

PMGSY Outcome Monitoring Study

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Executive Summary

Background

With the perspective that rural roads are a critical infrastructure to improve rural livelihood, and alleviate poverty, the World Bank has partnered with the GoI for supporting the Pradhan Mantri Gram Sadak Yojana (PMGSY). In the first phase, the Bank's Rural Road Project I (RRP I) was implemented in select districts of Jharkhand, Himachal Pradesh, Rajasthan and Uttar Pradesh. RRP I was approved for 2004-2012 with an outlay of \$400 million. The second phase RRP II (2010-2015) focused on providing all-weather roads to villages in eight states. These include the low-income states of Bihar, Jharkhand, Rajasthan and Uttar Pradesh, and the special category upland states of Himachal Pradesh, Meghalaya, Uttarakhand and Punjab (<http://www.worldbank.org/en/country/india/brief/rural-roads>, accessed on July 28, 2016) as per the PMGSY guidelines.

The current study focuses on the eight RRP II states.

Objectives

The objectives of the study were:

- i. To develop a simple and practical, yet robust standardized outcome monitoring system for PMGSY which could be used regularly and is capable of being scaled up.
- ii. To test this system in selected states through the conduct of limited period surveys to ascertain the impact of the program in these states.
- iii. To embed this monitoring system within a broader framework for poverty alleviation as part of the GoI's 12th Five Year Plan (2012-17).
- iv. In specific context of poverty alleviation to study the impact on agriculture.*
- v. To design the monitoring system in a way that it enables the user to develop recommendations that could be used to modify the program suitably.

*We made this a part of main study, rather than as an additional study based on our discussions with NRRDA held on June 24, 2016 at New Delhi.

Design of the Study

In order to formulate the outcomes/goals and accordingly develop a list of possible indicators that could be used to monitor the outcomes of the program along the economic, employment and social dimensions, we followed a multi stage process. The analysis from prior studies was taken into account. Based on this, we had FGD in all the study states with officials of the WB, NRRDA, selected SRRDAs, villagers, opinion leaders, women, specified groups such as women and SC/ST.

The data collection methodology to assess the socio-economic benefits of roads was a survey. Two kinds of instruments were used: (i) Household (HH) individual rural citizens and key opinion makers in the habitations and (ii) Habitation level.

Based on the above approach, we tested the data collection methodology in selected states in mutual consultation with the Bank, and supervised collection of data in these states through

limited period surveys. A different consulting firm under our guidance and supervision carried out the collection of data.

Findings from the impact evaluation exercise in these states would be fed into a Monitoring and Evaluation (M&E) database in MS Excel, to provide inputs to revise the outcome monitoring system.

Sampling Framework

A multistage sampling process was adopted. The samples for the Habitations questionnaire was based roughly on the number of Habitations in the state and the HH sample was roughly proportional to the population with due increase when the population of the Habitation is diverse across caste groups. In taking up the Habitations within a state, further stratification based on agro-climate and geography, distance to large urban centers, and the characteristics of the embedding road network (one way all weather, two or multiple all weather connectivity) was considered once the pilot study was carried out. The modus operandi was to randomly select the HHs once the Habitation was selected. Opinion leaders, key personnel (such as school teachers) were interviewed to build the habitation/gram panchayat level data. We covered 282 Habitations and 3177 HH.

Summary of Approach to the Study

The objectives of the study identified above were fulfilled by taking the following measures:

- i. We focused on the primary variables of Speed of Travel Gains (hitherto Speed Gains) and Time Saved¹ for types of services/ access needs. Since we wanted to capture the influence of PMGSY road, our study has examined both these measures in the presence of PMGSY and non-PMGSY road. This was done across the road characteristic variables (such as Phase of Construction, Type of Roads, Agro-Climatic Zones and States).
- ii. The economic and social, and cultural benefits which depend on a number of other variables have been captured through user surveys to understand perceived benefits of PMGSY roads. These were used to derive a smaller set of variables for incorporating into future surveys. These were checked for correlation with the Speed Gains and Time Saved so that “speed of travel” and time saved becomes the easier and more tangible measures for monitoring the effectiveness of the PMGSY roads on a continuous basis.
- iii. Considering the broader framework for poverty alleviation as part of the GoI’s 12th Five Year Plan (2012-17), the Habitation analysis in Chapter 5 included variables on SC/ST population, BPL population and Agricultural Labour population. This was to understand the impact of presence and maintenance of PMGSY roads on these marginalized populations.

¹ Time saved was measured as the percentage (or fractional time) reduction in accessing the service/ need between then (before the road building programme) and now (after road building). In the case where a PMGSY was built it would be before. In the case where there is no PMGSY, the difference between after and before should show very little change. The “speed of travel gain” = $(D/t_2) - (D/t_1)$ where t_1 and t_2 are times taken earlier and now. D is specific to the HH or Habitat and pertains to accessing the service/ facility in question (e.g. taluka headquarter, mandi, district highway head, health care service etc). Note that t_1 and t_2 can differ from each other for a number of reasons that include mode change (such as the use of motorized transport when earlier that was rare) and the speeds of vehicles rising on a much better road.

- iv. Since our study has identified a small set of variables as outcome monitoring variables across the different phases and quality of roads, this process can be scaled. This was an eight state study with consideration for various agro-climatic zones that capture various terrains and socio-economic profiles. Thus, the model is largely representative of the diverse terrains and socio-economic profiles.
- v. The perception about access and other variables include specific questions on agriculture e.g. price realization of agricultural produce, access to market/mandi for agricultural produce, shift in agricultural practices or cropping pattern etc. The Speed Gain and Time Saved also include questions on time saved to mandi etc. This was to ensure that the study captures the impact on agriculture and its supply chain. Specific focus on impact on agriculture is ensured by analyzing impact across agro-climatic zones. Accessibility to markets/mandis for various agro-based products is also investigated. This has helped us to embed the aspects of agricultural supply chain in our analysis.

Findings from the Study

- i. The presence of PMGSY road brings about significant and substantial gain in speed of movement (obverse of time reduction), in access to all administrative headquarters and facilities considered. The same is also highly correlated with the access and other benefits claimed and reported by Habitats and HH.
- ii. This is also found to be the case across states and agro-climatic zones.
- iii. The impact of the PMGSY in terms of Speed Gains and Time Saved is less when the road in question was either of small length, or where the prior road was good. (e.g., Punjab). This is in terms of speed gain improvements and time saved. Nevertheless even there, there is maintenance of the Speed of Travel and of time in the face of rising use.
- iv. The impact is also seen to be more in difficult terrains and agro-climatic zones such as plateau and terai, where the last mile before the PMGSY was uniformly poor.
- v. The quality of road is another important factor. The specifications and most importantly the actual construction quality of PMGSY roads are much better than of other non-PMGSY roads. This being so even when the PMGSY roads are technically “earthen bound roads” or “macadam roads” they are able to yield significant speed gains /time saved. This would imply that the core change that has made the PMGSY better are the organizational, that the arrangements being “incentive compatible” have delivered in a significant way.
- vi. The phase of construction of road is an important predictor of the requirement of maintenance of the road. This has become significant because maintenance is not to be assumed given the organizational weaknesses of government roads departments. Thus, the regular monitoring of road quality (emerging bottlenecks, congestion points, small sections of failure, overall surface roughness) and maintenance measures are suggested for holding on to the optimum speeds of travel /time of travel.
- vii. There was decline in quality (as measured by speed gains) over-time due to ageing of roads. Maintenance of roads thus becomes an important aspect of the primary task of the

implementation agency. This is obvious. If a road is not maintained well, the quality of the road deteriorates to result in loss of social value.²

- viii. Villages with higher populations of SC/ST, BPL and other backward sections of the society have indicated similar or (typically) higher speed gains. Thus, construction of PMGSY roads is able to bring about socio-economic benefits to the poor on par with that for the poor or socially backward and sometimes even more than for other sections of society. Since the more “remote” and as before the PMGSY, poorly connected habits would have had larger proportions of tribal and excluded people, and now they are being connected through roads that are distinctly better, hence these results. Being also not a transfer benefit but a benefit that arises out of value creation, the importance of the PMGSY by the improved access it creates, cannot be overstated. These sets of people may otherwise have not been able to leverage road connectivity in the existing administrative and political framework. Thus their inclusion via better connectivity can be attributed to the PMGSY.
- ix. From the various correlational analyses, Principal Component Analysis (PCA) and regressions carried out in the study on the habitat and household dataset, one can infer that presence of PMGSY road is the major driver of perception in improvement of access. This happens measurably through speed gains and time saved to various administrative headquarters and facilities.
- x. For monitoring and evaluation, speed gain and time saved can serve as important variables. Also these variables being directly measured and typically carried out close to the road would be pragmatic as well for the roads departments.
- xi. The economic impact through population and income weighted mean of the speed gain in the presence of PMGSY roads and in their absence with other roads being present shows there were significant gains due to the presence of PMGSY.
- xii. Besides the study above, our various interactions with RRDA, SRRDA and other functionaries brought out the need to focus on:
 - a. The required connectivity to Habitations with a population of 500 persons and above in plain areas, 250 persons and above in special category states that have emerged in Census 2011.
 - b. Re-layering of early PMGSY roads and other rural roads.
 - c. Maintenance system (based on vehicle profiling)
 - d. Improving network reliability (interconnecting villages)
 - e. Removing bottlenecks on higher level roads.

Recommendations for Variables of Monitoring and Evaluation Database

The presence of PMGSY road, percentage Speed Gain and Time Saved variables are important variables to be monitored. Therefore, the suggestion is that Monitoring and Evaluation (M & E) database should annually collect data on percentage Speed Gain and Time Saved on newly

² The biases against poor maintenance arises from the poor incentive compatibility of public investments to ensure this. The distinction between plan and non-plan incentivized the state governments to neglect maintenance. There are other distortions in the fiscal process as well.

built PMGSY roads. The Speeds achieved immediately after the construction would have to be maintained.

The process for arriving at the optimum Speed or Time for each agro-climatic zone in a particular state are as follows:

- i. NRRDA should conduct periodic or annual studies to look at optimum speed. These may be derived by carrying out studies across newly-developed PMGSY in specific agro-climatic zone in that state. This may then be used as a benchmark against the speed gains derived in similar surveys across the state and the previous survey. Any reduction will indicate the need to either widen or maintain the road.
- ii. The survey is to be done on a sampling basis. Data on traffic and vehicle types will make the calculation of optimum speed more granular. Further, based on our analysis of the perception and opinions about access variables according to their explanatory powers of the variance (Refer Table 5.3.2 and 5.4.1) for habitation and HH data respectively, the desired questionnaire may be designed and administered.
- iii. Alternatively, after the new construction when the PMGSY road is at its best, the speeds at those times may be recorded. Any fall/rise in speed/time from the same should be a matter of concern. Some bikes and four-wheelers (tractors) are the most important modes of transport for which the monitoring needs to be done. The survey should identify the new roads and existing roads that are to be covered. Similar data for point to point Village to Taluka Headquarter, District Headquarter, and State Highway, Mandi connectivity etc. may be monitored regularly.
- iv. This data may be entered into a specifically designed Excel or IT system for monitoring and evaluation.
- v. In case this study needs to be repeated, it can be done by handheld devices. These should automatically link the data captured into the M&E database. This would require NRRDA to develop the relevant apps on handheld devices and have the data consolidated at a central location.
- vi. The survey instrument used is capable of capturing the socio-economic, environmental or safety-related benefits of the PMGSY road. The survey instrument uses 26 items in the scale. However, based on a systematic analysis using PCA we propose a reduced set of 16 items for the survey instrument for the Habitat.

Chapter 1. Introduction

1.1 Pradhan Mantri Gram Sadak Yojana

Pradhan Mantri Gram Sadak Yojana (PMGSY) is a key program of the Government of India (GoI) to provide road connectivity in rural India. It was launched on December 25, 2000, under the Ministry of Rural Development (MoRD). It was funded by the central government through the Central Road Fund. It sought to provide all-weather road access for all Habitations of population of more than 1000 by 2003 and greater than 500 in plains and greater than 250 persons in desert, hilly and tribal areas and 250 persons and above in hill States, the tribal and the desert areas by the end of the Tenth Five Year plan in 2007 (World Bank (WB) Executive summary, November 2010).

The PMGSY permits both new construction (NC) and upgradation (UG). Unlike in the past, specific standards for construction and upgradation have been specified under PMGSY. The first priority is providing connectivity to the unconnected Habitations. PMGSY covered 2,15,143 Habitations, with a road length of 4,70,858.50 km, and an expenditure of Rs 140,09,348.60 lakhs.

PMGSY-II was launched to consolidate the existing rural road network. This proposed to cover during the 12th five-year plan period, 50,000 km road length by upgradation of existing roads at an estimated cost of Rs 33,030 cr (at 2012-13 prices). The costs were to be shared between the Centre and States/UTs on 75:25 for the plains and 90:10 basis for the special areas.

With effect from April 1, 2015, the costs of construction of all PMGSY roads are shared between the central government and the states. While centre: state ratio is 90:10 in respect of NE states and hill states of Himachal Pradesh, Jammu & Kashmir and Uttarakhand, it is 60:40 for other states.

All PMGSY roads involve a five-year maintenance contract, entered into along with construction contract, with the same contractor. Maintenance funds to service the contract are budgeted by the state governments. On expiry of the five-year post-construction maintenance, the state governments make the necessary budget provision to place such roads under zonal maintenance contracts.

The National Rural Road Development Agency (NRRDA) set up on January 10, 2002 to provide management and technical support to the states in implementing PMGSY. At the state level, the State Rural Road Development Agencies (SRRDA) monitor PMGSY works, which are implemented by Public Works Departments (PWD), Rural Development Department and similar agencies.

With the perspective that rural roads are a critical infrastructure to improve rural livelihood, and alleviate poverty, the WB has collaborated with the GoI for supporting PMGSY. In the first phase, the Bank's Rural Road Project I (RRP I) was implemented in select districts of Jharkhand, Himachal Pradesh, Rajasthan and Uttar Pradesh. RRP I was approved for 2004-2012 with an outlay of \$400 million. The second phase RRP II (2010-2015) focuses on providing all-weather roads to villages in eight states. These include the low income states of Rajasthan, Uttar Pradesh, Jharkhand and Bihar, the special category upland states of Himachal Pradesh, Uttarakhand and Meghalaya, and Punjab

(<http://www.worldbank.org/en/country/india/brief/rural-roads>, accessed on July 28, 2016) as per the PMGSY guidelines.

The current study focuses on the eight RRP II states. Figure 1.1 gives the map of India, showing the covered states.



Figure 1.1: Map Showing Covered States

1.2 Profile of Covered States

Table 1.1 details the profiles of the covered states providing details on the population, area, population density, rural population, and number of districts, villages and rural Habitations. These cover nearly 37% of India's population, 43% of rural population and 29% of the area. The number of districts, villages, and rural Habitations covered are 34%, 45%, and 44% respectively. The average population density of these states is 482 compared to the national average of 382. However, the population densities range from less than one third of the national average (Himachal Pradesh) one to 2.9 times the average (Bihar).

Table 1.1: Details for Covered States

Sr No	State	Population (Nos)	Area (sq km)	Population Density (Nos/sq km)	Rural Population (Nos)	Districts (Nos)	Villages (Nos)	Rural Habitations (Nos)
1	2	3	4	5	6	7	8	9
1	Bihar	10,38,04,637	94,183	1102	920,75,028	38	44,874	1,07,642
2	Himachal Pradesh	68,56,509	55,673	123	61,67,805	12	20,759	53,201
3	Jharkhand	3,29,66,238	79,714	414	250,36,946	24	32,394	1,19,191
4	Meghalaya	29,64,007	22,429	132	23,68,971	7	6839	9326
5	Punjab	2,77,04,236	50,362	550	173,16,800	20	12,875	15,170
6	Rajasthan	6,86,21,012	3,42,239	201	515,40,236	33	45,028	1,21,133
7	Uttar Pradesh	19,95,81,477	2,40,928	828	1,551,11,022	71	1,07,776	2,60,110
8	Uttarakhand	1,01,16,752	53,483	189	70,25,583	13	16,933	39,142
	Total of Covered States	45,26,14,868	9,39,011	482	3,566,42,391	218	2,87,478	7,24,915
	India	121,01,93,422	32,87,263	382	8,330,87,662	640	6,40,930	16,66,075
	Share (%)	37	29		43	34	45	44

(Source: Column 2-8, Census of India, 2011, Ministry of Home Affairs, GoI, http://www.censusindia.gov.in/2011-prov-results/census2011_PPT_paper1.html, accessed in June, 2016; Column 9: MoRD, GoI, rural.nic.in/sites/downloads/IRDR/1.%20Demographic%20Profile.xls, accessed on June 28, 2016)

1.3 Road Network Profile

Table 1.2 gives the road network profile of the covered states. These have 21% of total roads and 15% of rural roads.

Table 1.2: Road Network: India and Covered States

(Length in km)

Sr No	States/Road Category	National Highway	State Highway	Other PWD Roads	Rural Roads	Urban Roads	Project Roads	Total
1	Bihar	4168	4483	9401	167579	8760	2848	197239
2	Himachal Pradesh	1506	1504	29908	15145	1852	3308	53223
3	Jharkhand	2374	1960	6191	17097	620	8822	37064
4	Meghalaya	1171	858	7462	1793	30	1003	12317
5	Punjab	1557	1477	7091	62900	15517	9900	98442
6	Rajasthan	7180	10465	81533	103441	12636	10869	226124
7	Uttar Pradesh	7818	7703	185840	113531	76549	44528	435969
8	Uttarakhand	2042	3788	22968	6933	4159	18824	58714
	Total of Covered States	27816	32238	350394	488419	120123	100102	1119092
	India	79116	169227	1066747	3159639	446238	310955	5231922
	Share (%)	35	19	33	15	27	32	21

(Source: Basic Road Statistics of India, 2012-13, Ministry of Road Transport and Highways (MoRTH), GoI, accessed on July 27, 2016)

Table 1.3 gives the details of WB RRP II projects. The total allocation was Rs 9522 cr. It covers both NC and UG. For Bihar, Himachal Pradesh, Jharkhand, Meghalaya, Rajasthan, and Uttarakhand, the focus is on NC only. For Punjab, the focus is on UG, with a small component of 13 km out of a total of 2295 km for NC. In Uttar Pradesh, the NC is 1939 km and UG is 2770 km.

Table 1.3: Details of WB RRP-II Projects

Sr No	State	Allocation @ Rs 60/\$ (Rs cr)	Projects Cleared					Work Awarded			Work Completed			Completed/ Cleared		Cleared/ Allocated
			Date	NC/UG	Nos	Length (km)	Value (Rs cr)	Nos	Length (km)	Value (Rs cr)	Nos	Length (km)	Value (Rs cr)	Length	Value	Value
1	Bihar	1464	21.11.13	NC	956	2292	1655	870	2062	1467	418	921	790			
			BR Total		956	2292	1655	870	2062	1467	418	921	790	0.40	0.48	1.13
2	Himachal Pradesh	672	05.10.11	NC	113	612	156	107	557	144	72	350	524			
			30.03.12	NC	64	288	74	58	242	62	44	139				
			15.03.13	NC	141	800	286	133	750	274	65	286				
			18.07.14	NC	100	548	246	99	544	245	38	148				
			HP Total		418	2249	763	397	2093	725	219	923					524	0.41	0.69	1.13
3	Jharkhand	1338	23.05.11	NC	177	721	202	170	698	224	88	313	1141			
			27.04.12	NC	230	793	277	176	647	239	92	283				
			15.10.12	NC	56	6	187	48	5	165	35	3				
			26.03.13	NC	881	2433	126	807	2248	1098	531	1414				
			JH Total		1344	3954	1911	1201	3598	1726	746	2013					1141	0.51	0.60	1.43
4	Meghalaya	600	16.08.11	NC	18	106	95	18	106	95	10	67	269			
			08.05.13	NC	75	267	230	75	267	230	18	56				
			04.02.14	NC	197	741	485	196	718	480	17	41				
			MG Total		290	1114	810	289	1091	80	45	164					269	0.15	0.33	1.35
5	Punjab	816	05.10.11	UG	20	311	149	20	311	149	20	311	1001			
				NC	7	13	6									
			22.05.12	UG	54	704	333	61	717	327	59	713				
			25.02.13	UG	124	638	319	124	637	304	119	634				
			26.08.13	UG	46	455	247	46	455	240	40	414				
			04.08.14	UG	48	173	92	48	173	126	41	153				
			PB Total		299	2295	1147	299	2293	1146	279	2225					1001	0.97	0.87	1.41
6	Rajasthan	2148	04.10.11	NC	1076	3603	886	1073	3590	881	1032	3224	2672			
			19.06.12	NC	687	1892	550	685	1880	547	626	1670				

Sr No	State	Allocation @ Rs 60/\$ (Rs cr)	Projects Cleared					Work Awarded			Work Completed			Completed/ Cleared		Cleared/ Allocated	
			Date	NC/UG	Nos	Length (km)	Value (Rs cr)	Nos	Length (km)	Value (Rs cr)	Nos	Length (km)	Value (Rs cr)	Length	Value	Value	
			11.03.13	NC	569	1672	483	568	1665	480	530	1506					
			19.08.13	NC	571	1715	510	568	1701	507	410	1478					
			24.02.14	NC	864	2617	796	864	2617	796	721	2231					
			RJ Total		3767	11499	3225	3758	11453	3211	3319	10109	2672	0.88	0.83	1.50	
7	Uttar Pradesh	1482	19.10.11	NC	514	812	37	458	743	340	428	691					
			02.11.12	NC	671	1126	533	636	1067	506	942	3472					
			03.12.12	UG	399	2769	104	389	2706	991	0	0	1619				
			UP Total		1584	4709	1917	1483	4516	1837	1370	4163	1619	0.88	0.84	1.29	
8	Uttarakhand	1002	05.10.11	NC	29	35	44	29	35	44	14	28					
			08.02.13	NC	126	1140	471	126	1140	442	92	993					
			31.07.13	NC	109	675	335	108	664	33	62	470					
			04.02.14	NC	34	317	151	33	295	148	13	148	748				
			UK Total		298	2166	1002	296	2134	968	181	1639	748	0.76	0.75	1.00	
Total		9522			8956	30278	12429	8593	29240	11885	6577	22157	8764	0.73	0.70	1.30	

(Source: WB, Email from Mr S S Bhatia, Deputy Director, July 28, 2016)

With this allocation, the value of cleared projects was Rs 12429 cr. Funds have been allocated through other sources. Rajasthan, Jharkhand, Punjab and Meghalaya in that order, have had statistically significant contribution from other sources of the cleared projects. The completion percentage was 73% in terms of length and 70% in terms of expenditure. Meghalaya, Himachal Pradesh, Bihar and Jharkhand, in that order, had incurred expenditure proportionally higher than length completed. The other states had proportionally completed more length than expenditure incurred.

