparities.

Safety measures play a crucial role in road construction. Implementing stringent safety standards, including proper signage, speed regulations, and pedestrian-friendly designs, ensures the well-being of road users. Additionally, investing in education and awareness campaigns on road safety contributes significantly to minimizing accidents and preserving lives. Strategic planning for future prospects involves incorporating adaptable designs and technologies that support sustainable development. Building roads that accommodate technological advancements like smart infrastructure and electric vehicle charging stations paves the way for future innovations, reducing environmental impact and fostering economic growth in emerging sectors. International connectivity through road construction should prioritize collaboration and connectivity agreements between nations. Establishing efficient border crossings and standardized road systems enhances trade, cultural exchange, and tourism while promoting regional stability and cooperation.

In essence, an integrative approach to road construction and connectivity is vital. By focusing on unity, social and economic development, safety measures, future prospects, and international connectivity, we can build roads that not only connect regions but also empower communities, drive sustainable growth, and strengthen global relationships.

References and Bibliography

Chitkara, K. (2014). *Construction project management : planning, scheduling and controlling*. New-Delhi: McGraw-Hill Education.

Gaige, F. H. (1975). *Regionalism and National Unity in Nepal*. Sage Publications, Ltd.

GoN-Constitution. (2015). *Constitution of Nepal-2072*. Kathmandu: GoN, NLC.

KTFT Road Project. (2021). *Fast Track Website*. Retrieved from <https://ktft.nepalarmy.mil.np/>

Nepali Army. (2080 BS). *Nepal Army Portal*. Retrieved from <https://nepalarmy.mil.np/>

NPC. (2020). *The Fifteenth Plan*. Kathmandu, Nepal: National Planning Commission. Retrieved from https://npc.gov.np/images/category/15th_plan_English_Version.pdf

Rankin, K. N., Tulasi, S. S., Rai, L., Kunwar, S., & Hamal, P. (2017). Political Economies and

Political Rationalities of road building in Nepal. *Studies in Nepali Society and History* 22, 43–84.

Regmi, M. C. (1988). *An economic history of Nepal, 1846-1901*. Varanasi : Nath Pub. House, 1988.

Sattar. (2011). *Regionalism: A Great Threat to National Unity of India*. Meerut: The Indian journal of political science.

Shrestha, E. S., Shrestha, E. R., & Bhattarai, E. S. (2016). *Text Book of Construction Management*. Kathmandu, Nepal: Heritage Publishers & Distributors Pvt. Ltd.

White, H. P., & Senior, M. (1983). *Transport Geography*. Longman; 2nd ed. edition (25 July 1983).

Wilson, F. (2004). Towards a Political Economy of Roads: Experiences from Peru. *Development and Change* 35(3), 525 - 546.

Annex 1

Relative Importance Index (RII) – Likert's Scale

Total surveyed (Survey Data)

S.N.	Statement on subject	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1.	Road Construction and Unity	122	213	41	10	14	400
2.	Road Construction and Connectivity	198	196	6	0	0	400
3.	Economic Development Connectivity	118	246	31	5	0	400
4.	Social Impact of Connectivity	72	295	31	2	0	400
5.	Road Quality, Safety and Maintenance	62	174	89	56	19	400
6.	Future Connectivity	129	250	14	7	0	400
	Total	701	1374	212	80	33	2400

Calculation

S.N.	Statement on subject	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total		RII	Rank
1.	Road Construction and Unity	610	852	123	20	14	1619	2000	0.810	5
2.	Road Construction and Connectivity	990	784	18	0	0	1792	2000	0.896	1
3.	Economic Development Connectivity	590	984	93	10	0	1677	2000	0.839	3
4.	Social Impact of Connectivity	360	1180	93	4	0	1637	2000	0.819	4
5.	Road Quality, Safety and Maintenance	310	696	267	112	19	1404	2000	0.702	6
6.	Future Connectivity	645	1000	42	14	0	1701	2000	0.821	2