1.4 Sources of Information

The basis of the inception report and the development of our plan of study, including focus areas and possible monitoring indicators are both primary and secondary data.

We have gathered primary data from meetings with officers from:

- a. NRRDA on June 24, 2016 in New Delhi (Appendix 1)
- b. Bihar Rural Roads Development Agency (BRRDA) on July 6, 2016 in Ahmedabad (Appendix 2) and on August 24, 2016 (Appendix 5)
- c. Himachal Pradesh Rural Roads Development Agency on August 23, 2016 (Appendix 5)
- d. Jharkhand Rural Roads Development Agency on August 23, 2016 (Appendix 5)
- e. Meghalaya Rural Roads Development Agency on August 22, 2016 (Appendix 5)
- f. Punjab Rural Roads Development Agency on September 20, 2016 (Appendix 5)
- g. Rajasthan Rural Roads Development Agency (RRRDA) on July 25, 2016 in Jaipur (Appendix 3 and 5)
- h. Uttar Pradesh Rural Roads Development Agency on August 25, 2016 (Appendix 5)
- i. Uttarakhand Rural Roads Development Agency on August 18, 2016 (Appendix 5)

Our site visits to some rural roads covered under RRP II and otherwise provided us additional inputs.

For secondary data, we have examined the various past studies listed in Appendix 4 and relevant websites.

Chapter 2. Review of Past Studies

2.1 On the Way to Good Health? Rural Roads and Morbidity in Upland Orissa

1. **Publication Year:** September 2015
2. **Period of Study:** 2010- 2013
3. **Commissioned by:** Department of Economics, University of Heidelberg.
4. **Executed by:** Clive Bell and Susanne van Dillen
5. **Objective of the Study:** To study the impact of PMGSY on morbidity.
6. **Methodology:**

Data Collection

Data collection was done in 30 villages in Odisha covering five contiguous blocks. Data was collected in 2010 and 2013. Survey questionnaires were administered. Village was seen as a unit in a network and hence details of trips undertaken to a hospital or a Primary Health Centre (PHC) included all road segments and their status (kutcha or all weather). The study also took into account the individual, Household (HH) and village level characteristics in the analysis. Further, since the study examined infectious diseases, it took into account the total population of the village, total area under forest cover (as incidence of diseases like malaria depends on such factors) and its topography as village level factors contributing to disease incidence. At the HH level, its land holding, the sex and education of the head, number of adult males and females working, and children and whether Schedule Castes (SC), Schedule Tribes (ST) or Other Backward Classes (OBC) were considered. At the individual level age and relationship to the head were taken into account.

Data Analysis

Regression analysis using village, HH, individual and road network characteristics using the linear probability model and to bit specification was done.

7. **Outcome Parameters Measured:**
 - i. **Health:** Morbidity
8. **Key Takeaways:**
 - A systematic, robust methodology was applied.
 - Roads lead to lower morbidity. Probability of falling sick and an individual's expected number of days of sickness was lowered in proportion to the length of the road. Most of the effect is attributable to a reduction in the probability of falling sick, rather than the duration of the incident of sickness.
 - More frequent visits for preventive health could lead to better health, better nutrition from higher incomes consequent to road construction, and higher education for women facilitated by roads leads to better socio-economic outcomes.
9. **Limitations:** Applicability of the results on a longer term or a different context were not confirmed.

2.2 A Report on Impact Assessment Study of PMGSY Including Gender

1. **Publication Year:** 2015
2. **Period of Study:** 2014-2015
3. **Commissioned by:** NRRDA/MoRD, GoI

4. **Executed by:** Birla Institute of Technology and Science (Prof Sanjiv Kumar Choudhary and Dr Shivi Agarwal)
5. **Objective of the Study:**
 - To conduct limited period survey to ascertain the impact of PMGSY program.
 - To understand Impact of PMGSY on improvement of Gender issues.
 - Suggestions on how can PMGSY program design, further recognize and incorporate social concerns.
6. **Methodology:**

Data Collection

 - The study was done in Rajasthan in the two districts of Jhunjhunu and Churu. Five panchayats (3 from Jhunjhunu, 2 from Churu) were selected.
 - The survey was done in areas where new roads were constructed under PMGSY in the last 2-3 years, prior to the study. 623 respondents were covered.
 - Besides Focus Group Discussions (FGD), questionnaires were filled up by the head of the family (usually a male) and a female (not necessarily from the same family).
 - The questionnaires covered the perception of benefits after the road construction.

Data Analysis: Simple analysis using percentage scores was done.
7. **Outcome Parameters Measured:**
 - i. **Traffic:** New bus routes, delivery/pick up vehicles (milk) and other products
 - ii. **Access:** Travel related, Health, education,
 - iii. **Education:** Access to quality education through school buses of reputed schools, especially for the girl child, lowering the cost of travel
 - iv. **Health:** Access to doctors (with women being the bigger beneficiaries) and visits of doctors and nurses.
 - v. **Employment:** Daily commute for employment possible
 - vi. **Agriculture/Animal Husbandry**
 - vii. **New Modes of Employment:** Plying auto rickshaws, delivery vans, shops on the wayside.
 - viii. **Beneficiaries participation in PMGSY (Planning, construction and post-construction)**
 - ix. **Interesting/Novel Uses:** Practicing long distance running, fitness improvement.
8. **Key Takeaways:**
 - Involvement of local people in:
 - a. Planning of routes very important to take into account connectivity in the local context of location of mandis which may be in the next district or district headquarters is important.
 - b. Employment for the construction work is seen as an opportunity for employment generation.
 - c. Monitoring quality of construction. Women should specifically be involved.
 - Appropriate drainage should be designed at the time of construction.
 - Employment and income generating opportunities were enhanced due to the road connectivity to nearby urban areas, driving auto-rickshaws to nearby village, setting up of small shops in the village, and through waste collection and disposal.
 - Access to quality education was made possible as school buses from higher quality schools could pick up children from the villages. This was especially important for girls, due to the safety aspect. It became more economical as parents did not have to use a private vehicle for dropping children. Further road enables use of bicycles for close by schools.

- Access to health was facilitated as it enabled travel to hospitals, especially for women during child delivery and increased visits by doctors and nurses.
- Access to markets was enhanced leading to ease of sale purchase of agri-products in the markets and better prices. It has also led to increased production and collection of milk.
- Access to heavy building material and Liquefied Petroleum Gas (LPG) cylinders was possible due to the road.
- Gender based effects: Perceptions of both men and women were that women have benefitted more. The ability to access higher education and easy travel had given women more benefits than when the road was not there. As most women purchased for the family, they influenced the life style and purchase outcomes. The easy transportation facilitated by roads increased their sphere of influence.

9. Limitations:

- The rationale for the selection of study areas has not been provided.
- A very basic analysis has been done.
- Since the survey respondents covered both men and women, and the study focused on impact based on gender, an analysis of variance (ANOVA) across the genders could have provided stronger basis for the results of the study.

2.3 Impact Assessment Study of Improved Rural Road Maintenance System under PMGSY

1. Publication Year: 2015

2. Period of Study: 2013-2015

3. Commissioned by: NRRDA/MoRD, GoI and International Labour Organization (ILO)

4. Executed by: CMI Social Research Centre (CMISRC)

5. Objective of the Study:

“The study was designed on the hypothesis that maintenance of rural roads has a major impact on whether the benefits provided by the construction of road develop or not; and if the benefits do develop, whether these are sustained or not. This study was to assess the impact of rural roads construction and their maintenance and was aimed to find out the impact on:

- Agricultural Growth, particularly, in increasing market access for agricultural products
- Income and employment generation (both direct and indirect, in short run and in long-run)
- Access to healthcare, education and other facilities and the resultant outcomes
- Poverty reduction”

6. Methodology:

This impact assessment study was carried out in one district each of Bihar (Katihar), Jharkhand (Ranchi), Rajasthan (Alwar) and Uttar Pradesh (Sultanpur). It covered four groups of sample units: (i) PMGSY roads that were maintained, (ii) other scheme roads that were maintained, (iii) PMGSY roads that were not maintained, and (iv) other scheme roads that were not maintained. Units (i) and (ii) were called ‘sample’ Habitations and (iii) and (iv) were called ‘control’ Habitations. Each sample unit covered 500 HHs across 20 Habitations, divided as 125 HHs across 5 Habitations connected by 5 road projects in each district. As per the report, “HHs were interviewed; (FGD) were conducted in the Habitation comprising members of Panchayati Raj Institutions (PRI), School Teachers, Anganwadi Workers (ANW)/Health Workers, Men & Women Self Help Group (SHG) members, farmers, shopkeepers in the Habitation, other opinion leaders and residents of the Habitation from all sections of the society.”

7. Outcome Parameters Measured:

The study reports that the following parameters were measured:

i. Agricultural Growth:

- Improved all season access to regular and seasonal markets
- Improved availability and use of quality inputs to agriculture
- Increase in marketable surplus of agricultural produces
- Increase in use of motorized agriculture vehicles and equipment.
- Improvement in cropping patterns (more cash crops)

ii. Improved Income and Employment Generation:

- Improved all season access to nearby Industries and cities for jobs
- Increase in on-farm employment opportunities due to change in cropping patterns
- Improved access to banks/post offices and Gram Panchayat (GP)/Block offices for seeking funds and jobs
- Improved farm yields and better prices for agriculture/ horticulture produces

iii. Access to Healthcare, Education & other Facilities:

- Improved all season access and reduction in time traveled to the nearest PHC/Clinics/Hospitals
- Increase in number of deliveries in hospital/health centres/under medical supervision
- Increase in number/frequency of visits by health workers/ANW
- Improved all season access to schools/colleges/education and training centres
- Increase in number of students registered for higher education
- Increase in number of public transport buses connected to the Habitation
- Increase in number of recreational/pilgrimage/cultural visits
- Improved all season access to district/block/tehsil headquarters

iv. Poverty Reduction:

- Improvements in living standards
- Increase in percentage of non-agricultural workers
- Increase in trade opportunities/jobs for the poor

8. Key Takeaways:

- The sample Habitations had a 100% all weather motorized road access, while the control Habitations had an 88% access. Of the remaining 12%, there was an average 37 days of non-availability. The average travel time to reach mandis for the sample Habitations was 52 minutes, while for the control Habitations was 77 minutes. Interestingly, while these travel times were a statistically significant reduction from the nearly two hours before the road, the average travel distance from before the road to after the road across all sample units had gone up, attributable to the small farmers seeking access to mandis rather than local intermediary traders. The travel time for access to medical care, schools etc reflected a similar reduction, with sample Habitations showing a greater reduction (and a lesser absolute) than control Habitations. Thus maintenance of roads provided for better impact.
- Thus the study analyzed differences due to pre and post rural road and due to maintenance. All parameters were assessed based on questionnaire response and FGD inputs.

9. Limitations:

While the study had also spread the samples across PMGSY and other scheme roads, any differences due to these two categories was not analyzed and presented.

2.4 National Level Impact Assessment and Road User's Satisfaction Report

1. **Publication Year:** 2012
2. **Period of Study:** 2007 (pilot study), 2009 (baseline study), 2010 (mid-term study) and 2011 (final-term study)
3. **Commissioned by:** MoRD, GoI.
4. **Executed by:** Lea Associates South Asia Pvt. Ltd.
5. **Objective of the Study:**
 - To pilot the survey design and evaluation methodology developed for assessing socioeconomic impact assessment and studying user-satisfaction thereby to gain insights for detailed survey;
 - To assess the distributional pattern of socio-economic impacts on targeted population and respective Habitations where PMGSY roads are constructed, in comparison with other Habitations;
 - To assess the level of satisfaction derived in the use of PMGSY roads by the villagers against given set of indicators.

6. Methodology:

Data Collection

Four sets of data were collected. The set in 2007 was a pilot exercise, 2009 was the baseline survey and 2010 (mid-term) and 2011(at close) were the other data sets. 10 states were covered, with 4 groups – Assam and Mizoram, Orissa and West Bengal, Rajasthan and HP and Karnataka and Madhya Pradesh. The rationale for the grouping was purely administrative since each of the groups were covered by different sub-contractors. 11490 HHs within 750 Habitations across 33 districts of the 10 states were covered together over the three years for the “mid-term” and “final” estimates. The HH data collected covered the following:

- i. Availability of facilities within homes (kitchen, bathing, latrine)
- ii. Economic and Income
 - a. Occupation Profile (farmer, agricultural labour, construction labour, artisan, service (pvt, govt), trade/business, HH worker, unemployed)
 - b. Income of Family Rs /month (average, mode, median)
 - c. Land Price (irrigated, unirrigated)
- iii. Other infrastructural
 - a. Status of electricity connection (private, government, none)

For the “base line” 10943 samples were covered. A very large number of variables were tracked and measures. The districts were shortlisted based on “agro-ecological zones”, level of connectivity, agricultural productivity, social assets deficiency index and project (PMGSY) road density since these factors were a priori expected to influence the impact and the change. The list of Habitations (once the districts were selected) were selected from the Online Monitoring and Management System (OMMS) of the PMGSY. Within each district habitants proportionate to their numbers were selected. For each type 1, type 2 and type 3 Habitations were selected within the same block or in an adjacent block when such Habitations were not available. Within the Habitation the HHs were selected randomly. N HHs were selected where N is in the ratio of the number of HHs to the number of total sample HHs.

States (Assam, Mizoram, Orissa, West Bengal, UP, Bihar, Rajasthan, HP, Karnataka, Madhya Pradesh) and within the same the IAP Districts (Orissa, MP and Bihar- Rohtas, Gaya, Seoni, Siddhi, Kalahandi, Bolangir, Ganjam)

Data Analysis

The analysis was limited to bringing out differences in each of the states, in all the states together, across the Habitations where there was no treatment (type 2), partial treatment (type 1) and (full) treatment (type 3); as well the “double” difference i.e. the difference over time in partial treatment (and in full treatment) over the untreated cases. Four time periods were used 2007 (base line), 2010 (mid-term) and 2011 (final). The partial was expected to have the maximal impact in terms of change over time i.e. from 2007 to 2011, since these were previously “unconnected”³ villages now being connected with about 3 months for completion of the connectivity. The a priori expectations were that type 3 would have more positive values on development and access variables, with the lower change over time. Type 1 would have the low⁴ base line values with the highest change over time; and type 2 low base line values with little change, whereas type 3 would have the highest base line values with little or some change depending upon when in the past the Habitation connected and the nature of the indicator. A very large number of tables are presented, as in a statistical report, of differences and changes, and of differences in changes, from which conclusions of impact in terms of the very data variables are brought out largely by verbalizing the key changes in the tables. Besides the state wise reporting of the data analyses (essentially tables bringing out differences) there is also the presentation of these tables for IAP⁵ districts. These were also presented across the states with IAP i.e. Bihar MP and Orissa, and also for each of the districts (7) covered under the IAP. Statistical analysis is in the form of Chi-square, Mann-Whitney and Binary Logistic Regression have been used.

7. Outcome Parameters Measured:

- i. **Traffic:** No traffic measures – movements of motorized and non-motorized vehicles etc., or changes in the same were used.
- ii. **Access**
 - Time taken for travel to (workplace /field, school, agriculture market, nearby local market / grocery store, nearby town, bus stop, district headquarter, block headquarter, medical /health institution) by several modes (walk, bicycle, auto rickshaw, cycle rickshaw, minibus, two-wheeler, four-wheeler, minibus, train?)
 - Average expenditure on travel in Rs/km to (workplace /field, school, agriculture market, nearby local market / grocery store, nearby town, bus stop, district headquarter, block headquarter, medical /health institution) by several modes (walk, bicycle, auto rickshaw, cycle rickshaw, minibus, two-wheeler, four-wheeler, minibus, train?)
 - Road user satisfaction (23 indicators⁶ covering reliability, transit time, connectivity, user friendliness, for both and non-road and road)
- iii. **Education:** Drop out of children from schools (% of children 6-14 who discontinued school to number of children enrolled in primary school)
- iv. **Health**
 - Medical assistance during child birth (govt doctor, other doctor, govt nurse, other nurse, village lady, friends/relatives, trained daai, no one)

³ Actually connected by unsurfaced roads that were little more than broken mud roads, without a proper surface allowing only four wheeled motorized vehicles besides some animal drawn vehicles to ply.

⁴ For an indicator whose values increase with improvement and equivalently high for an indicator whose values decrease with improvement.

⁵ IAP is “Integrated Action Plan” under which districts affected by left wing extremism were granted 100% support by the Centre for an integrated plan that included building of roads.

⁶ Since the Appendices are given only from 3.1 onwards in the report and all the appendices cited in chapters 2 and 1 are not included in the report and the questionnaire is also not included, we are unable to develop a more specific and comprehensive list.

- Vaccination received by children (Pulse Polio campaign, OPV O at birth, BCG, Polio, DPT, Measles)
- Medical institutions consulted by females (government, private, traditional)
- v. **Employment:** Migration to urban centers (temporary, permanent)
- vi. **Skill Development:** No measures of skill enhancement, training, higher education etc. used
- vii. **Agriculture**
 - Average area cultivated (paddy, wheat, arhar, gram,cotton, moong, vegetable, horse gram, etc)
 - Average yield qtls/acre (paddy, wheat, arhar, gram,cotton, moong, vegetable, horse gram, etc)
 - Farm gate price Rs/qtl (paddy, wheat, arhar, gram,cotton, moong, vegetable, horse gram, etc)

8. Key Takeaways:

As expected there is statistically significant impact of the PMGSY when all these measures are considered and when even some of them are taken in isolation. Agriculture, income and access measures show up most sharply and the findings are as per expectation broadly. Even in the IAP districts the findings are as expected. The type 1 Habitations show improvement over time and both type 1 but especially type 3 show statistically significantly better performance over type 2.

9. Limitations:

- The study is rich in data. However, the analysis is rudimentary. It merely establishes change before and after, and between the treated and untreated variable by variable to show that there has been impact. Questions relating where the impact has been more – for instance among poorer or relatively less poor, or those nearer to a district headquarter, or those with earlier poorer access in relation to others, which could have been carried out in a multivariate context have not been carried out. Also the occupational types, and income which could have been used as characteristics over which the impact could have been brought out have not been used. The only exception is one binary logistic on “boys’ schooling” regression brings out the significance of all-weather connectivity.
- Caste is entirely missing in both the data and in the analysis. Caste is a very statistically significant aspect of the rural economy and society and is the most important determining aspect in social impact of government schemes and of infrastructure.
- Above all the study has only tables bringing back the information in the questionnaire by state and district of the change and levels. Summarizing and condensing approaches including the many multivariate analysis is hardly there. As such a picture of the impact and how they arise is not there, nor is there an understanding of the influence of the control variables. Caste could have been an important control as also income and agro-climatic categories.
- The data though is most likely amenable to further analysis.

2.5 Report on Impact of PMGSY Roads on Accessibility in Rural Areas

1. **Publication Year:** March 2016
2. **Period of Study:** 2015-2016
3. **Commissioned by:** NRRDA/MoRD, GoI
4. **Executed by:** Birla Institute of Technology & Science (Prof Ashoke Kumar Sarkar and Prof Ajit Pratap Singh, Department of Civil Engineering)

5. Objective of the Study:

“This study intends to develop a methodology to quantify accessibility at regional level to all-weather roads and at a Habitational level to health care by which inaccessible areas can be identified and appropriate measures can be taken in terms of improving road network and setting up of new health care centers to improve the overall health care facilities in the area. The rural people need to travel to various facilities to meet their needs and health care and school are two of them. Methods have been developed to quantify accessibility to health and school sectors. Moreover, the impact of PMGSY roads on overall accessibility at regional level and Habitational level access to health and schools has been quantified.

1. Determine accessibility indices (using both Rural Access Index (RAI) and PMGSY guidelines) with and without the PMGSY roads on GIS platform in five selected districts in Rajasthan having varying density of population. The districts would be selected in consultation with NRRDA and PWD Rajasthan.
2. Develop a technique to determine the accessibility to activities which will include travel characteristics and quality of service.
3. Determine accessibility with and without PMGSY roads to two basic needs, namely education and health in a few selected villages in the study areas.

The work has been divided into two parts. The first part deals with the determination of accessibility indices using International Development Association (IDA) and PMGSY guidelines. The second part is to develop a technique to quantify accessibility to health and education.”

6. Methodology:

The study focused on five districts in Rajasthan: Alwar, Jhunjhunu, Tonk, Churu and Bikaner in decreasing order of population density. A total of 40 blocks were studied, distributed as 14, 8, 6, 6, and 6 across the five districts. Among the selected blocks, population densities varied from 638 to 71.

The study measured the improvement in rural accessibility using a before after approach, based on digitized maps (including the road network, location of Habitation with population) and the ArcGIS software. The study further attempted to bring out a measure of ‘access’ to health care and education using a combination of distance and quality of the facility. Finally, the study examined one district (Tonk) in detail to assess the road length that would be required not just in connecting all Habitations as per PMGSY, but to ensure access to key facilities within an acceptable distance norm.

7. Outcome Parameters Measured:

i. RAI

Two measures were considered: percentage of population living within 2 and 0.5 km of all-weather roads, as proposed by IDA and PMGSY respectively. The range of increase in population covered due to PMGSY roads was between 5.1% to 15.9% as per IDA and 13.5% to 19.1% as per PMGSY. The average population covered as per PMGSY was 60.5%.

ii. Access to Health Care

Here the access to community health centres (CHC) was considered, this being the first referral unit of the rural health care system rather than sub centre or the PHC. The sub centre or the PHC was present in most villages, though may not be functioning as per standards. Most rural individuals travelled to the CHC. The indicator of access used was based on a fuzzy set logic including the perceived quality of service at the CHC.

iii. Access to Education

Here the access to secondary education at high schools was considered, rather than elementary education at primary schools. The primary school was present in most villages, while access to secondary education was a challenge. The indicator of access used was based on a fuzzy set logic including the perceived quality of service at the high school.

8. Key Takeaways:

- There was a perceptible increase in RAI, as given above, due to the PMGSY. ‘Quantified’ measures were generated for access to health care and education including the perception of quality. The study concludes that the quality of essential facilities also needs attention for proper delivery of services to the rural citizens.
- Rather than just population based access, the study came up with a need based access (based on ‘informal’ surveys and discussions). The acceptable distances to facilities were proposed as (i) CHC: 8 km (ii) primary school: 5 km (iii) middle school: 8 km (iv) high school: 10 km and (v) panchayat headquarters: 15 km. As per this, using a GIS platform and existing facility locations in Tonk district, the total road length for connecting all Habitations of 500 and above would be 1174 km. However, as per the PMGSY criterion, for the remaining Habitations, 882 km would suffice.

9. Limitations:

The study has tended to focus more on certain mathematically sophisticated indicators and methodology like Impedance function, Fuzzy logic etc. The results from such methodology have not been sufficiently interpreted for practical decision making.

2.6 Rural Road Development in India: An assessment of distribution of PMGSY Project Benefits in Three States by Gender and Ascribed Social Groups

1. Publication Year: June 12, 2014

2. Period of Study: 2013

3. Commissioned by: WB, South Asia Sustainable Development Unit

4. Executed by: WB, South Asia Sustainable Development Unit

5. Objective of the Study:

- What is the impact of PMGSYs impact on villagers employment and occupational choices?
- What are the income impact arising out of the shifts?
- Do such shifts vary across social groups (women, SC, ST, etc.)?
- What are the other complementary or enabling factors that enable or prevent the weaker groups from accessing and exploiting the opportunities?
- What are the more promising policy and programmatic alternatives that could shift the benefits towards these disadvantaged groups?
- What should the praxis and policy be to achieve the same?

6. Methodology:

Specially designed field survey of villages in Jharkhand, Rajasthan and HP in 2013 was done. Two groups of villages - a treated (PMGSY road in 2010) and an untreated (No all whether connection at all) were taken. The survey was based on FGD. 66 Habitations were covered by village information, 1050 HH heads were interviewed and supplementary information was provided by women of these HHs. 256 Focus Group Discussions were held.

7. Outcome Parameters Measured:

The study was limited to income and related outcomes and how these work through factors complementary to roads. The original report which would have contained the schedule is not there in the report (original main report is not available in the public domain).

8. Key Takeaways:

There were observable benefits in terms of income and opportunities though there were statistically significant differences between men and women in their response. Ditto with caste though here the STs and the other castes seemed to have benefitted the most.

9. Limitations:

Mixed method with the focus group driving the insights. There is little presentation of the statistical data.

2.7 Summary of Studies

There is no doubt that the PMGSY has had statistically significant impact not only in access but also on health, education, livelihood and employment and in agriculture as well. There are several pathways to the impact of the PMGSY. One possibility which the studies have not considered but have admitted to as a possibility is due to the employment opportunities created by the very construction of the road especially of the shoulders.

Much of the impact has been through the improvement in access and in the reduction of travel time which have (1) brought down the difference between farm gate and mandi prices (2) allowed people to access better opportunities in non-farm employment especially in nearby small and large urban and semi urban places (3) access medical and services, (4) attend school and education better.

Most of the studies establish the fact of the impact and suggest the pathways but do not work out the same. Some of the studies that ask the question of impact differences across socio-economic and gender categories do find impact across most groups even when there are in certain cases differential impacts.

The conjunctive factors or the enabling factors (some of which in turn could be engendered by the existence of all-weather roads) are important and their impact would also be necessary to capture.

Chapter 3. Objectives of the Study

3.1 Background

With the perspective that rural roads are a critical infrastructure to improve rural livelihood, and alleviate poverty, the World Bank has partnered with the GoI for supporting Pradhan Mantri Gram Sadak Yojana (PMGSY). In the first phase, the Bank's Rural Road Project I (RRP I) was implemented in select districts of Jharkhand, Himachal Pradesh, Rajasthan and Uttar Pradesh. RRP I was approved for 2004-2012 with an outlay of \$400 million. The second phase RRP II (2010-2015) focused on providing all-weather roads to villages in eight states. These include the low income states of Bihar, Jharkhand, Rajasthan and Uttar Pradesh, and, the special category upland states of Himachal Pradesh, Meghalaya and Uttarakhand and Punjab (<http://www.worldbank.org/en/country/india/brief/rural-roads>, accessed on July 28, 2016) as per the PMGSY guidelines.

The current study focuses on the eight RRP II states.

3.2 Objectives

The objectives of the study are:

- i. To develop a simple and practical, yet robust standardized outcome monitoring system for PMGSY which could be used regularly and is capable of being scaled up.
- ii. To test this system in selected states through the conduct of limited period surveys to ascertain the impact of the program in these states.
- iii. To embed this monitoring system within a broader framework for poverty alleviation as part of the GoI's 12th Five Year Plan (2012-17).
- iv. In specific context of poverty alleviation to study the impact on agriculture.*
- v. To design the monitoring system in a way that it enables the user to develop recommendations that could be used to modify the program suitably.

*We are making this a part of main study, rather than as an additional study based on our discussions with NRRDA held on June 24, 2016 at New Delhi.

Chapter 4. Methodology of the Study

4.1 Design of the Study

In order to formulate the outcomes/goals and accordingly develop a list of possible indicators that could be used to monitor the outcomes of the program along the economic, employment and social dimensions, we had FGD with officials of the WB, NRRDA, selected SRRDAs, villagers, opinion leaders, women, specified groups such as women and SC/ST. We also analyzed the current reports used for monitoring. In the design of the indicators, the availability of robust data to measure these indicators was a key factor that was taken into account. The analysis from prior studies was also taken into account.

The data collection methodology to assess the socio-economic benefits of roads was a survey. Two kinds of instruments were used: (i) individual household (HH) rural citizens and key opinion makers in the habitations and (ii) habitation level characteristics.

Based on the above, we tested the data collection methodology in selected states in mutual consultation with the Bank, and supervised collection of data in these states through limited period surveys. The collection of data was carried out by a different consulting firm under our guidance and supervision. The field work of the team and the interviews have resulted in additional inputs in the above. The details of the field visits are provided in Appendix 5.

Findings from the impact evaluation exercise in these states would be fed into a Monitoring and Evaluation (M&E) database in MS Excel, after a workshop with the NRRDA and the Bank. This would in turn provide inputs to revise the outcome monitoring system.

4.2 Sampling Framework

We conducted a pilot study October 14 to 16, 2016 in two Habitations in Kavarjiya, Paliganj block, Patna district. The pilot study covered FGD with key opinion makers such as Sarpanch, teachers, Panchayat committee and health staff. The pre-designed questionnaire was also filled up at the individual level. The study covered:

- i. At least 2 agricultural HHs were covered.
- ii. At least 2 HHs as per the social group (i.e. SC, ST) or 30% of the respondents from the village were covered as per this.
- iii. One HH was economically good.
- iv. One HH was economically backward.
- v. At least 2 HHs that were economically backward but not be socially backward strata were covered.
- vi. At least 2 HHs that have benefitted from the road connectivity (i.e. they have people travelling for work dally and using the PMGSY road).
- vii. At least 2 interviews from women or girl of the HH between age group of 15 and 35.

Based on our experience and field visits conducted from July 25, 2016 to September 20, 2016, NRRDA organized a workshop in New Delhi on November 7, 2016. The audience was the NRRDA, World Bank, SRRDAs of study states, Data Collection Organizations and some user ministers. The objective was to share our initial learnings, proposed framework and seek

feedback. The details of the workshop are provided in Appendix 5. Based on the outcomes of the workshop, we modified the questionnaire.

A multistage sampling process was taken up. The samples for the Habitations questionnaire was based roughly on the number of Habitations in the state and the HH sample was roughly proportional to the population with due increase when the population of the Habitation is diverse across caste groups. In taking up the Habitation within a state, further stratification based on agro-climate and geography, distance to large urban centers, and the characteristics of the embedding road network (one way all weather, two or multiple all weather connectivity) was considered once the pilot study was carried out. The modus operandi to select the HHs once the Habitation was random. Data collection of opinion leaders, key personnel (such as school teachers) was done at the Habitation/gram panchayat level.

Table 4.1 gives the proposed first cut sample size which we started with, based on the further considerations of Agro-Climatic Zone and geography, distance to urban centres, and road characteristics. The number of schedules per Habitation was a minimum of 5. The number of Habitations in Himachal Pradesh and Jharkhand were adjusted to reflect this as well. All multiplication factors to assess and quantify overall impact for the state as whole were developed for this study.

Table 4.1: Sample Size

1	2	3	4	5	6	7	8	9	10
SNo	State	Rural Population (Nos)	Districts (Nos)	Villages (Nos)	Rural Habitations (Nos)	Share of Rural Population (%)	Share of Rural Habitations (%)	Sample Size based on Rural Population (Nos)	Sample Size based on Rural Habitations (Nos)
1	Bihar	920,75,028	38	44,874	1,07,642	26	15	904	74
2	Himachal Pradesh	61,67,805	12	20,759	53,201	2	7	61	37
3	Jharkhand	250,36,946	24	32,394	1,19,191	7	16	246	82
4	Meghalaya	23,68,971	7	6839	9326	1	1	23	6
5	Punjab	173,16,800	20	12,875	15,170	5	2	170	10
6	Rajasthan	515,40,236	33	45,028	1,21,133	14	17	506	84
7	Uttar Pradesh	1,551,11,022	71	1,07,776	2,60,110	43	36	1522	179
8	Uttarakhand	70,25,583	13	16,933	39,142	2	5	69	27
	Total	3,566,42,391	218	2,87,478	7,24,915	100	100	3500	500

(Source: Column 1-6, Census of India, 2011, Ministry of Home Affairs, GoI, accessed in June, 2016, Column 7-10, calculated for sample size)

4.3 Questionnaire Strategy

We give below the levels at which the questionnaires were administered. We also identify key representative indicators. These were finalized based on relevance and availability as assessed in the pilot study.

At the Habitation level, the questionnaire covered the following:

- i. Identifiers – name, location etc.
- ii. Demographic – population as enumerated and available in the 2011 Census – Village Census; caste and occupation as in Census and enumerated.
- iii. Assets in Habitations – Core activities – cropping, animal husbandry, other non-farm activities including mining, industry.
- iv. Geographical characteristics – upland, plain, near river, dry area; land usage pattern.
- v. Embedding of road network – single PMGSY type, other.
- vi. Distances to various important facilities and locations (Post office, Police, Railway Station, road junction, State Highways, nearby factory).
- vii. Enumerators assessment of time taken to reach village from an appropriate point – nearest town with a population of over 1 lakh, 50,000 and 10,000 respectively.
- viii. Existence of various services and schools, other public amenities like water, milk collection center etc.
- ix. Irrigated land, unirrigated land, access to commons, and other natural resources.
- x. Administrative arrangement own PRI/ shared PRI.
- xi. Number of Below Poverty Line (BPL) Card holding families.

Besides these, actual impact as felt by elders at the Habitation/village/gram panchayat collectively were being elicited covering impact in terms of:

- i. Access
- ii. Time and cost
- iii. Traffic, trips and movement
- iv. Safety in travel
- v. Type of road (including possible damage of PMGSY)
- vi. Traffic paths
- vii. Economic activity
 - a. Agriculture
 - b. Horticulture
 - c. Animal husbandry
 - d. Mining
 - e. Services
- viii. Health
- ix. Education
- x. Assets ownership
- xi. Motor vehicle ownership and purchases
- xii. Construction
- xiii. Migration (in and out and temporary and permanent, settlement by urban HHs, farm houses)
- xiv. Remittances
- xv. Interface with government
- xvi. Reach of government programs

- xvii. Visits by higher officials
- xviii. Crime and its handling by police
- xix. Specific suggestions to overcome the current problems
 - a. Points / locations needing maintenance
 - b. Problem areas such as water logging, heavy damage points
 - c. Unsafe sections
 - d. Design and alignment suggestions

At the HH level, the questionnaire covered:

1. Identifiers
2. Socio economic groupings on income, education, caste, occupation of head or effective head.
3. BPL card holding
4. Beneficiary under any government scheme

Detailed coverage of:

- i. Access
- ii. Time and cost
- iii. Traffic, trips and movement
- iv. Safety in travel
- v. Type of roads
- vi. Economic activity
 - a. Agriculture and horticulture: transport time, cost of input and finished product, level of farm mechanization, variation in cropping pattern, occupational diversity and change in patterns of agricultural land holdings, dissemination of agricultural knowledge and accessing storage/warehouse.
 - b. Animal husbandry
 - c. Mining
 - d. Services
- vii. Health
 - a. Disease
 - b. Treatment
 - c. Visits to hospitals
- viii. Education
- ix. Assets ownership
 - x. Motor vehicle ownership and purchases
 - xi. Construction
 - xii. Migration (in and out and temporary and permanent)
 - xiii. Remittances
- xiv. Access to government programs.
- xv. Access to administration – revenue, collector, registrar’s office, etc.
- xvi. Reach of extension services of government

4.4 Embedding the Monitoring System

The most suitable of the measures from the many that were used in this study are recommended to NRRDA for regular monitoring. It is expected that that focus would be much more on the access, time and type of road and traffic measures since that would provide feedback to improve the quality and enhance the public value of the roads by removing bottlenecks, improving connections, etc. We also expected that these measures are easier to elicit. As time passes and

many of the “one-shot” impacts happen, it would be important to continue to monitor the measures that elicit the possible deterioration and decline in access more directly. As impacts can decline significantly and some impacts could be reversed if the roads are not maintained adequately and the further up connectivity to urban places and towns and to state highways are problematic.

Embedding the Outcome Monitoring System within a Broader Framework for Poverty Alleviation:

We have attempted to ensure that the revised outcome monitoring system developed above is aligned with the broader framework for poverty alleviation set out in Government of India’s 12th Five Year Plan (2012-17). The outcome monitoring system would confirm existing policy directions and/or suggest changes in policies required so that it could be used as an implementation support tool for the existing program as well as provide direction and guidance for future phases of the program. The core way to ensure this would be to cover the weaker sections (low income and SC and ST HHs) and in the final analysis identify the final indicators which are most sensitive to improvements in their income and well-being.

Chapter 5. Basic Data Analysis for the Monitoring and Evaluation Framework

The objective of the following analysis is to identify a robust set of indicators for the monitoring and evaluation database of the PMGSY road. The objective is also to identify indicators, which are able to capture the socio-economic impact of the road and are scalable in nature. The analysis has been performed both based on states and Agro-Climatic Zones. This is in addition to inclusion of economic and other indicators on agriculture.

5.1 Developing the Outcome Monitoring System

The primary benefit of any road is connectivity and the consequent speed gains and time saved/reduction. There are second order or resulting benefits such as ability to save human lives, better educational outcomes, better price realizations to agricultural produce, better law and order maintenance in the village, among innumerable other benefits. However, the latter, is categorized under second order benefits are impacted by several other parameters such as availability of doctors and medicines, quality of schools, Minimum Support Price (MSP), availability of policing etc. respectively. These second order benefits arise because access improves – through reduction in time involved in access, convenience, and cost of access. The relationship between access and speed and time involved in journey is therefore important to understand.

The friction of distance and movement, when it reduces, does so by the overall cost falling, given the existing level of interaction. This is the first level impact on the economy and society. The reduced “cost”⁷ in turn brings more commodities and services into the interaction set by expanding the “range” of a good or a service⁸, resulting in specialisation, the emergence of new intermediate commodities and bringing in scale and scope economies. These impacts are over a longer period, and there is a co-evolution of the development of speedy transport networks, along with economic activity.⁹ Expanding trade (interactions) which tends to grow faster than economic activity over a very long period, and especially over the period of economic transformation, in turn demands the further development of networks. Transport networks especially road networks, being subject to lack of excludability, have been principally supplied by states, despite the emergence of PPPs and private participation. The performance therefore – both in extent and service levels – being dependent upon the state has no ready remedy if the state is weak in the public service delivery, entry by competing players being not possible. This is unlike in the case of products that are appropriable. Therefore road networks as also much of the transport networks could become a constraint to development, even when other factors are in place. Typically though since state capacity and economic performance being intimately

⁷ To be understood in terms of both cost and time reduction. In valuable commodities, perishables, in the movement of people, it is the reduction in time (through higher speeds) which could actually increase the tonne-km or passenger-km cost. The overall logistic cost would be a better measure, but even that does not take into account the feasibilities that a newer faster mode brings which was non-existent earlier.

⁸ “Range” is used here in the sense that spatial science (economic geography) would use. See Chapter 2 “A Spatial Organisation of Economic Activities – A Simplified Model”, in Lloyd, Peter and Peter Dicken (1977). *Location in Space: Theoretical Approach to Economic Geography*. Harper and Row. London.

⁹ The industrial revolution itself must be seen as having essentially made possible (whatever the other factors), by the development of canal networks and international trade made possible by the developments in navigation. The industrial revolution became irreversible with the rise of the railways, which articulated the interior of economies in a way that was entirely new.

related in late industrialisation¹⁰, successful countries have been characterised by the infrastructure sectors especially transport being developed along with or ahead of the more market oriented sectors. In India, infrastructural constraints and especially of the transport sector has been a major constraint in development, and their relaxation would have major economic and social impacts.¹¹

It is useful to conceptualise the interaction between any two regions/spatial agglomerations/cities in terms of the gravity model which would lay out the interaction (e.g. people movement, trade, telephone calls) to be proportional to the product of the relevant measures (population, economic activity, population respectively) of potential for that activity of the two regions etc in question, and inversely to a measure of the friction of interaction (e.g. distance, time or cost –more typically of the function of all these that constitutes the logistic value subtraction from the economic value created in the interaction)¹². Thus we may write the movement/trade/interaction $I_{i,j}$ between the entities i and j as:

$$I_{i,j} = \frac{k \cdot Q_i \cdot Q_j}{R_{i,j}^\theta} \quad \text{Eq (1)}$$

Where $I_{i,j}$ is the interaction, and the Q_i is a measure of the potential (GDP, Population etc), and $R_{i,j}^\theta$ is the friction of interaction. Typically in people movement or in trade, R would be a distance measure (when the underlying speeds and costs of movement are constant), and θ is a constant for the interaction in question which would of course not be the same for another kind of interaction. Then the improvement in interaction (which may be considered as being monotonic) with rise in the value of the interaction (GDP, social value etc) with a change in R can be written as:

$$\Delta I_{i,j} = (\tilde{Q}_i + \tilde{Q}_j - \theta \cdot \tilde{R}_{i,j}) \cdot I_{i,j} \quad \text{Eq(2)}$$

Where the terms with accent are proportional changes. Typically, both Q s change. When there is an improvement in access, $R_{i,j}$ is changing due to reduction in cost or reduction in travel time, so that the total change observed is due to changes in all the variables. Since the programme involved connecting habitats hitherto served very poorly there would be the additional second order effects which come from changes in Q spurred by changes in R . However the same cannot be attributed to changes in R alone. Thus a proportional reduction in time taken for interaction is equivalent to an increase in speed, since the underlying distance

¹⁰ See for instance National Transport Development Policy Committee (2014), *India Transport Report – Moving India to 2032*, Routledge, New Delhi

¹¹ Thus the NHDP was a major move forward and the public and social value that it created has acted as a spur to high growth in India –acting not only from the demand side, but from the supply as the road conditions improved over many parts of the country. Multi-axle trucks which were made possible by the better quality of the roads now dominate the roads, and truck rates have risen much slower than inflation rates, and markets across the country have begun to integrate.

A programme with origins in the same group (IDFC, PMO and the MOST) is the PMGSY which has visibly led to roads connecting small habitats that has greatly improved the last mile. Indeed in many cases (especially in the smaller and more remote habitats) there would be a qualitative change in habitat

¹² The Gravity Model is at the core of all modeling of interactions, and without that there is very little that economic theories explain. This power of the gravity model is well recognized and used not only by spatial theorists but also by economists in the analysis of interactions of a wide variety.

would not change (i.e. $\tilde{R}_{i,j} = -\tilde{S}_{i,j}$) implies that the change in interaction which is monotonic with the change in activity or benefit is

$$\Delta I_{i,j} = \theta \cdot \tilde{S}_{i,j} \cdot I_{i,j} \quad \text{Eq (3)}$$

So that the proportional changes $\tilde{S}_{i,j}$ in the speed of movement becomes the measure of the gain in interaction brought about in the first instance due to transport infrastructure improvement. This would be the marginal effect. Over the longer period, through changes in the work process, production process greater changes are possible which would only enhance the first order effect.

While conceptually the change is to be expected, the extent of the same would depend upon the size of the entities interacting in question which are varying. Gains in speed of interaction plateau off¹³, so that the second order effects take over to give rise to more sustained gains. These are through a slower and more interactive process which we may recognise as the co-evolution of specialisation for value increases as interaction speeds rise.

From this it is easily seen that the value a unit (person, a firm that is being connected) would derive from improved access would depend upon the other entity in question to which the connection is considered. Thus if a person derived a certain value through his interactions with a market that is larger than in his interactions with a government office then the impact of the reduction in the friction of distance (time gain) would be more in the latter.

Speeds and access are related. We say that a village has access to a school when the time to reach the school becomes “feasible”. Prices, distance, costs and values are hidden in the notion of access, which need recognition. Imagine the only option possible was for the children to reach the school walking a distance of 8 km which would take them say an hour and two and half hours. That would mean a walking time of nearly five hours which would keep out most children, so that the value of education is denied to them. But some children may well be still able to pursue school making the effort of cycling, or being dropped by their parents who could cycle. One way a public authority could attempt to improve the situation is to take the school closer to the village where the children stay. If they can do so without loss of quality and richness of experience¹⁴, then that would be one of the processes of advancement. Another approach which does not per se exclude this one, is to improve the connection such that motorised modes become possible so that either cycles, bus or para transport, or personal motorised transport (parents dropping children) becomes possible. This would be the case at a travel time of around 30 minutes. Then few children would keep off from the school so that we can now say that there is access when there was no access in the original state of affairs.

If we consider a situation where the distance to a service is given, then the access is a function of cost of travel conditional on income (approximate cost of travel/value of the gain due to access, which is proportional to income of the person/HH), provided the times are feasible. Non existence of roads (or of bridges across rivers) could make for infeasibility in specific cases. However in the case under discussion there is hardly ever a situation of non-existence of roads. The problem is of the road quality which in the extreme case may rule out motorised

¹³The appearance of innovations like rail, high speed rail, motorized transport in rural areas has led to vast reductions in the friction of distance.

¹⁴Often very difficult and involving much cost since then schools being denied the scale and scope economies have to incur much cost to maintain the same level of service.

transport, or when poor quality may allow jeeps, and when somewhat better, motor cycles but not regular buses or cars and when good, all modes.

Thus access has to be thought of as depending upon the speed (time taken given distance) in a generalised case where the focus is not on the distance, since different typical distances are possible when different services/ products¹⁵ are being considered in the abstract. The speed improvement comes in not only through changes in modes as well, since a certain road quality is necessary for motorised modes. The situation in rural India is thought of better in terms of a range of “motorised” modes from tractors (used when the roads are barely motorable) to jeeps to motor cycles to cars, rather than with as a binary of being motorable or otherwise, which in an abstract consideration determines the speed of movement possible.¹⁶ The above is shown in Figure 5.1.1, which graphically depicts the relationship between percentage of people being able to access a service vis-à-vis the speed of travel/ease of access including due to mode change.

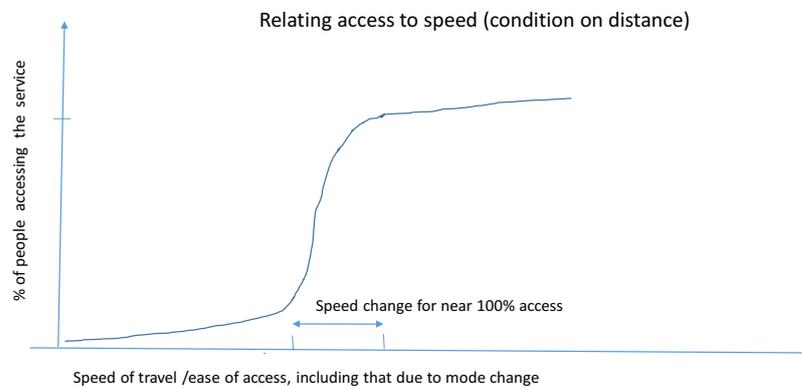


Figure 5.1.1: Relating access to speed/ease of access

When, as in the PMGSY, a near all weather motorable road with a decent surface is laid, the speed possible could increase from S1 to S2 or more (both due to the speed of the vehicle increasing and new “modes” such as the movement from tractors to cars or two wheelers, or the movement from animal carts to cars being possible) creates the access. The access being a 0-1 measure cannot be used to monitor the PMGSY since that would only imply either that a habitat hitherto without a good road now has a good one (which anyway is another way of saying that a connection has been provided) or a habitat whose connection has been severed by a major damage to the road. Speed improvements (travel time improvements) would though bring out the originating impact in a direct and continuous way which can be used as a monitorable measure. Similar measures would be travel times taken. These though would have to be specific to the economic activity or service. In short, access is related to “speed of travel” or equivalently to “time taken, conditional on distance” in a logistic way.

¹⁵Wholesale markets, retails petty purchase items, clothing and fashion, government services of a local kind, government services of a higher kind, college, school, non-manual labour (access to larger urban centres), etc.

¹⁶ India having the largest population of tractors in the world far out of proportion to its agricultural output is no doubt due to the use of tractors in the situation of poorly developed and designed road networks in rural areas.

Thus for higher education the service point may be a “good” school located some 10 kms away from the habitat, which would imply that S2 corresponds to about 10 minutes by the fast mode of transport car, giving a travel time of around 12 minutes (10+2). S1 may correspond to a walkable option alone of a travel speed of 4 km per hour giving a time of travel of nearly 2.5 hours. At S2 the access is 100% but at S1 (2.30 hrs) the access is very low.

Thus for our study, we have focused on the primary benefits and variables of Speed Gains and Time Saved by type of connectivity. This is based on the framework provided in Chapter 4 and our field visits and meeting with NRRDA, SRRDA, and analysis of prior studies. Since we wanted to capture the influence of PMGSY road, our study has examined both these parameters in the presence of PMGSY and non-PMGSY roads.

By states, for each PMGSY road, the type of road (gravel, jeep able, asphalt and cemented), year of construction, and Agro-Climatic Zones, are factors that influence the speed gain and time saved experienced by the rural citizen. Speed gain and time saved is calculated over two dimensions of access to i) administrative HQ and ii) facilities. Further analysis is done along various poverty indicators at the Habitation level such as SC/ST population, number of families holding BPL cards, and the dominance of agriculture labour as the primary occupation for the village. Figure 5.1.2 depicts the linkages in the framework.

Note: 1. The Speed Gains are represented in relative terms in percentage values.
2. The Time Saved are represented absolute terms in minutes.

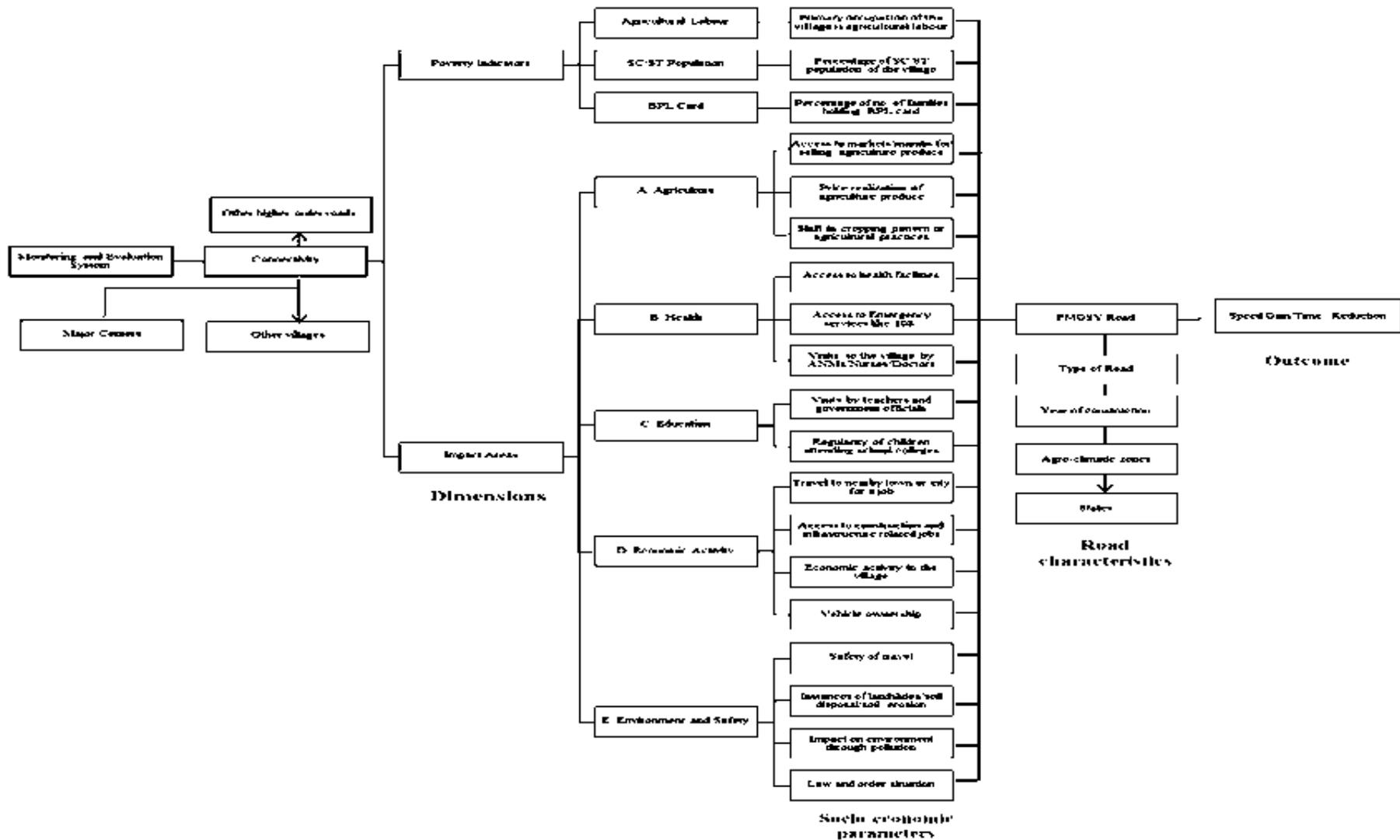


Figure 5.1.2: Framework for Developing the Outcome Monitoring System

5.2 Basic Data Analysis Framework

Data analysis has been done at two levels:

- i. Habitation
- ii. HH

The following flowchart illustrates the sequence which will be used to arrive at the measurable outcome variables.

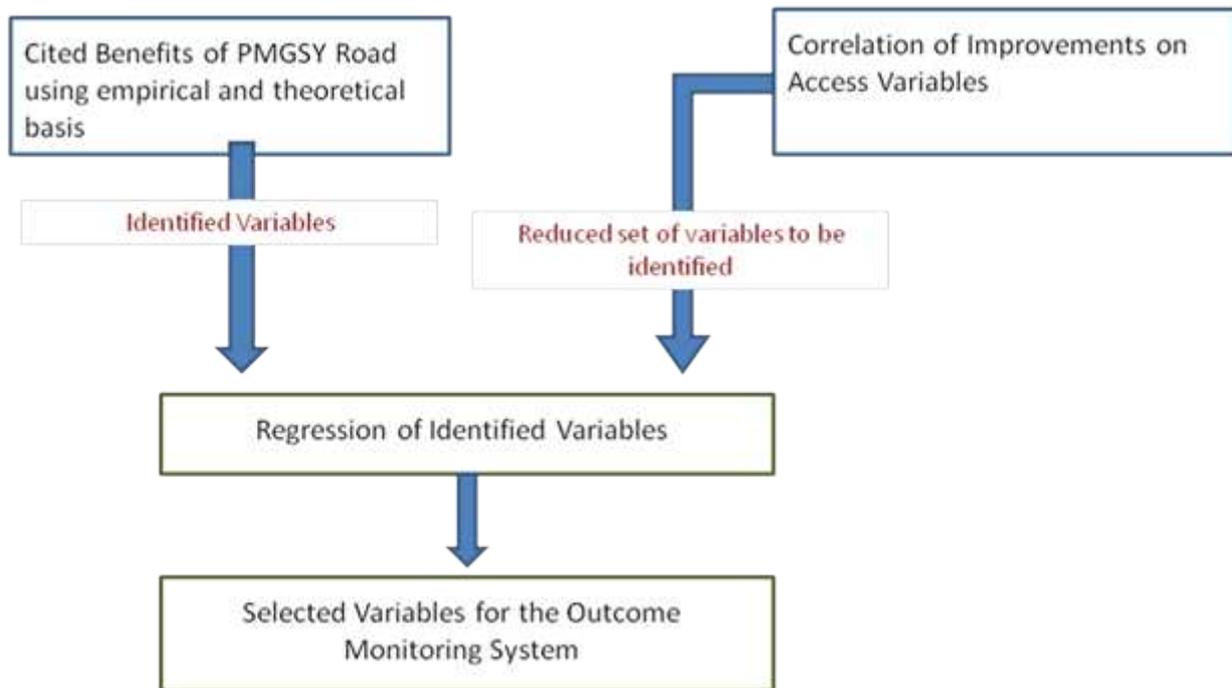


Figure 5.2.1: Sequence of analysis used to arrive at the Measurable Outcome Variables

Datasets

Table 5.2.1 and 5.2.2 below show the Habitations and HHs planned and actually covered by state and Agro-Climatic Zones respectively.

Table 5.2.1: Number of Habitations and HHS Planned, Actually Covered and Included in the Final Dataset by State

Sno	States	Planned to be Covered			Actual Covered		Included in the Final Dataset	
		Habitations	Sample HHs / Habitation	HHs	Habitations	HHs	Habitations	HHs
1	Bihar	55	10	550	55	577	53	569
2	Himachal Pradesh	25	12	300	25	308	23	291
3	Jharkhand	35	14	490	35	502	31	351
4	Meghalaya	20	10	200	20	223	18	220
5	Punjab	15	14	210	18	219	18	198
6	Rajasthan	40	12	480	40	501	40	414
7	Uttar Pradesh	75	14	1050	75	1081	75	947
8	Uttarakhand	25	10	250	262	187	25	24
Total		290	3530	3530	293	3673	282	3177

Table 5.2.2: Number of Habitations and HHs Planned and Included in the Final Dataset by Agro-Climatic Zones

Sno	Agro-Climatic Zones	Planned To be Covered		Included in the Final Dataset	
		Habitations	HHs	Habitations	HHs
1	Plains	160	2074	157	1821
2	Arid	7	84	7	63
3	Undulating Plains	3	42	4	42
4	Hills	65	716	60	699
5	Terai	10	104	10	60
6	Plateau	45	510	44	492
Total		290	3530	282	3177

For both the Habitation and HH datasets, the following framework has been considered:

5.2.I Identifying Monitoring Variables

To identify the monitoring variables, we have used both the theoretical and empirical basis.

5.2.Ia. Perception of Cited Benefits of the PMGSY Roads

We will first look at the perception of benefits for PMGSY roads, as cited by both primary as well as secondary users as an empirical basis for identifying the Monitoring Variables. Based on this analysis and use the theoretical band developed in section 5.1, we will select the Outcome Monitoring Variables.

5.2.Ib. Perception of Improvement in Access Due to the PMGSY Roads

To link the access variables to the variables identified above, we will analyse the perception of improvement in access to different kinds of administrative headquarters and facilities such as health and education, on outcome variables such as improvements in visits by doctors and paramedical staff, attendance in schools, attendance by teachers etc., as well as socio-economic

benefits like improvements in access to mandis, better price realisations, reduced migrations to nearby urban centres etc., and environmental or safety-related benefits. A total of 26 variables were used to capture these, which have been identified on the basis of previous studies, FGDs and our meetings with various stakeholders.

However socio-economic, environmental or safety-related benefit variables are likely to be highly correlated within themselves and hence we would like to perform a set of optimization to make the model more robust and parsimonious.

5.2.Ic. Framework for Optimization of Variables

i. As an exploratory step, we will do the correlation analysis between different perception variables related to access and benefits to facilities and services.

ii. To identify the underlying perceptual constructs, we will use Principal Component Analysis (PCA). It is a data reduction technique to identify underlying constructs from a large number of explanatory variables. PCA technique will help us identify the few perceptual constructs that underlie the various explanatory variables. Since the constructs are fewer than the variables, they are easier to deal with and analyse the data.

iii. To identify the relationship between the independent variables and the outcome/impact (dependent variable), we will use Regression Analysis. Regression analysis will be performed for various scenarios such as (PMGSY Road Present as a dummy variable and all other relevant Speed Gain variables as independent variables and the various perceptions about access variables as dependent variables).

The analysis will be performed for Habitation and HH datasets. Frequencies of Cited Benefits analysis was done only for the Habitation data as we first wanted to determine the monitoring variables, which are applicable for HH.

5.2.II Analysis of the Outcome and Impact by Type of Connectivity and Road Characteristic Variables

In the following, we provide the detailed framework for the above.

The outcome is measured in terms of perception of Speed Gain and Time Saved. The Impact is measured by the perception of improvement in health, education, safety, economic activity and environment/safety. We examine these benefits at the Habitation level by looking at how these have accrued to those having different profiles of SC/ST, BPL card holders and agricultural labourers as a percentage of total population of the habitation.

Outcome Variables:

1. Speed Gain (measured in terms of percentage)
2. Time Saved (measured in terms of absolute values in minutes in Habitation data and percentage in HH data)

Impact Dimensions:

The impact of PMGSY roads has been considered on the following **socio-economic and poverty dimensions**:

1. Socio-economic:

- a. Agriculture
- b. Health
- c. Education
- d. Economic activity
- e. Environment and safety

2. Poverty:

This is in terms of percentage of population in the Habitation.

- a. SC/ST
- b. BPL Card holder
- c. Agricultural labour

Further, we have considered Speed Gains for PMGSY by Type of Connectivity along the following dimensions:

- a. Phase of construction
- b. Type of road
- c. Different roads passing through the same habitation
- d. State
- e. Agro-Climatic Zones
- f. Villages having different ranges of SC/ST Population
- g. Villages having different ranges of BPL Population
- h. Villages having different primary occupation in the village

Road Characteristic Variables:

The PMGSY road characteristics depend upon the Phase of Construction, Type of Road, Agro-Climatic Zones and State.

1. Phase of Construction:

- a. Year lower than or equal to 2000
 - b. 2000-2004
 - c. 2004-2012
 - d. 2012-2017
- (For non-PMGSY roads, this variable is coded as 0)

2. Type of Road:

- a. Gravel Road
- b. Motorable
- c. Asphalt
- d. Cemented

3. Agro-Climatic Zones:

- a. Plains
- b. Arid
- c. Undulating Plains
- d. Hills
- e. Terai
- f. Plateau

4. State:

- a. Bihar
- b. Himachal Pradesh
- c. Jharkhand
- d. Meghalaya
- e. Punjab
- f. Rajasthan
- g. Uttar Pradesh
- h. Uttarakhand

Type of Connectivity:

We have considered the outcome variables over two **Types of Connectivity**. This includes connectivity to other higher order roads/administrative HQ and facilities. Each Type of Connectivity is elaborated as follows:

1. Other Higher Order Roads/Administrative HQ

- a. Taluka HQ
- b. District HQ
- c. State highway

2. Facilities

- a. Markets
- b. Theatre/Mall
- c. Health Centre
- d. School
- e. College
- f. Vocational training centre
- g. Industrial cluster
- h. Mandi/APMC

5.2.III Relative Benefits of PMGSY and Non-PMGSY Roads

We have analyzed the relative benefits of PMGSY and non-PMGSY roads for Speed Gains and Time Saved by Type of Connectivity along States and Agro-Climatic Zones.

5.2.IV Relative Speed Improvements Before and After Construction of PMGSY and Non-PMGSY Roads

To understand the impact of PMGSY, we measured the perception of Speed Gains before and after its construction.

5.2.V Perception of Improvement in Access to Facilities for PMGSY and Non-PMGSY Roads

We have done a comparative analysis of perception of improvement in access to facilities for PMGSY and non-PMGSY roads.

The analysis above is first done for Habitation (I-V). For HH the analysis is done for I, III, IV and V.

5.3 Data Analysis for Habitation

The analysis has been done as per the basic data analysis framework outlined above.

5.3.I Identifying Monitoring Variables

To identify the monitoring variables, we have undertaken the following steps:

5.3.Ia. Perception of Cited Benefits of PMGSY Road

Table 5.3.1 (Appendix 6). represents frequencies of cited benefits by type of connectivity due to the presence of PMGSY road. In each of the cases, the primary benefits i.e. improvement in the ease of reach, reduction in travel time and connectivity are the most cited benefits. The frequencies of benefits for access to Markets, next higher order habitat and village, Taluka HQ, District HQ, State Highway, Health Centre, School, College, Vocational Training Centre, Industrial Cluster, Mandi/APMC are mentioned.

In case of benefits of PMGSY road to reach Markets, the primary benefits i.e. improvement in the ease of reach, reduction in travel time and connectivity account for 46.6%, 21.3%, 26.4% (i.e. a cumulative of 94.3% of the total benefits). One can observe similar cumulative primary benefits of PMGSY road to reach Habitation of higher order, village of higher order, Taluka HQ, District HQ, State Highway at its nearest point, Theatre/Mall, Health Centre, School, College, Vocational Training Centre, Industrial Cluster, Mandi/APMC etc.

The secondary benefits such as increase in business income, development of village, which are dependent on a number of other factors, are less cited however and account for only a meagre percentage of the benefits. This corroborates our initial approach of adopting Speed Gains and Time saved as outcome variables for monitoring and evaluation. We shall use the same for HH data

5.3.Ib. Perception of Improvements in Access due to PMGSY Roads

Table 5.3.2 (Appendix 7) shows the correlations between perceptions of access and other benefit variables/Speed Gain variables. These are highly correlated among each other. The correlations are weak only when primary-level outputs like access to health facilities are correlated with secondary-level effects like shifts in agricultural practices or cropping pattern. The correlation, for instance, in this case is only 0.182 and not statistically significant. The latter is a secondary effect of the presence of PMGSY road and is dependent upon a variety of other factors.

Table 5.3.3 (Appendix 7) shows the correlations of perceptions of access variables with percentage Speed Gain by Type of Connectivity.

The analysis from Table 5.3.2 and 5.3.3 shows that the access variables are highly correlated with each other. The percentage Speed Gains variables are however less correlated with the access variables. This may be because of the following reasons:

- i. PMGSY is only a small portion of the total distance to be travelled for various facilities.
- ii. As observed during the field study, condition of other connected roads even state highways in many cases is worse than the corresponding PMGSY road. The latter are usually in a much better condition.

Hence, while the PMGSY provides for speed gains to access the administrative headquarters or facilities, the gains on PMGSY are overshadowed for reasons cited above.

5.3.Ic. PCA

The results of the PCA for the Habitation dataset are shown in Table 5.3.4. The table shows the two constructs, their components, factor loadings and percentage of variance explained by each construct. These two constructs account for 77.17% and 4.98% variance respectively.

Table 5.3.4: PCA of Perception of Percentage Speed Gain for Access to Administrative Headquarters and Facilities (Habitation)

SNo	Components	Factor Loadings	% of Variance Explained
Construct 1			
1	Access to health facilities	.994	77.17%
2	The cases of HHs which used to migrate temporarily	.951	
3	Visits by our friends and relatives	.951	
4	Visits to the villages by ANMS_Nurses_Doctors	.908	
5	Visits by teachers and government officials	.906	
6	Regularity of children attending colleges located nearby	.881	
7	Safe to use the road after PMGSY road has been built	.848	
8	Number of individuals who travel to a nearby town or city daily jobs	.846	
9	Number of HHs that own a motor vehicle	.834	
10	Availability of Emergency services like 108_Police	.808	
11	Safety of Travel to and from our village	.767	
12	Economic activity in our village	.739	
13	Maintenance cost for motor vehicle	.705	
14	Maintenance of PMGSY road	.699	
15	Traffic from and to our village	.683	
16	Access to markets_mandis for agriculture produce	.648	
Construct 2			
1	Instances of landslides_soil disposal_soil erosion	.991	4.98%
2	Impact on environment through pollution or vehicular movement	.931	

The first construct broadly encompasses access to facilities such as health, agriculture, visits of both government and individual, ownership and maintenance of vehicles, safety, road characteristics, and traffic. The other construct consists of Instances of landslides soil disposition, soil erosion and Impact on environment through pollution of vehicular movement.

The first construct may be labelled as ‘**Aggregate Effect**’ as it is a combination of both direct and indirect effects across facilities, sectors and benefits. The second construct may be labelled as ‘**Environmental Effect**’.

5.3.Id. Regression Analysis

Regressions in Tables a to z given in Appendix 8 represent the relationship of monitoring variables. Access and other variables are used as dependent variables and related speed gain variables as independent variables in the regressions. Regressions were done for both situations: including and excluding PMGSYRoadPresent as an independent variable.

A typical regression equation would look as follows:

$$\text{Access Variable} = \beta_0 + \beta_1 * \text{ASpGainTaluka} + \beta_2 * \text{ASpGainDistrict} + \beta_3 * \text{ASpGainStateHighway} + \varepsilon$$

(excluding the PMGSY Road Present)

$$\text{Access Variable} = \beta_0' + \beta_1' * \text{ASpGainTaluka} + \beta_2' * \text{ASpGainDistrict} + \beta_3' * \text{ASpGainStateHighway} + \beta_4' * \text{PMGSYRoadPresent} + \varepsilon'$$

(including the PMGSY Road Present)

Where, $\beta_0, \beta_1, \beta_2, \beta_3, \varepsilon$ are the constant term and coefficients of ASpGainTaluka, ASpGainDistrict, ASpGainStateHighway variables respectively. Variables ASpGainTaluka, ASpGainDistrict, ASpGainStateHighway are interaction variables of PMGSYRoadPresent and Speed gain to various administrative headquarter or facilities as the name suggests.

For example, in Table a (Appendix 8) for the Access to Health Facilities variable, the regression equation is

$$\text{Access to Health Facilities (RQ30_01)} = \beta_0 + \beta_1 * \text{ASpGainTaluka} + \beta_2 * \text{ASpGainDistrict} + \beta_3 * \text{ASpGainStateHighway} + \beta_4 * \text{ASpGainHealthCentre} + \varepsilon$$

(excluding the PMGSY Road Present)

$$\text{Access to Health Facilities (RQ30_01)} = \beta_0' + \beta_1' * \text{ASpGainTaluka} + \beta_2' * \text{ASpGainDistrict} + \beta_3' * \text{ASpGainStateHighway} + \beta_4' * \text{ASpGainHealthCentre} + \beta_5' * \text{PMGSYRoadPresent} + \varepsilon'$$

(including the PMGSY Road Present)

Table 5.3.5 Summary of Regression Results of Perception of Access and Other Benefit as Dependent Variables and Relevant Speed Gain Variables/ PMGSYRoadPresent (both excluding/including) as Independent Variables (based on Habitation Dataset)

S No	Dependent Variables Perception of Access and Other Benefit Variables	PMGSYRoadPresent Variable excluded			PMGSYRoadPresent included		
		R-Squared	Most significant Speed Gain Variable	Corresponding p-value	R-Squared	Corresponding p-value	p-value for PMGSYRoad Present Variable
1	Access to health facilities	0.32	ASpGainDistrict	0.01*	0.95	0.58	0.00*
2	Visits to the villages by ANMS_Nurses_Doctors	0.34	ASpGainDistrict	0.01*	0.89	0.62	0.00*
3	Availability of Emergency services like 108_Police	0.38	ASpGainTaluka	0.00*	0.94	0.64	0.00*
4	Visits by teachers and government officials	0.42	ASpGainDistrict	0.01*	0.96	0.50	0.00*
5	Visits by our friends and relatives	0.35	ASpGainTaluka	0.02*	0.93	0.62	0.00*
6	Regularity of children attending colleges located nearby	0.39	ASpGainVillage	0.03*	0.96	1.00	0.00*
7	Traffic from and to our village	0.29	ASpGainDistrict	0.00*	0.97	0.52	0.00*
8	Maintenance of PMGSY road	0.21	ASpGainStateHighway	0.07	0.75	0.32	0.00*
9	Safety of Travel to and from our village	0.29	ASpGainDistrict	0.00*	0.92	0.17	0.00*
10	Economic activity in our village	0.79	ASpGainDistrict	0.01*	0.86	1.00	0.00*
11	Access to markets_mandis for agriculture produce	0.90	ASpGainTaluka	0.00*	0.99	1.00	0.00*
12	Access to markets_mandis for animal husbandary_dairy_fishing_poultry	0.87	ASpGainTaluka	0.00*	0.95	1.00	0.00*
13	Price realization of agricultural produce	0.88	ASpGainTaluka	0.00*	0.96	1.00	0.00*
14	Shift in agricultural practices or cropping pattern	0.89	ASpGainTaluka	0.00*	0.97	1.00	0.00*
15	Access to construction and infrastructure related jobs	0.83	ASpGainTaluka	0.00*	0.95	1.00	0.00*
16	Number of individuals who travel to a nearby town or city daily jobs	0.85	ASpGainTaluka	0.00*	0.98	1.00	0.00*
17	Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	0.87	ASpGainTaluka	0.00*	0.95	1.00	0.00*
18	Number of HHs that own a motor vehicle	0.88	ASpGainTaluka	0.00*	0.96	1.00	0.00*
19	Maintenance cost for motor vehicle	0.96	ASpGainTaluka	0.00*	0.96	0.09	0.00*
20	The cases of HHs which used to migrate temporarily	0.64	ASpGainTaluka	0.00*	0.85	0.37	0.00*
21	Instances of landslides_soil disposal_soil erosion	0.29	ASpGainDistrict	0.00*	0.70	0.23	0.00*
22	Impact on environment through pollution of vehicular movement	0.29	ASpGainDistrict	0.01*	0.75	0.48	0.00*
23	Safe to use the after PMGSY road has been built	0.26	ASpGainDistrict	0.00*	0.88	0.59	0.00*
24	Law and order situation_crime rate in your and neighbouring village	0.28	ASpGainDistrict	0.00*	0.84	0.54	0.00*
25	Connectivity to nearby villages	0.60	ASpGainDistrict	0.00*	0.97	1.00	0.00*
26	Connectivity to nearby major centre	0.91	ASpGainTaluka	0.00*	0.99	1.00	0.00*

*Statistically significant at 0.05 level

The results in Appendix 8. show that the explanatory power of the model increases significantly by introducing PMGSYRoadPresent as an independent variable as shown by the R-squared values in Table a to z (Appendix 8). The effect of other variables turns to be statistically not significant as shown by the respective t-statistics values. For example, in Table a (Appendix 8) when the PMGSYRoadPresent variable is excluded from the model the R-squared valued is 0.318. It increases to 0.949 by inclusion of the variable in the model. The t-statistics is 0.006 and statistically significant for ASpGainDistrict variable when PMGSYRoadPresent is excluded. As soon as it gets included, the t-statistics for ASpGainDistrict variable becomes statistically significant and the t-statistics for PMGSYRoadPresent only remains statistically significant.

Thus, it can be inferred that presence of PMGSY is a major explanation for speed gain. Moreover, as shown by the results in Table 5.3.4 and 5.3.5, it may be further concluded that speed gains serve as major explanatory variables for perception in improvement of access. Similar analysis was performed for the time saved variables (Refer Appendix 9). The results were similar as expected (Table 5.3.6).

Table 5.3.6 Summary of Regression Results of Perception of Access and Other Benefit as Dependent Variables and Relevant Time Saved Variables/ PMGSYRoadPresent (both excluding/including) as Independent Variables (based on Habitation Dataset)

SNo	Dependent Variables Perception of Access and Other Benefit Variables	PMGSYRoadPresent Variable excluded			PMGSYRoadPresent included		
		R-Squared	Most Significant Time Saved Variable	Corresponding p-value	R-Squared	Corresponding p-value	p-value for PMGSYRoadPresent Variable
1	Access to health facilities	0.31	ATimeSavedDistrict	0.00*	0.95	0.91	0.00*
2	Visits to the villages by ANMS_Nurses_Doctors	0.31	ATimeSavedDistrict	0.00*	0.89	0.87	0.00*
3	Availability of Emergency services like 108_Police	0.33	ATimeSavedDistrict	0.00*	0.94	0.65	0.00*
4	Visits by teachers and government officials	0.27	ATimeSavedDistrict	0.00*	0.93	0.27	0.00*
5	Visits by our friends and relatives	0.28	ATimeSavedDistrict	0.00*	0.93	0.81	0.00*
6	Regularity of children attending colleges located nearby	0.38	ATimeSavedDistrict	0.09	0.95	0.92	0.00*
7	Traffic from and to our village	0.29	ATimeSavedDistrict	0.00*	0.98	0.66	0.00*
8	Maintenance of PMGSY road	0.17	ATimeSavedDistrict	0.03*	0.75	0.04*	0.00*
9	Safety of Travel to and from our village	0.28	ATimeSavedDistrict	0.00*	0.92	0.50	0.00*
10	Economic activity in our village	0.27	ATimeSavedDistrict	0.00*	0.92	0.91	0.00*
11	Access to markets_mandis for agriculture produce	0.41	ATimeSavedMandi	0.01*	0.97	0.77	0.00*
12	Access to markets_mandis for animal husbandary_dairy_fishing_poultry	0.39	ATimeSavedMandi	0.00*	0.96	0.92	0.00*
13	Price realization of agricultural produce	0.41	ATimeSavedMandi	0.00*	0.99	1.00	0.00*
14	Shift in agricultural practices or cropping pattern	0.85	ATimeSavedStateHighway	0.01*	0.95	0.04*	0.00*
15	Access to construction and infrastructure related jobs	0.31	ATimeSavedDistrict	0.00*	0.95	0.17	0.00*
16	Number of individuals who travel to a nearby town or city daily jobs	0.29	ATimeSavedDistrict	0.00*	0.89	0.96	0.00*
17	Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	0.30	ATimeSavedDistrict	0.00*	0.96	0.05	0.00*
18	Number of HHs that own a motor vehicle	0.31	ATimeSavedDistrict	0.00*	0.94	0.17	0.00*
19	Maintenance cost for motor vehicle	0.23	ATimeSavedTaluka	0.01*	0.35	0.00*	0.00*
20	The cases of HHs which used to migrate temporarily	0.26	ATimeSavedDistrict	0.00*	0.59	0.39	0.00*
21	Instances of landslides_soil disposal_soil erosion	0.27	ATimeSavedDistrict	0.00*	0.70	0.82	0.00*
22	Impact on environment through pollution of vehicular movement	0.28	ATimeSavedDistrict	0.00*	0.75	0.56	0.00*
23	Safe to use the after PMGSY road has been built	0.23	ATimeSavedDistrict	0.00*	0.88	0.20	0.00*
24	Law and order situation_crime rate in your and neighbouring village	0.25	ATimeSavedDistrict	0.01*	0.84	0.10	0.00*
25	Connectivity to nearby villages	0.31	ATimeSavedDistrict	0.00*	0.98	0.08	0.00*
26	Connectivity to nearby major centre	0.29	ATimeSavedDistrict	0.00*	1.00	1.00	0.00*

*Statistically significant at 0.05 level

Summary of Habitation Analysis

From the various correlational analyses, PCA and regressions performed on the Habitation dataset one can infer that presence of PMGSY road is the major driver of perception in improvement of access. This happens through speed gains and time saved to various administrative headquarters and facilities. Thus, for monitoring and evaluation, Speed Gain and Time Saved can serve as important monitoring variables.

5.3.II Analysis of the Outcome and Impact by Type of Connectivity and Road Characteristic Variables

In the following, we analyze along the relevant dimensions for Habitations (Appendix 10).

5.3.IIa. Speed Gains by Phase of Construction

Table 5.3.7 represents the means of percentage speed gains by type of connectivity for PMGSY and non-PMGSY roads constructed in different phases. The analysis has been performed across twin dimensions. The categorization in the rows is first done by whether the road is PMGSY or not. If it is a PMGSY then further categorization by the phase of construction of the road has been considered. The columns represent access to administrative HQ like Taluka, District, State highway etc. and different facilities like Health centre, Market etc.

Table 5.3.7: Mean Speed Gains by Type of Connectivity for a. Non PMGSY Roads b. PMGSY Roads (by Phase of Construction) (%)

Type of Road/Phases* 0-Non-PMGSY, 1-PMGSY	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
0/*	12.69	18.95	18.94	29.62	118.33	100	33.33	33.33	33.33	7.48	41.67
1/1	52.78	48.10	34.17	25.33	70.57	71.25	20.95	24.44	10	5.25	49
½	83.83	63.09	73.08	83.42	93.56	48.08	53.08	69.02	27.58	10.42	85.39
1/3	94.63	67.83	68.27	111.92	131.82	40.77	76.83	87.93	29.33	13.53	91.70
¼	56.57	46.32	64.52	74.91	77.23	61.58	54.51	72.25	16.67	10.09	65.71
Total	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14

(Note: 1-Year lower than or equal to 2000, 2-2000-2004, 3-2004-2012, 4-2012-2017, 0-non-PMGSY roads)

*We are not considering speed gains by phases for non-PMGSY roads

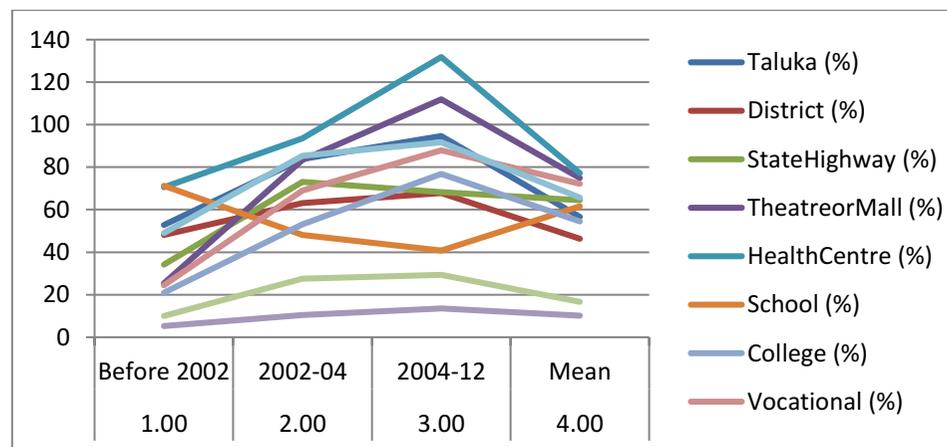


Figure 5.3.1: Trend of Means of Percentage Speed Gains for All Facilities for PMGSY Roads by Phase of Construction

To interpret the table entries, say for instance, the mean percentage speed gain for Taluka in Phase 0 (i.e. for a non-PMGSY road) is 12.69, in Phase 1 is 52.78, in Phase 2 is 83.83, in Phase 3 is 94.63 and in Phase 4 is 56.57. One can observe that the percentage speed gains for different facilities like Taluka, District, State Highway, Theatre or Mall, Mandi etc. increases first through phase 1 to 3 and then there is a decline. The reason is the roads in Phase 4 have still not reached their peak speed gain whilst the roads in phase 1 and 2 are on a decline due to requisite need for maintenance. The same can be observed by looking at the trend of speed gains from Figure 5.3.1 above. This is likely due to elapsed longer period since their construction. Thus, maintenance of the road becomes an important determinant of an optimum speed gain. For the facilities (Health Centre, School, College, Vocational, Industries and Market etc.), the sample size is very small and hence the results for percentage speed gains may not be indicative.

5.3.IIb. Speed Gain by Type of Road

Tables 5.3.8 represent the means of percentage speed gains for various administrative HQ for roads 1, 2 and 3 passing through the same habitation. The Road 1 usually is the PMGSY road in most cases. The expectation would be that as the quality specification of the road moves from a gravel road to a cemented one the percentage speed gain to different administrative HQ should increase. The trend analysis for Motorable road is not shown because the number of entries is very small and hence is not indicative. The trend analysis is shown in Figure 5.3.2.

Table 5.3.8: Speed Gains for Taluka, District and State Highway and Each of the Roads in the Habitation by Type of Road

Type of Road	Taluka (%)	District (%)	State Highway (%)
Road 1			
Gravel Road	44.53	51.80	61.81
Motorable	57.14	43.81	30.00
Asphalt	66.57	48.41	60.64
Cemented	120.67	102.18	88.46
Total	72.61	58.12	65.88

Road 2			
Gravel Road	56.25	39.80	98.67
Motorable	100.00	60.00	60.00
Asphalt	86.11	76.92	66.88
Cemented	189.33	186.67	40.00
Total	95.81	73.55	69.73

Road 3			
Gravel Road	116.67	62.78	75.00
Asphalt	0.00	20.67	35.00
Cemented	380.00	190.00	50.00
Total	121.67	66.77	54.00

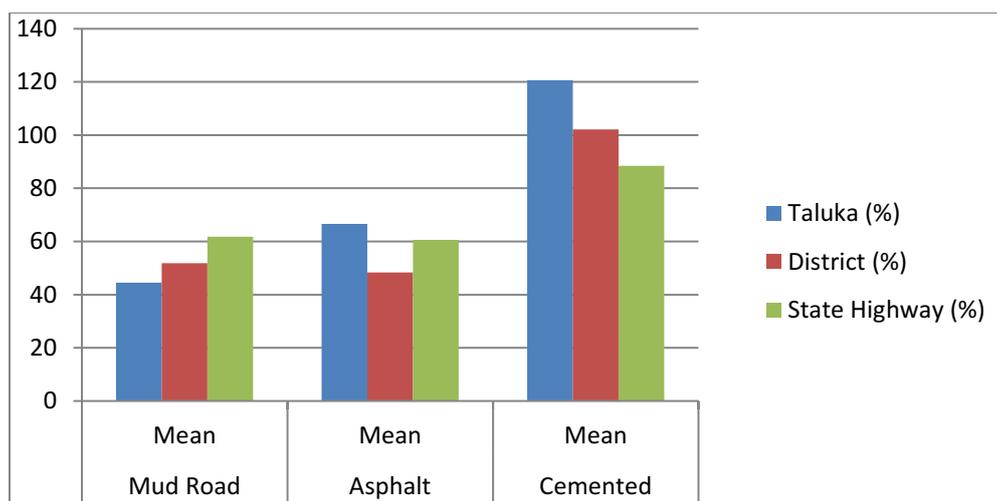


Figure 5.3.2: Trend of Means of Percentage Speed Gains by Type of Connectivity via Road 1 (usually PMGSY Road) by Type of Road

The Cemented road shows a declining trend of percentage speed gain from Taluka to District to State highway. For the Asphalt road, the trend is a V-shaped. The Gravel road however has an upward sloping trend of percentage speed gain from Taluka to District to State Highway. The quality specification for Gravel roads is case of PMGSY is relatively better and is able to yield appreciable speed gains. The values of percentage speed gains for Gravel road are lesser than Asphalt and Cemented. As expected, the number of observations of road 2 and 3 are small hence, we do not elaborate on the same.

5.3.IIc. Speed Gain by Different Roads Passing through the Same Habitation

Table 5.3.9 represents the correlations of percentage speed gains for all the administrative HQ and facilities with presence of each of the roads through the habitation. Road 1, Road 2 and Road 3 represent the various roads passing through the village or the habitation. The rows represent the percentage speed gains for all the administrative HQ and facilities whilst the columns the percentage speed gains due to various roads.

Table 5.3.9: Correlations of Speed Gains for each of the Roads in the Village with Speed Gains by Type of Connectivity

Speed Gain		Road 01	Road 02	Road 03
Market	Pearson Correlation	.370	.189	.326
	Sig. (2-tailed)	.000	.208	.277
	N	220	46	13
Habitation	Pearson Correlation	.437	.600	-.089
	Sig. (2-tailed)	.000	.008	.887
	N	79	18	5
Village	Pearson Correlation	.420	.311	-.250
	Sig. (2-tailed)	.001	.208	.685
	N	55	18	5
Taluka	Pearson Correlation	.253	.049	.142
	Sig. (2-tailed)	.002	.796	.789
	N	151	30	6
District	Pearson Correlation	.235	.014	.204

Speed Gain		Road 01	Road 02	Road 03
	Sig. (2-tailed)	.002	.929	.547
	N	171	40	11
State Highway	Pearson Correlation	.326	-.046	-.413
	Sig. (2-tailed)	.000	.826	.489
	N	121	25	5
Theatre or Mall	Pearson Correlation	.340	.120	1.000
	Sig. (2-tailed)	.000	.593	NA
	N	120	22	2
Health Centre	Pearson Correlation	.113	-.197	-.435
	Sig. (2-tailed)	.168	.336	.464
	N	151	26	5
School	Pearson Correlation	.125	.322	. ^a
	Sig. (2-tailed)	.201	.242	NA
	N	106	15	1
College	Pearson Correlation	.207	-.089	-.234
	Sig. (2-tailed)	.021	.678	.655
	N	124	24	6
Vocational	Pearson Correlation	.229	-.507	-.839
	Sig. (2-tailed)	.062	.164	.367
	N	67	9	3
Industries	Pearson Correlation	.366	. ^a	. ^a
	Sig. (2-tailed)	.148	NA	NA
	N	17	1	0
Mandi	Pearson Correlation	.303	.213	.481
	Sig. (2-tailed)	.000	.367	.412
	N	133	20	5

Note: The parameters associated with the highlighted cells indicate that the correlation is statistically significant.
NA – Not Applicable due to insufficient data points

The Pearson correlation between Road 1 (220 habitations), Road 2 (46 habitations) and Road 3 (13 habitations) and percentage Speed Gain to Market Facilities is 0.370, 0.189, 0.326 respectively. As one can observe in case of Road 1 the correlation of Speed Gain are statistically significant and but not in case of Roads 2 and 3. In case of connectivity through Road 1 to the higher level Habitation (79*), Village (55), Taluka (151), District (171), State Highway (121), Theatre or Mall (120) and Mandi (133), the Pearson correlations are 0.437, 0.420, 0.253, 0.235, 0.326, 0.340, 0.303 etc. and are statistically significant. However, on the other hand correlations for connectivity through Road 1 to Health Centre (151), School (106), College (124), Vocational (67), Industries (17) etc. are not statistically significant. This is likely because over a period, these facilities have been provided in the village or very close to the village. It can be inferred that the presence of PMGSY road has an impact on speed gains.

**Numbers in bracket indicate the number of observations available for that particular administrative HQ or access facility*

5.3.IId. Speed Gain by States

Table 5.3.10 represents the means of percentage Speed Gains by Type of Connectivity for PMGSY roads in Bihar, Himachal Pradesh, Jharkhand, Meghalaya, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand.

Table 5.3.10: Speed Gains by Type of Connectivity across States

(%)

State	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
Bihar	139.13	97.87	78.02	115.67	116.01	30.56	158.01	130.28	51.98	16.96	111.61
Himachal Pradesh	300.00	183.33	50.00	NA	398.53	140.00	0.00	8.33	0.00	16.46	142.50
Jharkhand	62.39	69.87	84.17	95.14	95.48	25.95	103.10	114.95	18.00	11.29	105.64
Meghalaya	47.21	44.10	55.00	46.27	44.19	57.74	49.98	43.13	0.00	15.60	55.95
Punjab	26.67	26.39	0.00	35.71	8.93	17.86	8.33	NA	0.00	0.00	7.35
Rajasthan	105.98	42.15	81.38	64.06	98.65	45.00	71.18	120.00	NA	14.46	70.00
Uttar Pradesh	41.43	39.70	43.80	88.82	67.29	44.31	29.53	35.88	32.47	5.68	90.15
Uttarakhand	57.93	51.82	78.54	97.53	105.56	68.52	57.57	128.89	15.00	9.38	45.68
Total	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14

NA – Not Applicable due to insufficient data points

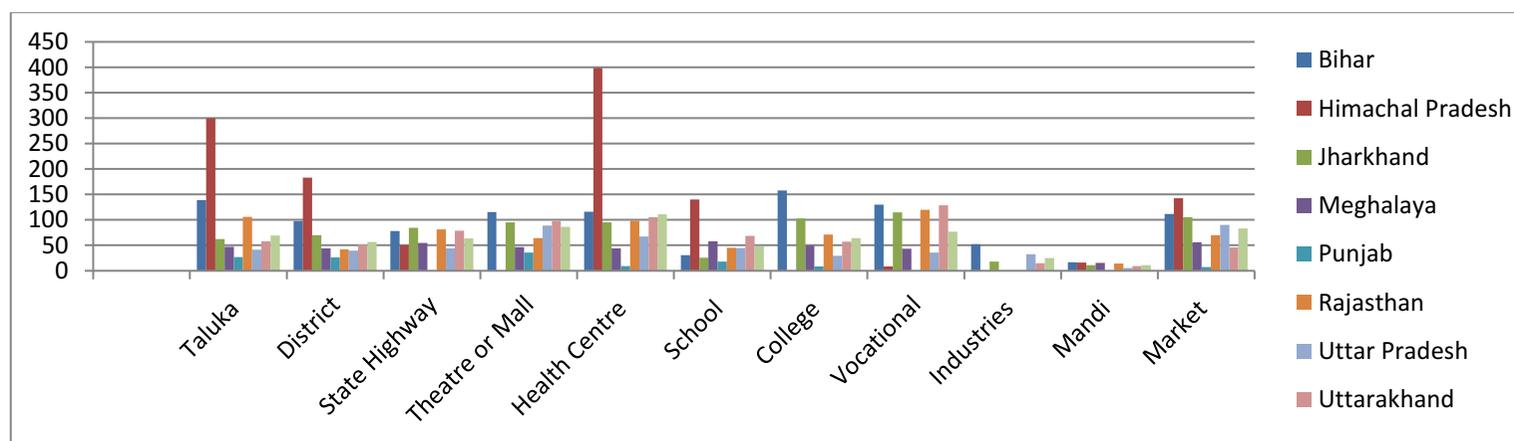


Figure 5.3.3: Trend of Means of Percentage Speed Gains by Type of Connectivity by States

One can observe that in Bihar, Himachal, and Rajasthan there are statistically significant percentage speed gains. The trends in Figure 5.3.3 depict the scenario. This can be explained as these states had new roads being built as part of PMGSY program. In case of Punjab, which already had a well-developed rural road network, most of the PMGSY work focusses on upgradation. This did not lead to statistically significant speed gains. The above analysis is also supported by data from OMMAS (Table 1.2 Section 1.3 Chapter 1).

5.3.IIe. Speed Gain by Agro-Climatic Zones

Table 5.3.11 represents the means of percentage Speed Gains by Type of Connectivity for PMGSY roads by Agro-Climatic Zones.

Table 5.3.11: Speed Gains by Type of Connectivity by Agro-Climatic Zones

(%)

Agro-Climatic Zones	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
0.00	74.67	58.39	55.50	72.93	196.75	58.69	63.19	87.12	0.00	11.49	79.16
1.00	57.07	42.62	56.44	77.07	59.47	36.36	48.72	48.95	32.58	9.37	83.79
2.00	50.00	43.89	88.89	132.50	54.44	-NA	54.34	75.00	NA	12.50	75.00
3.00	0.00	25.00	0.00	100.00	8.33	0.00	0.00	NA	NA	0.00	8.33
4.00	56.79	51.68	66.71	103.94	104.44	69.08	49.42	72.04	NA	14.61	68.10
5.00	45.83	48.99	100.00	26.67	50.00	50.00	68.75	33.33	15.00	4.29	95.00
6.00	123.67	122.34	96.94	139.75	132.87	36.90	155.74	139.23	35.32	14.38	115.21
Total	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

NA – Not Applicable due to insufficient data points

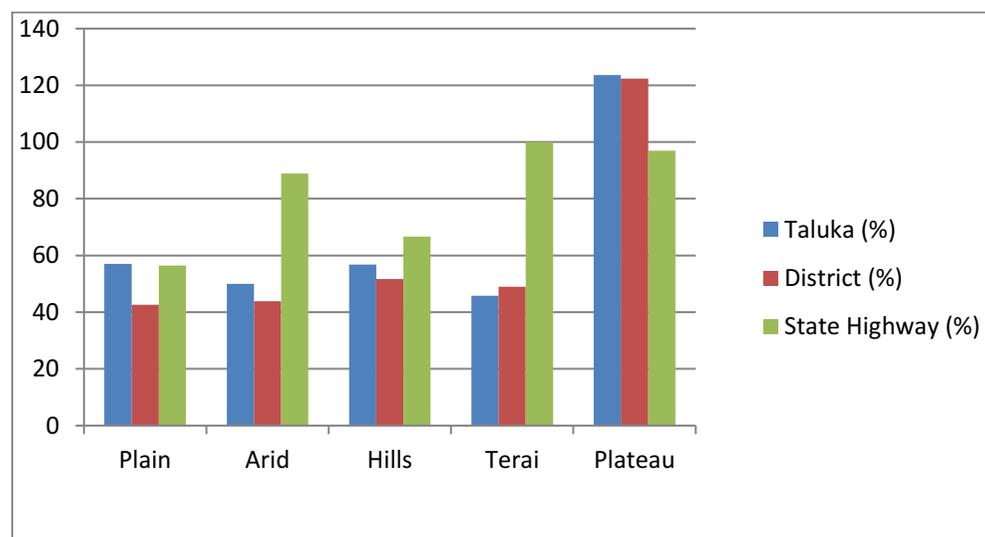


Figure 5.3.4: Trend of Means of Percentage Speed Gains for all Administrative HQ in Different Agro-Climatic Zones

In the trend analysis in Figure 5.3.4, undulating plains have been removed as the sample size is very small and the results may not be indicative. In case of plains, there are no statistically significant Speed Gains. This is because of an already well-developed network of roads that would have existed from before. The PMGSY program however has been able to bring about considerable impact and improvement in speed gains in hilly, terai and plateau areas. As one can see from the trend in Figure 5.3.4, as the terrain gets more difficult from plains to hills, terai and plateau, the percentage speed gain to all administrative HQ like taluka, district and state highways show an increasing trend. Thus, one can infer that the PMGSY roads have been able to bring about more impact in adverse geographical terrains. Even in arid regions there have been statistically significant speed gains to state highways.

5.3.IIif. Speed Gain by Habitations with Different Ranges of SC/ST Population

Table 5.3.12 represents the means of percentage speed gains by type of connectivity in villages having PMGSY roads with different ranges of SC/ST population.

Table 5.3.12: Speed Gains by Type of Connectivity and Percentage SC/ST Population in the Habitation

(%)

SC/ST Category	Taluka	District	State Highway	College	Vocational	Industries	Mandi	Market
SC/ST population 60% or more	89.74	57.18	90.11	83.80	83.94	0.00	16.13	101.08
SC/ST population 40%-60%	42.50	44.62	61.02	45.19	23.33	5.22	11.81	51.63
SC/ST population 20%-40%	65.86	62.15	51.72	49.28	83.89	10.61	8.72	118.22
SC/ST population less than 20%	69.79	56.00	63.85	68.28	77.90	32.77	10.62	71.02
Total	69.06	56.37	63.79	64.32	76.79	25.12	10.98	83.14

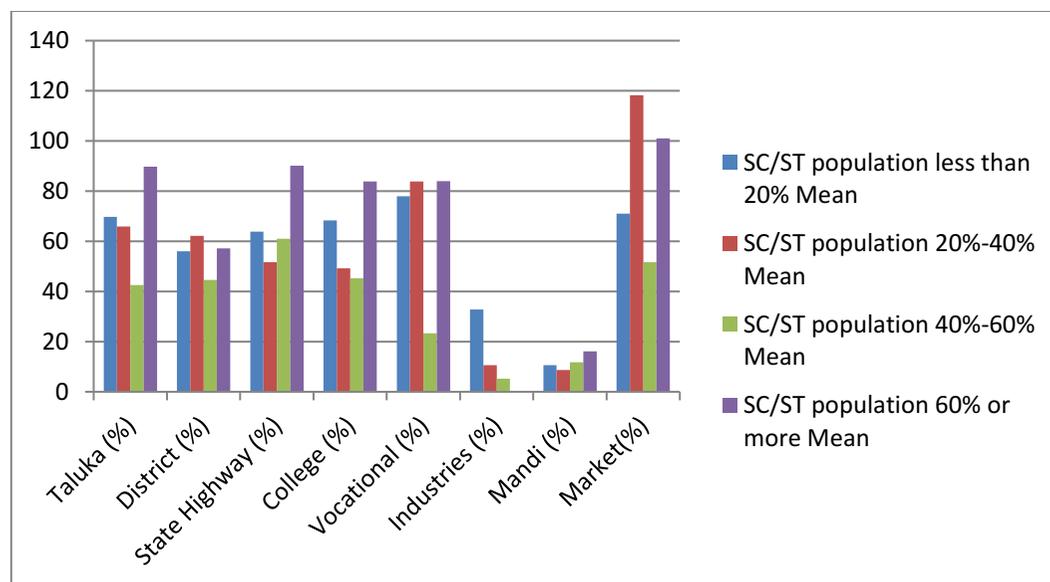


Figure 5.3.5: Trend of Means of Percentage Speed Gains by Type of Connectivity and Percentage SC/ST Population in the Habitation

As one can see from the trend in Figure 5.3.5, habitations where the SC/ST population is higher show a higher percentage speed gain by type of connectivity such as Taluka, District, State Highway, College, Vocational, Markets etc. Thus, one can infer that the SC/ST population also benefits noticeably from the construction and maintenance of the PMGSY road.

5.3.II.g. Speed Gain by Habitations with Different Ranges of BPL Card Holder Population

Table 5.3.13 represents the means of percentage speed gains by type of connectivity in villages having PMGSY roads with different ranges of BPL cardholder population.

Table 5.3.13: Speed Gains by Type of Connectivity in Habitations with Different Ranges of BPL Card Holder Population
(%)

BPL Category	Taluka	District	State Highway	College	Vocational	Industries	Mandi	Market
No of families with BPL Card 60% or more	87.50	70.12	66.42	107.38	113.68	44.64	15.24	74.61
No of families with BPL Card 40% to 60%	79.81	63.18	86.07	64.37	64.44	23.76	11.01	96.29
No of families with BPL Card 20% to 40%	71.98	53.94	49.25	59.66	82.74	10.00	9.51	68.38
No of families with BPL Card less than 20%	56.11	51.86	64.84	55.08	66.54	24.70	10.51	90.46
Total	69.06	56.37	63.79	64.32	76.79	25.12	10.98	83.14

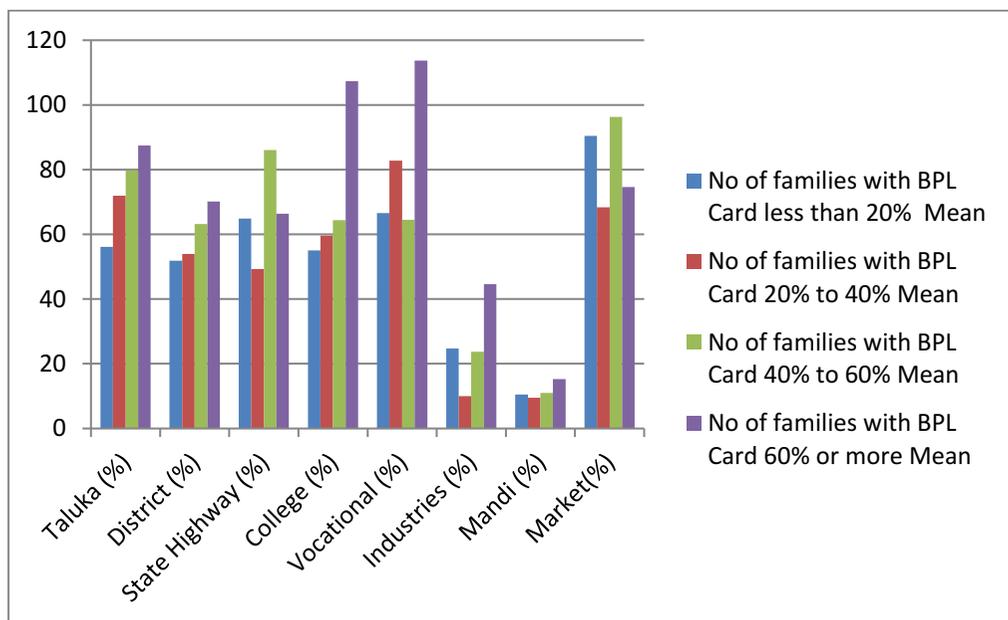


Figure 5.3.6: Trend of Means of Percentage Speed Gains by Type of Connectivity in Habitations with Different Ranges of BPL Card Holder Population

As one can see from the trend in Figure 5.3.6, villages where the BPL cardholder population is higher show a higher percentage speed gain by Type of Connectivity. Thus, one can infer that the BPL population also benefits noticeably from the construction and maintenance of the PMGSY road.

5.3.IIh. Speed Gain by Primary Occupation in the Habitations

Table 5.3.14 represents the means of percentage speed gains by type of connectivity for different primary occupation in the village.

Table 5.3.14: Speed Gains by Type of Connectivity for Different Primary Occupation in the Habitations

Occupation	Taluka	District	State Highway	College	Vocational	Industries	Mandi	Market
Agriculture	57.06	47.68	57.63	47.24	59.47	25.93	10.41	78.78
Animal Husbandry	70.71	48.44	60.79	63.97	55.68	19.29	9.68	58.50
Forestry	33.33	NA	NA	NA	NA	NA	20.00	NA
Mining	66.67	116.67	66.67	33.33	NA	NA	14.17	33.33
Agricultural Labour	38.89	37.43	35.42	39.58	36.71	31.31	5.33	24.24
Non-agricultural Labour	59.57	44.54	62.81	50.85	68.01	31.75	10.34	102.82
Salaried Employee	97.71	90.73	87.02	126.14	128.71	0.67	9.03	94.15
Business/Trading	31.25	33.33	36.61	50.00	NA	NA	1.63	58.33

(%)

(Note: The total occurrences of the activity need not add up to the 285, as the primary occupation is defined as Rank 1 and Rank 2)
 NA – Not Applicable due to insufficient data points

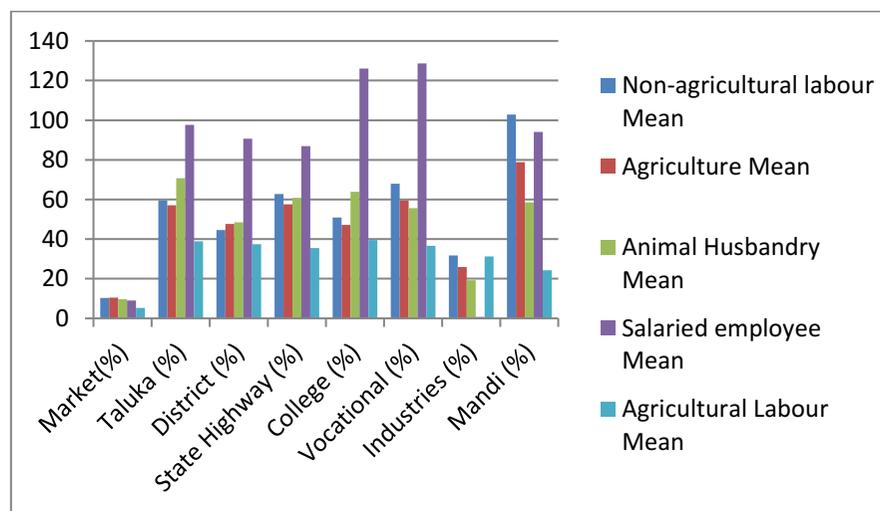


Figure 5.3.7: Trend of Means of Speed Gains by Type of Connectivity by Primary Occupation in the Habitations

As one can see from the trend in Figure 5.3.7, people having occupations of agriculture, animal husbandry, non-agricultural labour, salaried employees seem to benefit as shown by their higher percentage speed gains to various administrative HQ and facilities such as Taluka, District, State Highway, College, Vocational, and Markets etc. Thus, one can infer that these occupations benefit prominently from the construction and maintenance of the PMGSY road. For the occupations of forestry, mining, business/trading etc. the sample sizes are small and hence the results may not be representative and hence have not been shown in the trend analysis.

5.3.III Relative Benefits of PMGSY and non-PMGSY Roads

In Tables, 5.3.15 and 5.3.16 below Speed Gain and Time Saved in presence of PMGSY and non-PMGSY roads is compared across States and Agro-Climatic Zones.

Table 5.3.15: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

(%)

PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi
Absent	0.07	0.16	0.16	0.13	0.19	0.19	0.30	1.18	1.00	0.33	0.33	0.33	0.42
Present	0.12	1.18	0.87	0.84	0.63	0.68	0.95	1.11	0.48	0.65	0.77	0.25	0.84
Total	0.11	0.95	0.65	0.69	0.56	0.64	0.86	1.11	0.48	0.64	0.77	0.25	0.83

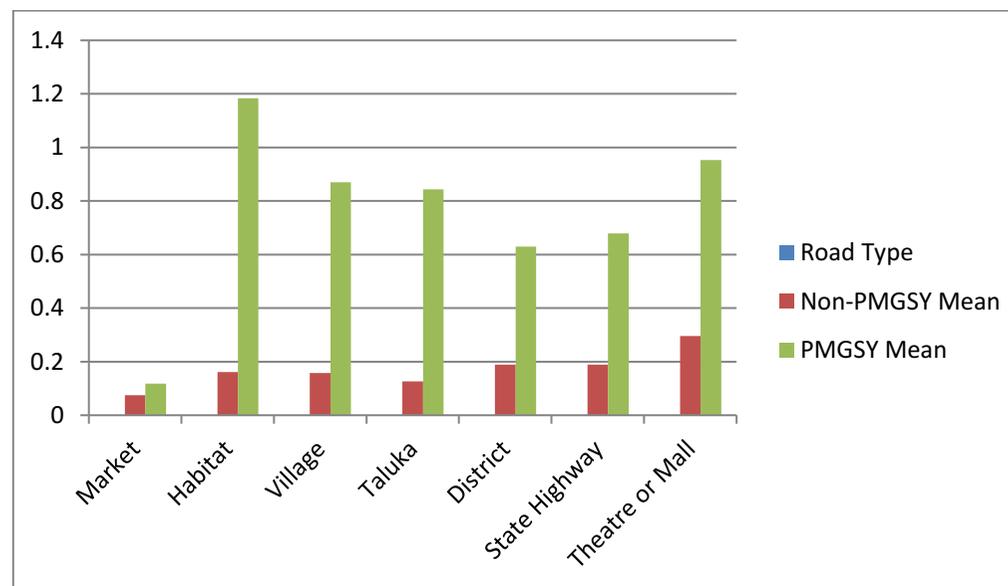


Figure 5.3.8: Trend of Means of Percentage Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

Table 5.3.16: Means of Time Saved by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

(minutes)

PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries	Mandi
Absent	6.24	1.85	3.06	2.43	7.04	3.18	9.17	26.20	1.00	10.00	10.00	10.00	10.00
Present	14.72	19.61	19.62	22.62	26.30	14.94	24.85	16.58	7.04	19.03	28.26	17.17	17.80
Total	13.06	15.53	14.39	18.34	23.40	13.94	22.65	16.86	6.99	18.96	28.01	16.88	17.70

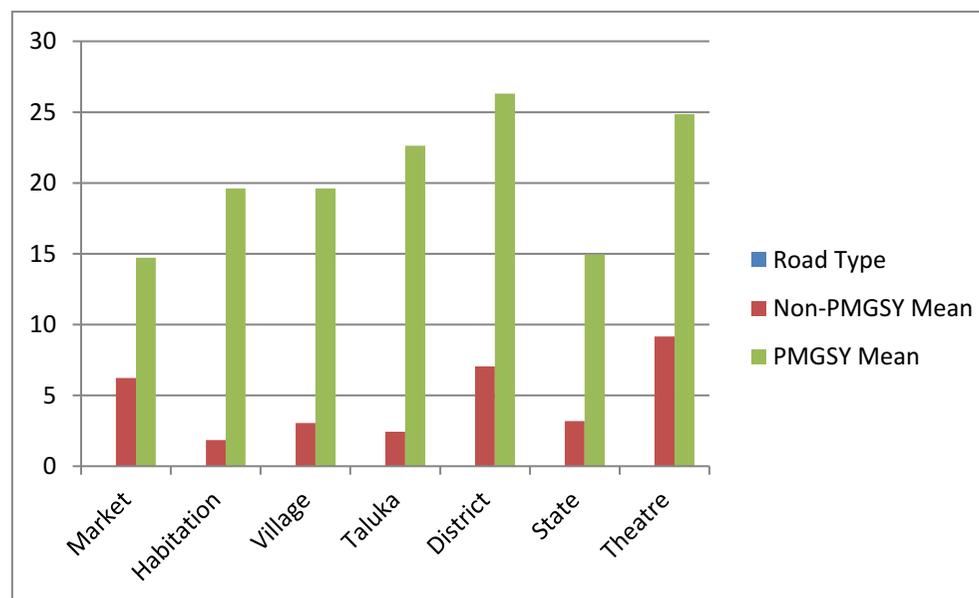


Figure 5.3.9: Trend of Means of Time Saved (in Minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

From Tables 5.3.15 and 5.3.16, it is quite apparent that there has been speed gains and time saved due to presence of PMGSY roads. Only in case of Schools and Health centres, this positive impact is not there. This might be because of the fact that schools and health centres would have been in the same or nearby village. Thus, there is no requirement of travel for them. Thus, there is no apparent speed gain and time saved for school and health centres for this reason. Figure 5.3.8 and 5.3.9 depict the trends for the same and are self-explanatory.

In the Tables, 5.3.17 and 5.3.18 (Appendix 11), Speed Gain and Time Saved (by states) due to presence of PMGSY and non-PMGSY roads are compared. As already explained earlier, in Punjab there is little change because the roads were mostly upgraded and good quality roads were already present from beforehand.

In Tables 5.3.19 and 5.3.20 (Appendix 11), Speed Gain and Time Saved (by Agro-Climatic Zones) due to presence of PMGSY and non-PMGSY roads are compared. This disaggregated analysis (by States and Agro-Climatic Zones) of percentage speed gain and time saved will turn out to be useful in finding the optimum speed gain and setting a benchmark for Type of Road. The details of this will be discussed later.

5.3.IV Relative Speed Improvements Before and After the Construction of PMGSY and non-PMGSY Roads

In Table 5.3.21, Speed to Taluka HQ before and after the construction of PMGSY and non-PMGSY roads (by Type of Road) is compared. This is because we consider speed gains in reaching to Taluka HQ as a critical benefit for the villagers. This benefit is the most indicative of the all other benefits of PMGSY roads.

Table 5.3.21: Speed to Taluka HQ Before and After by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (By Type of Road)

Type of Road 1	PMGSY Road Present	Mean Speed (km/hr)	
		Before	After
Gravel Road	Absent	12.6	12.6
	Present	12	19.2
	Total	12	16.8
Motorable	Absent	19.8	19.8
	Present	7.8	16.2
	Total	9	16.2
Asphalt	Absent	19.8	25.8
	Present	12.6	17.4
	Total	13.8	19.2
Cemented	Absent	21	21
	Present	13.2	17.4
	Total	13.8	18
Total	Absent	17.4	20.4
	Present	12.6	18
	Total	13.2	18

Compared to a PMGSY road, the non-PMGSY road showed lower speed gains in case of Gravel and Motorable roads (Table 5.3.21). This was not discernible in the case of Asphalt and Cemented Roads. This is because the design and construction specifications of PMGSY are higher than for other roads. For Asphalt and Cement roads, the underlying quality is anyway much better so that the difference across the two was not discernible. Type of Road thus becomes an important monitorable indicator.

In Table 5.3.22, Speed to Taluka HQ before and after the construction of PMGSY and non-PMGSY roads (by Type of Road and Phase of Construction) are compared.

Table 5.3.22: Speed to Taluka HQ Before and After by Type of Connectivity due to Presence of PMGSY and non PMGSY Roads (by Type of Road and Phase of Construction)

(km/hr)

Type of Road 1	Phase of Construction	Mean Speed	
		Before	After
Gravel Road	0	12.6	12.6
	2	10.8	16.2
	3	10.8	18.6
	4	19.2	27
	Total	12	16.8
Motorable	0	19.8	19.8
	1	1.8	6
	2	6	12
	3	9	18.6
	Total	9	16.2
Asphalt	0	19.8	25.8
	1	26.4	30
	2	12.6	19.8
	3	11.4	16.2
	4	6.6	11.4
	Total	13.8	19.2
Cemented	0	21	21
	1	26.4	26.4
	2	12	14.4
	3	12.6	16.8
	4	14.4	19.8
	Total	13.8	18
Total	0	17.4	20.4
	1	23.4	27
	2	12.6	18
	3	11.4	16.8
	4	11.4	16.8
	Total	13.2	18

(Note: 1-Year lower than or equal to 2000, 2-2000-2004, 3-2004-2012, 4-2012-2017, 0-Non-PMGSY roads)

Table 5.3.22 substantiates the inference drawn from Table 5.3.21. In Table 5.3.23 below, Speed before and after due to Taluka HQ before and after the construction of PMGSY and non-PMGSY roads (by State) are compared.

Table 5.3.23: Speed to Taluka HQ Before and After by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by States)

State	PMGSY Road Present	Mean Speed (km/hr)	
		Before	After
Bihar	Absent	13.8	14.4
	Present	6	12
	Total	7.8	12.6
Himachal Pradesh	Absent	35.4	46.2
	Present	18	24
	Total	20.4	27
Jharkhand	Absent	15	15
	Present	10.2	15
	Total	11.4	15
Meghalaya	Absent	25.2	26.4
	Present	16.8	24
	Total	18	24.6
Punjab	Present	24	26.4
	Total	24	26.4
Rajasthan	Absent	21.6	27
	Present	11.4	18
	Total	12.6	19.2
Uttar Pradesh	Absent	15.6	15.6
	Present	13.2	18
	Total	13.8	18
Uttarakhand	Absent	14.4	21.6
	Present	7.2	12.6
	Total	10.8	16.8
Total	Absent	17.4	20.4
	Present	12.6	18
	Total	13.2	18

In Bihar, Jharkhand, Meghalaya, UP, the non-PMGSY roads were unable to bring about any discernible improvement. However, the PMGSY road had brought about improvements in speeds. In state of Himachal Pradesh, the PMGSY showed distinct improvements. The non-PMGSY showed larger improvements. The sample size was very small and so the interpretations could be misleading. As discussed earlier and also shown by the OMMAS data (Section 1.3 Chapter 1) the state of Punjab has cases of upgradation and hence the speed before and after is not very different. The rural road network in the state of Punjab was already well developed. In case of Rajasthan there is marked improvements in speeds although cases of non-PMGSY roads are not there. In Uttarakhand, the non-PMGSY roads seem to provide as good a speed improvement as a PMGSY road. This may be because of well-developed rural road networks from earlier or through other programs/projects.

In Table 5.3.24, Speed to Taluka HQ before and after the construction of PMGSY and non-PMGSY roads (by Agro-Climatic Zones) are compared.

Table 5.3.24: Means of Speed Before and After by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by Agro-Climatic Zones)

(km/hr)

Agro-Climatic Zones	PMGSY Road Present	Mean Speed	
		Before	After
0.00	Present	23.4	25.2
	Total	23.4	25.2
1.00	Absent	16.8	18.6
	Present	12	16.8
	Total	13.2	17.4
2.00	Present	13.8	25.2
	Total	13.8	25.2
3.00	Present	19.8	19.8
	Total	19.8	19.8
4.00	Absent	21.6	30
	Present	15	20.4
	Total	16.2	22.2
5.00	Absent	15.6	19.8
	Present	4.2	19.8
	Total	13.2	19.8
6.00	Absent	12	12
	Present	8.4	14.4
	Total	9	14.4
Total	Absent	17.4	20.4
	Present	12.6	18
	Total	13.2	18

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

For Plains, as expected there is no difference in speed improvement between the non-PMGSY roads and PMGSY roads. This is because in plains the Type of Road does not contribute differentially to speed gains as the terrain is flat. Data points for Arid and Undulating Plains are very small and hence the results would not be representative. However, for challenging terrains of Hills, Terai and Plateau, the PMGSY roads are able to provide much better speed improvements as compared to non-PMGSY roads.

5.3.V Perception of Improvement in Access to Facilities for PMGSY and non-PMGSY Roads

In Appendix 12, perception and opinions of improvement in access to facilities by Type of Connectivity due to presence of PMGSY and non-PMGSY roads are compared. In presence of PMGSY roads, the perception of access along the 26 dimensions (Refer to the questionnaire in Appendix 13) has either improved somewhat or improved significantly whereas for non-PMGSY roads, the perception is that of no change or deterioration.

Summary of Habitation Analysis

Our analysis has focused on the primary benefits of connectivity which are speed gains and time saved. Prior studies had taken into account a variety of parameters including changes in morbidity, educational outcomes, cropping patterns etc. as indicators of the performance of the rural road networks including PMGSY. However, as pointed out earlier, these are secondary benefits and are dependent on a variety of other factors and would thus not serve as monitorable indicators of PMGSY performance.

The PMGSY road presence improves the speed gains and in turn saves time in access to all administrative HQ and facilities considered. This is also found to be the case by states and Agro-Climatic Zones. The PMGSY is able to bring about more impact in states where there is new construction vis-à-vis states where there is improvement of the existing network (for e.g., Punjab). The impact is also seen to be more in difficult terrains and Agro-Climatic Zones such as plateau and terai, where there were not so well developed network of roads from before. The type of road is another important factor in perception of benefits. The specifications of PMGSY roads are so good that even the gravel roads are able to yield significant speed gains. The phase of construction of road is an important predictor of the requirement of maintenance of the road. Thus, its regular monitoring and subsequent maintenance measures are suggested for optimum speed gains. Villages with higher populations of SC/ST, BPL and other backward sections of the society have indicated higher speed gains. Thus, construction of PMGSY roads is able to bring about socio-economic benefits to the poor. We believe that the program design coverage based on Habitation population has seen even those villages where higher population of SC/ST and backward classes getting connected. These sets of people may otherwise have not been able to leverage road connectivity in the existing administrative and political framework.

5.4 Data Analysis for HH

The analysis has been done as per the basic data analysis framework outlined above.

5.4.I Identifying Monitoring Variables

To identify the monitoring variables, we have undertaken the following steps:

5.4.Ia. Perception of Cited Benefits of the PMGSY Roads

We have adopted the analysis from the Habitation data.

5.4.Ib. Perception of Improvement in Access Due to the PMGSY Roads

Table 5.4.1 (Appendix 14) shows the correlations between perceptions of access variables. Table 5.4.2 (Appendix 14) shows the correlations of perceptions of access and other variables with speed gain variables. These high correlations imply that the factors influencing the same are few. Since the variables are “improvements” or “changes” in the access / quality / quantum of service derived, there is only to be expected since the changes of a ubiquitous nature that have a potential to influence all experience is $\tilde{R}_{i,j}$ ($= -\tilde{S}_{i,j}$) which then effects access/quality/derived quantum of service as given by Eq (3) above. Principal component analysis reduces these to fewer components.

5.4.Ic. PCA

Table 5.4.3 shows the PCA results of the perception about access and other variables. Three constructs accounting for 54.78%, 9.57% and 5.76% of the variances (respectively) in the entire set of access related variables separated.

The first component consists of service access and availability variables, visits for official and personal purposes, economic gains and vehicle ownership variables. These are all **Immediate Effects** that can be expected through change in the “speed of travel and movement” via the process characterised by Eq. (2). The second component consists of traffic to and from the village, access to market/mandi for agricultural produce, construction and infrastructure related jobs, safety of road usage, law and order situation. These may be labelled as **Medium term effects**. They are similar to the first construct but typically would take a longer time to happen being either compositional (collective safety, traffic) or those requiring time, or acting through input and investment choices. The medium term effect merges into the longer term which obviously cannot be captured by a survey of this kind. With the passage of time this effect though difficult to measure and attribute to, would be large. The third construct in reducing maintaining costs is a **feedback** effect of good roads on vehicle costs. Good roads by reducing the wear and tear of vehicles, has a feedback effect to reduce the friction of distance by reducing the maintenance and operating cost aspect of the same (included in a generalised version of *R*). We may therefore label this factor as the **Amplification Effect**, since it amplifies the “speed of travel /time gains” by “reducing the cost” or increasing the “speed of travel”.

Table 5.4.3: PCA of Perception of Access and Other Variables Based on HH Dataset

SNo	Components	Factor Loadings	% of Variance Explained
Construct 1			
1	Access to health facilities	.763	54.78%
2	Visits to the villages by ANMS_Nurses_Doctors	.760	
3	Availability of Emergency services like 108_Police	.748	
4	Visits by teachers and government officials	.748	
5	Visits by our friends and relatives	.668	
6	Regularity of children attending schools located nearby	.768	
7	Regularity of children attending colleges located nearby	.778	
8	Safety of Travel to and from our village	.617	
9	Economic activity in our village	.776	
10	Access to markets_mandis for agriculture produce	.755	
11	Price realization of agricultural produce	.735	
12	Number of individuals who travel to a nearby town or city daily jobs	.762	
13	Number of motor vehicles owned by our HH	.777	
14	New planned economic activities in the HH	.660	
Construct 2			
1	Traffic from and to our village	.702	9.57%
2	Access to markets _mandis for animal husbandary_dairy_fishing_poultry	.808	
3	Shift in agricultural practices or cropping pattern	.820	
4	Access to construction and infrastructure related jobs	.831	
5	Number of individuals who travel to a nearby town or city daily recreation/social functions/festivals	.853	
6	Information about actual price of agricultural goods and milk	.639	
7	The cases of HHs which used to migrate temporarily	.781	
8	Impact on environment through pollution of vehicular movement	.749	
9	Safe to use the road after PMGSY road has been built	.817	

SNo	Components	Factor Loadings	% of Variance Explained
10	Law and order situation crime rate in your and neighbouring village	.811	
Construct 3			
1	Maintenance cost for motor vehicle	.767	5.76%

5.4.Id. Regression Analysis

Regressions in Tables a to z given in Appendix 15 represent the relationship of monitoring variables. The perception about access and other benefit variables are used as dependent variables and related speed gain variables as independent variables in the regressions. Regressions were done for both situations: including and excluding PMGSYRoadPresent as an independent variable.

Table 5.4.4 Summary of Regression Results of Perception of Access and Other Benefit as Dependent Variables and Relevant Speed Gain Variables/ PMGSYRoadPresent (both excluding/including) as Independent Variables (based on HH Dataset)

SNo	Dependent Variables Perception of Access and Other Benefit Variables	PMGSYRoadPresent Variable excluded			PMGSYRoadPresent included		
		R-Squared	Most significant Speed Gain Variable	Corresponding p-value	R-Squared	Corresponding p-value	p-value for PMGSYRoad Present Variable
1	Access to health facilities	0.00	ASpGainDistrict	0.02*	0.06	0.05	0.00*
2	Visits to the villages by ANMS_Nurses_Doctors	0.02	ASpGainDistrict	0.01*	0.06	0.75	0.00*
3	Availability of Emergency services like 108_Police	0.00	ASpGainTaluka	0.00*	0.05	0.30	0.00*
4	Visits by teachers and government officials	0.00	ASpGainDistrict	0.00*	0.01	0.00*	0.00*
5	Visits by our friends and relatives	0.00	ASpGainTaluka	0.00*	0.01	0.01*	0.00*
6	Regularity of children attending schools located nearby	0.02	ASpGainVillage	0.00*	0.02	0.02*	0.00*
7	Regularity of children attending colleges located nearby	0.03	ASpGainDistrict	0.00*	0.04	0.08	0.00*
8	Traffic from and to our village	0.01	ASpGainStateHighway	0.50	0.01	0.99	0.00*
9	Safety of Travel to and from our village	0.00	ASpGainDistrict	0.00*	0.10	0.00*	0.50
10	Economic activity in our village	0.06	ASpGainDistrict	0.00*	0.07	0.01*	0.00*
11	Access to markets_mandis for agriculture produce	0.00	ASpGainTaluka	0.00*	0.01	0.00*	0.00*
12	Access to markets_mandis for animal husbandary_dairy_fishing_poultry	0.02	ASpGainTaluka	0.03*	0.05	0.67	0.48
13	Price realization of agricultural produce	0.10	ASpGainTaluka	0.00*	0.13	0.01*	0.00*
14	Shift in agricultural practices or cropping pattern	0.02	ASpGainTaluka	0.00*	0.04	0.28	0.00*
15	Access to construction and infrastructure related jobs	0.02	ASpGainTaluka	0.04*	0.05	0.91	0.00*
16	Number of individuals who travel to a nearby town or city daily jobs	0.00	ASpGainTaluka	0.00*	0.02	0.21	0.00*
17	Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	0.03	ASpGainTaluka	0.10	0.05	0.35	0.01*
18	Number of HHs that own a motor vehicle	0.00	ASpGainTaluka	0.00*	0.04	0.03*	0.00*
19	Maintenance cost for motor vehicle	0.02	ASpGainTaluka	0.00*	0.03	0.05	0.00*
20	New planned economic activities in the household	0.00	ASpGainTaluka	0.00*	0.02	0.01*	0.00*
21	Information about know the actual price of agricultural goods and milk	0.06	ASpGainDistrict	0.02*	0.09	0.01*	0.00*
22	The cases of HHs which used to migrate temporarily	0.05	ASpGainDistrict	0.04*	0.07	0.07	0.00*
23	Instances of landslides/soil disposal/soil erosion	0.00	ASpGainDistrict	0.00*	0.02	0.32	0.00*
24	Impact on environment through pollution of vehicular movement	0.06	ASpGainDistrict	0.09	0.08	0.07	0.01*
25	Safe to use the after PMGSY road has been built	0.03	ASpGainDistrict	0.00*	0.03	0.20	0.33
26	Law and order situation_crime rate in your and neighbouring village	0.04	ASpGainTaluka	0.00*	0.05	0.00*	0.35

*Statistically significant at 0.05 level

Table 5.4.5. Summary of Regression Results of Perception of Access and Other Benefit as Dependent Variables and Relevant Time Saved Variables/ PMGSYRoadPresent (both excluding/including) as Independent Variables (based on HH Dataset)

SNo	Dependent Variables Perception of Access and Other Benefit Variables	PMGSYRoadPresent Variable excluded			PMGSYRoadPresent included		
		R-Squared	Most significant Time Saved Variable	Corresponding p-value	R-Squared	Corresponding p-value	p-value for PMGSYRoadPresent Variable
1	Access to health facilities	0.08	ATimeSavedTaluka	0.02*	0.15	0.05	0.00*
2	Visits to the villages by ANMS_Nurses_Doctors	0.06	ATimeSavedDistrict	0.01*	0.11	0.75	0.00*
3	Availability of Emergency services like 108_Police	0.07	ATimeSavedDistrict	0.00*	0.13	0.30	0.00*
4	Visits by teachers and government officials	0.04	ATimeSavedDistrict	0.00*	0.08	0.00*	0.00*
5	Visits by our friends and relatives	0.03	ATimeSavedDistrict	0.00*	0.06	0.01*	0.00*
6	Regularity of children attending schools located nearby	0.05	ATimeSavedDistrict	0.00*	0.09	0.02*	0.00*
7	Regularity of children attending colleges located nearby	0.09	ATimeSavedDistrict	0.00*	0.11	0.08	0.00*
8	Traffic from and to our village	0.00	ATimeSavedDistrict	0.50	0.02	0.99	0.00*
9	Safety of Travel to and from our village	0.02	ATimeSavedDistrict	0.00*	0.10	0.00*	0.00*
10	Economic activity in our village	0.04	ATimeSavedDistrict	0.00*	0.07	0.01*	0.00*
11	Access to markets_mandis for agriculture produce	0.07	ATimeSavedDistrict	0.00*	0.09	0.00*	0.00*
12	Access to markets_mandis for animal husbandary_dairy_fishing_poultry	0.11	ATimeSavedTaluka	0.03*	0.07	0.67	0.00*
13	Price realization of agricultural produce	0.08	ATimeSavedStateHighway	0.00*	0.05	0.01*	0.00*
14	Shift in agricultural practices or cropping pattern	0.08	ATimeSavedDistrict	0.00*	0.06	0.28	0.00*
15	Access to construction and infrastructure related jobs	0.03	ATimeSavedStateHighway	0.04*	0.05	0.91	0.00*
16	Number of individuals who travel to a nearby town or city daily jobs	0.04	ATimeSavedDistrict	0.00*	0.09	0.21	0.00*
17	Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	0.02	ATimeSavedDistrict	0.10	0.05	0.35	0.00*
18	Number of HHs that own a motor vehicle	0.09	ATimeSavedTaluka	0.00*	0.14	0.03*	0.00*
19	Maintenance cost for motor vehicle	0.03	ATimeSavedStateHighway	0.00*	0.04	0.05	0.00*
20	New planned economic activities in the household	0.05	ATimeSavedDistrict	0.00*	0.08	0.01*	0.00*
21	Information about know the actual price of agricultural goods and milk	0.05	ATimeSavedDistrict	0.02*	0.05	0.01*	0.31
22	The cases of HHs which used to migrate temporarily	0.05	ATimeSavedDistrict	0.04*	0.05	0.07	0.23
23	Instances of landslides/soil disposal/soil erosion	0.03	ATimeSavedDistrict	0.00*	0.06	0.32	0.00*
24	Impact on environment through pollution of vehicular movement	0.09	ATimeSavedStateHighway	0.09	0.05	0.07	0.00*
25	Safe to use the after PMGSY road has been built	0.05	ATimeSavedStateHighway	0.00*	0.07	0.20	0.00*
26	Law and order situation_crime rate in your and neighbouring village	0.05	ATimeSavedTaluka	0.00*	0.07	0.00*	0.00*

*Statistically significant at 0.05 level

The results show that the explanatory power of the model increases significantly by introducing PMGSYRoadPresent as an independent variable as shown by the R-squared values in Table a to z (Appendix 15). The effect of other variables turns to be statistically not significant as shown by the respective t-statistics values.

Thus, it can be inferred that presence of PMGSY is a major explanation for “speed of travel gain” and through the “Speed gain” the access improvements as well as the improvements in aspect of the social, economic and cultural life realised.

Moreover, as shown by the results in Table 5.4.4 and 5.4.5, it may be further concluded that speed gains serve as major explanatory variables for perception in improvement of access. Similar analysis was performed for the time saved variables. (Refer Appendix 16) The results were similar as expected.

Summary

The constructs of the PCA are similarly highly correlated with the “Speed of travel” gains, thus making the “Speed Gain” or (operationally the speed of travel), the core monitorable variable. Thus, for the monitoring and evaluation, Speed Gain and Time Saved on the construction, and maintenance of the speed and times at the optimal level, thereafter can serve as important monitorable variables.

Speed Gain and Time Saved in accessing various administrative headquarters and facilities can serve as important monitor able variables. Further, these need to be monitored on a reduced set of variables. Since the analysis above shows that the impact is captured through outcome variables, a simple monitoring system should be effective.

5.4.II Analysis of the Outcome and Impact by Type of Connectivity and Road Characteristic Variables

In the following, we analyze along the relevant dimensions for HH. Some of the dimensions are the same as for habitations.

5.4.IIa. Speed Gains by Phase of Construction

Table 5.4.6 represents the means of percentage speed gains by type of connectivity for PMGSY and non-PMGSY roads constructed in different phases. The analysis has been performed across twin dimensions. The categorization in the rows is first done by whether the road is PMGSY or not. If it is a PMGSY then further categorization by the phase of construction of the road has been considered. The columns represent access to administrative HQ like Taluka, District, State highway etc. and different facilities like Health centre, Market etc.

Table 5.4.6: Mean Speed Gains by Type of Connectivity for a. Non PMGSY Roads b. PMGSY Roads (by Phase of Construction)
(%)

Type of Road/Phases* 0-Non-PMGSY, 1-PMGSY	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Mandi	Market
0/*	33.69	26.12	43.70	59.95	61.29	35.20	43.95	52.82	74.99	35.46
1/1	37.88	22.26	48.16	33.90	115.94	88.76	56.22	18.12	99.99	101.93
½	60.24	48.69	65.22	73.86	86.86	21.79	61.73	63.14	59.93	67.26
1/3	47.04	34.40	74.68	55.07	69.13	18.62	68.86	51.83	63.85	65.11
¼	36.38	37.81	59.44	72.03	63.75	30.06	66.85	77.22	61.40	59.78
Total	44.08	34.09	64.41	59.61	73.52	26.24	62.49	55.83	67.39	60.19

(Note: 1-Year lower than or equal to 2000, 2-2000-2004, 3-2004-2012, 4-2012-2017, 0-non-PMGSY roads)

*We are not considering speed gains by phases for non-PMGSY roads

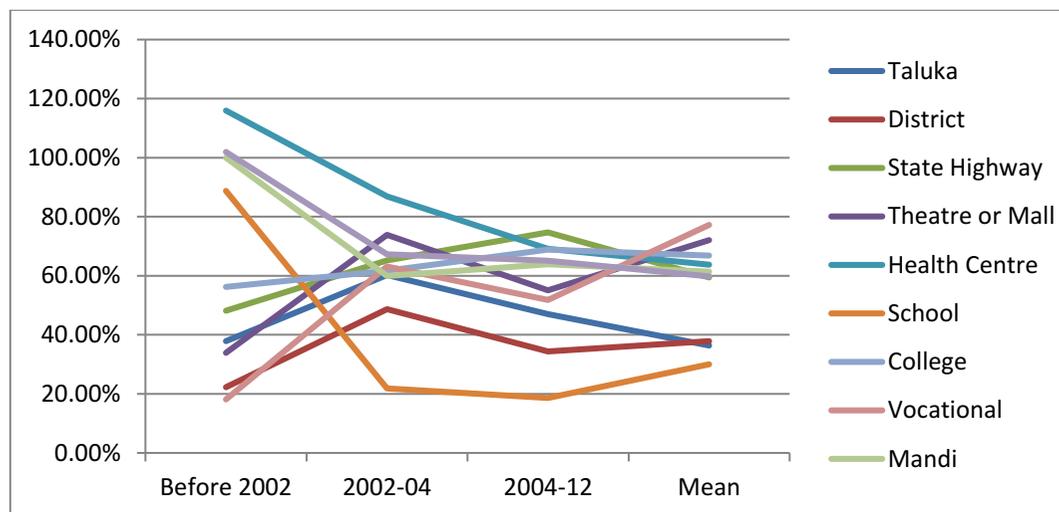


Figure 5.4.1: Trend of Means of Percentage Speed Gains for All Facilities for PMGSY Roads by Phase of Construction

To interpret the table entries, say for instance, the mean percentage speed gain for Taluka in Phase 0 (i.e. for a non-PMGSY road) is 33.69, in Phase 1 is 37.88, in Phase 2 is 60.24, in Phase 3 is 47.04 and in Phase 4 is 36.38. One can observe that the percentage speed gains for different facilities like Taluka, District, State Highway, Theatre or Mall, Mandi etc. increases first through phase 1 to 3 and then there is a decline. The reason is the roads in Phase 4 have still not reached their peak speed gain whilst the roads in phase 1 and 2 are on a decline due to requisite need for maintenance. The same can be observed by looking at the trend of speed gains from Figure 5.4.1 above. This is likely due to elapsed longer period since their construction. Thus, maintenance of the road becomes an important determinant of an optimum speed gain. For the facilities (Health Centre, School, College, Vocational, Industries and Market etc.), the sample size is very small and hence the results for percentage speed gains may not be indicative.

5.4.IIb. Speed Gain by States

Table 5.4.7 represents the means of percentage Speed Gains by Type of Connectivity for PMGSY roads in Bihar, Himachal Pradesh, Jharkhand, Meghalaya, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand.

Table 5.4.7: Speed Gains by Type of Connectivity by States

(%)

State	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Mandi	Market
Bihar	46.87	39.90	75.51	83.36	93.12	26.59	77.01	92.07	92.13	79.22
Himachal Pradesh	35.27	28.16	83.47	51.67	183.97	99.33	154.67	12.59	166.85	116.64
Jharkhand	50.21	45.50	89.30	116.41	79.27	18.50	101.76	98.51	87.05	77.74
Meghalaya	45.17	27.13	71.33	41.39	42.68	50.43	32.92	41.63	50.31	53.97
Punjab	6.18	15.66	6.56	7.42	2.45	2.09	0.81	4.00	2.73	3.77
Rajasthan	68.70	41.64	83.54	64.94	95.57	18.18	71.85	0.00	54.94	89.42
Uttar Pradesh	30.97	27.21	41.65	33.14	38.53	14.90	58.40	28.05	38.07	28.40
Uttarakhand	75.54	44.67	104.82	31.66	60.35	11.45	49.45	76.67	67.23	23.27
Total	44.08	34.09	64.41	59.61	73.52	26.24	62.49	55.83	67.39	60.19

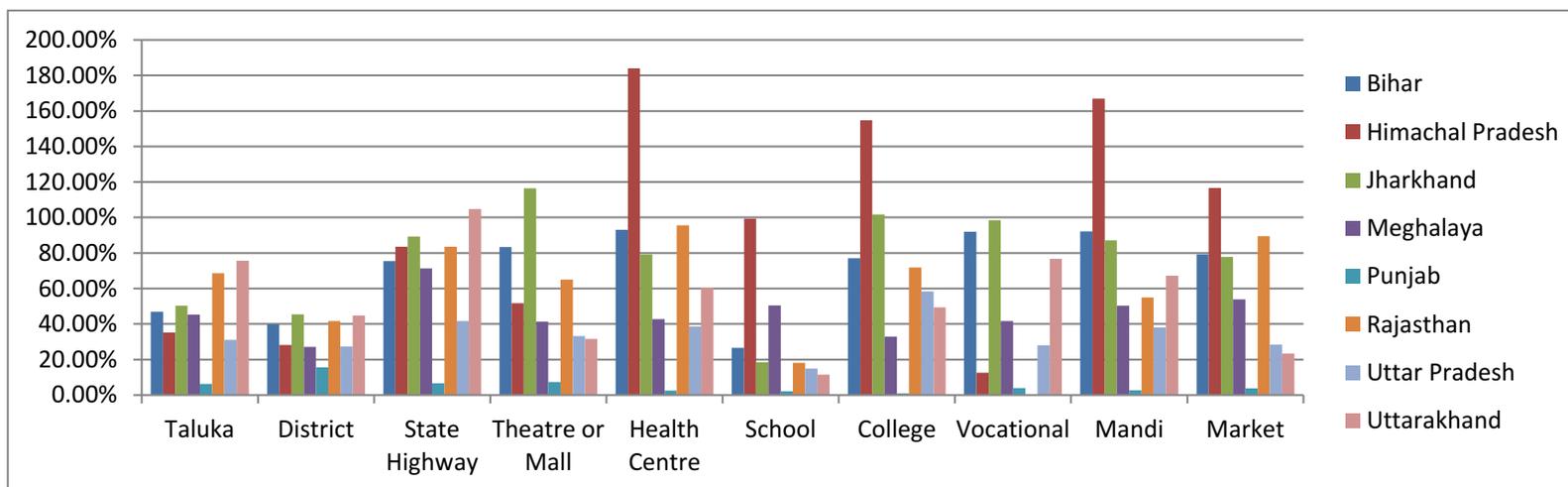


Figure 5.4.2: Trend of Means of Percentage Speed Gains by Type of Connectivity by States

One can observe that in Bihar, Himachal, Jharkhand, Rajasthan and Uttarakhand there are statistically significant percentage speed gains. The trends in Figure 5.4.2 depict the scenario. This can be explained as these states had new roads being built as part of PMGSY program. In case of Punjab, which already had a well-developed rural road network, most of the PMGSY work focusses on upgradation. This did not lead to statistically significant speed gains. The above analysis is also supported by data from OMMAS (Table 1.2 Section 1.3 Chapter 1).

5.4.IIc. Speed Gain by Agro-Climatic Zones

Table 5.4.8 represents the means of percentage Speed Gains by Type of Connectivity for PMGSY roads by Agro-Climatic Zones.

Table 5.4.8: Speed Gains by Type of Connectivity by Agro-Climatic Zones

(%)

Agro-Climatic Zones	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Mandi	Market
0	16.67	0.00	0.00	0.00	0.00	70.83	0.00	0.00	100.00	75.00
1	40.58	29.73	55.42	49.21	55.79	13.74	60.06	49.75	48.56	49.59
2	67.94	76.28	65.12	97.19	96.72	16.46	77.22	0.00	66.30	98.71
3	9.48	46.13	4.00	-4.17	0.10	0.00	0.00	4.00	0.10	0.37
4	45.93	36.18	81.32	40.96	112.59	59.43	57.01	49.09	102.93	74.56
5	91.67	25.48	0.00	0.00	0.00	27.27	27.27	37.62	0.00	11.11
6	49.19	42.71	89.27	110.43	96.26	28.94	92.79	82.12	95.22	85.21
Total	44.08	34.09	64.41	59.61	73.52	26.24	62.49	55.83	67.39	60.19

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

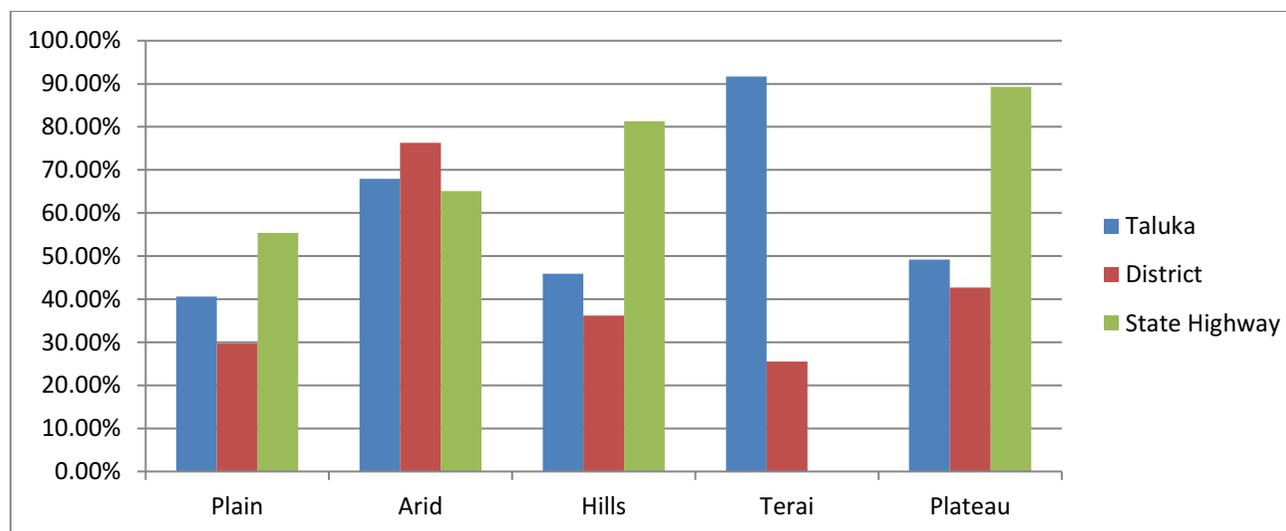


Figure 5.4.3: Trend of Means of Percentage Speed Gains for all Administrative HQ in Different Agro-Climatic Zones

In the trend analysis in Figure 5.4.3, undulating plains have been removed as the sample size is very small and the results may not be indicative. In case of plains, there are no statistically significant Speed Gains. This is because of an already well-developed network of roads that would have existed from before. The PMGSY program however has been able to bring about considerable impact and improvement in speed gains in hilly, terai and plateau areas. As one can see from the trend in Figure 5.4.3 as the terrain gets more difficult from plains to hills, terai and plateau, the percentage speed gain to all administrative HQ like taluka, district and state highways show an increasing trend. Thus, one can infer that the PMGSY roads have been able to bring about more impact in adverse geographical terrains. Even in hills there have been statistically significant speed gains to state highways.

5.4.IId. Speed Gain by Primary Occupation in the HH

Table 5.4.9 represents the means of percentage speed gains by type of connectivity for different primary occupation in the HH.

Table 5.4.9: Speed Gains by Type of Connectivity for Different Primary Occupation in the HH

(%)

Occupation	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Mandi	Market
Own Cultivation	49.78	32.95	60.02	51.65	83.87	30.07	62.81	45.84	68.91	76.08
Agriculture wage labour	46.32	40.00	71.64	75.86	66.80	27.47	56.80	62.88	67.72	52.90
Non Agriculture wage labour	32.45	38.34	35.53	64.45	62.15	70.50	21.21	78.43	57.35	53.64
Dairy Business	33.33	46.19	25.71	30.97	50.00	50.00	0.00	52.00	0.00	44.67
Trade/ Business	29.40	40.14	28.67	56.98	50.42	53.57	21.66	49.25	32.14	49.22
Salaried Employment	37.42	39.55	32.41	72.96	59.81	72.04	23.99	45.85	72.45	48.62
Pension	17.87	63.92	47.59	127.28	51.35	135.14	61.16	85.39	102.64	77.30
Rent	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Dividend	37.50	43.75	25.00	36.67	50.00	32.12	30.00	60.00	0.00	48.33
Student	5.00	40.82	11.33	0.00	0.00	62.50	0.00	0.00	0.00	75.00
Home Maker	375.00	30.81	28.89	2.00	0.00	0.00	0.00	0.00	0.00	102.56

(Note: The total occurrences of the activity need not add up to the 285, as the primary occupation is defined as Rank 1 and Rank 2)

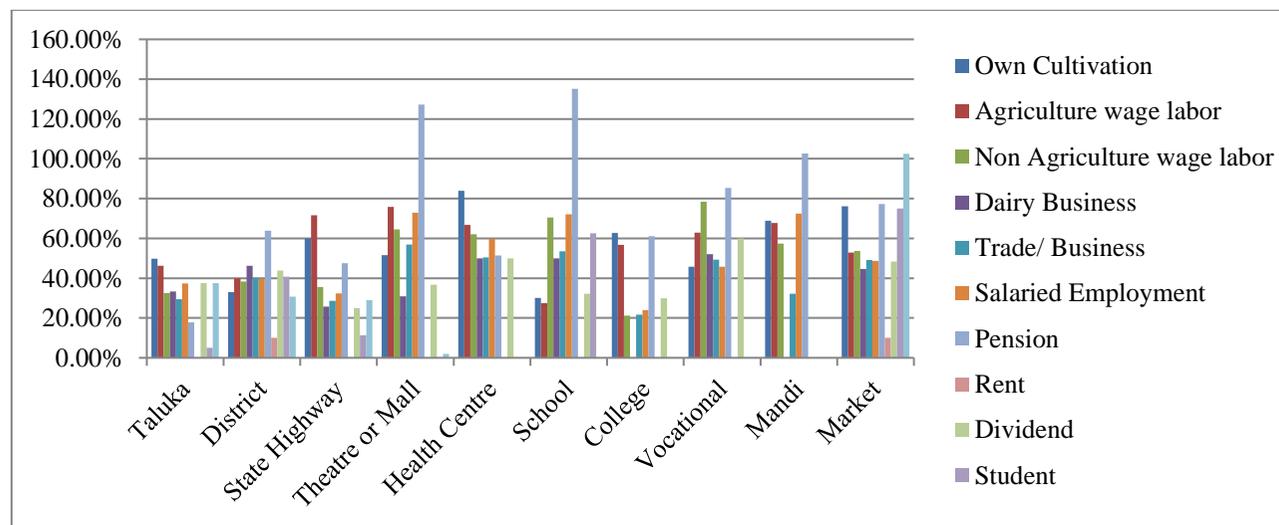


Figure 5.4.4: Trend of Means of Speed Gains by Type of Connectivity by Primary Occupation in the HH

As one can see from the trend in Figure 5.4.4, people having occupations of agriculture, animal husbandry, non-agricultural labour, salaried employees seem to benefit as shown by their higher percentage Speed Gains to various administrative HQ and facilities such as Taluka, District, State Highway, College, Vocational, and Markets etc. Thus, one can infer that these occupations benefit prominently from the construction and maintenance of the PMGSY road. For the occupations of forestry, mining, business/trading, pensioners, people living on rent or dividend etc. the sample sizes are small and hence the results may not be representative and hence have not been shown in the trend analysis.

5.4.III Relative Benefits of PMGSY and non-PMGSY Roads

In the tables, 5.4.10 and 5.4.11 below Speed Gain and Time Saved by Type of Connectivity in presence of PMGSY and non-PMGSY roads is compared.

Table 5.4.10: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

(%)

PMGSY Road Present		Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries
Absent	Mean	0.35	0.46	0.13	0.34	0.26	0.44	0.60	0.61	0.35	0.44	0.53	0.75
Present	Mean	0.68	0.91	0.43	0.48	0.37	0.69	0.60	0.76	0.24	0.66	0.56	0.66
Total	Mean	0.60	0.82	0.35	0.44	0.34	0.64	0.60	0.74	0.26	0.62	0.56	0.67

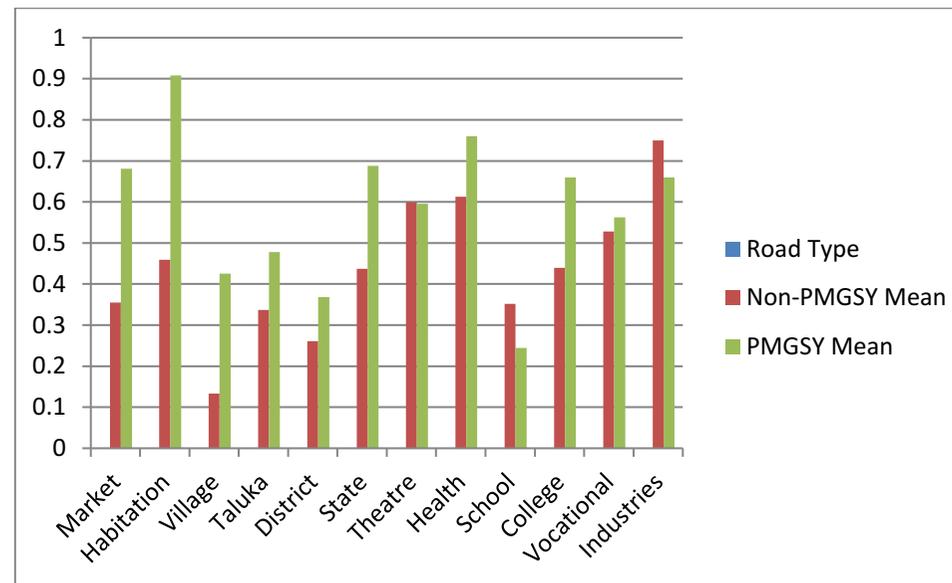


Figure 5.4.5: Trend of Means of Percentage Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

Table 5.4.11: Means of Time Saved by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

(minutes)

PMGSY Road		Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries
Absent	Mean	0.15	0.07	0.16	0.16	0.20	0.29	0.25	0.18	0.17	0.28	0.17	0.30
Present	Mean	0.29	0.17	0.23	0.21	0.33	0.29	0.32	0.13	0.26	0.28	0.17	0.31
Total	Mean	0.25	0.14	0.21	0.20	0.30	0.29	0.31	0.14	0.25	0.28	0.17	0.31

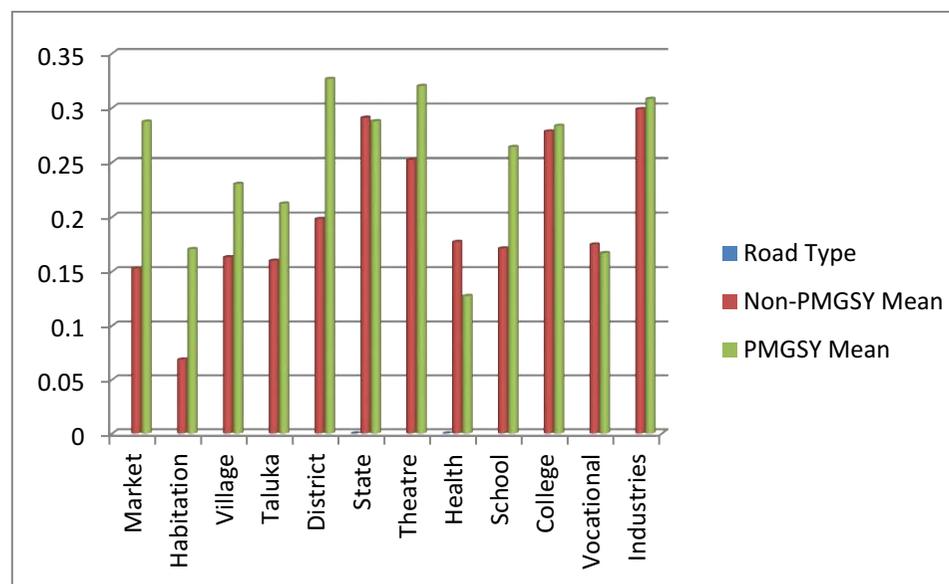


Figure 5.4.6: Trend of Means of Time Saved (in Minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads

From Tables 5.4.10 and 5.4.11, it is quite apparent that there has been increase in Speed Gains and improvement in Time Saved due to presence of PMGSY roads. Only in the case of Schools and Health Centres, this positive impact is not there. This may be because of the fact that schools and health centres would have been in the same or nearby village. Thus, there is no requirement of travel for them. Therefore, there is no apparent Speed Gain and improvement in Time Saved for School and Health Centres for this reason. Figure 5.4.5 and 5.4.6 depict the trends for the same and are self-explanatory.

In the Tables, 5.4.12 and 5.4.13 (Appendix 17), Speed Gain and Time Saved (by States) by Type of Connectivity due to presence PMGSY and non-PMGSY roads are compared. As already explained earlier, in Punjab there is little change because the roads considered were cases of upgradation and good quality roads were already present from earlier.

In Tables 5.4.14 and 5.4.15 (Appendix 17), Speed Gain and Time Saved (by Agro-Climatic Zones) due to presence of PMGSY and non-PMGSY roads are compared. This disaggregated analysis (by States and by Agro-Climatic Zones) of percentage Speed Gain and Time saved will turn out to be useful in finding the optimum Speed Gain and setting a benchmark for Type of Road. The implications of this are significant for design of monitoring variables.

5.4.IV Relative Speed Improvements Before and After the Construction of PMGSY and non-PMGSY Roads

In Table 5.4.16, Time Taken to reach Taluka HQ before and after the construction of PMGSY and non-PMGSY roads are compared (Type of Road) are compared.

Table 5.4.16: Time Taken to Reach Taluka HQ Before and After the Construction of PMGSY and non-PMGSY roads (by Type of Road)

(minutes)

PMGSY Road Present	Type of Road 1	Mean Time Taken		
		Before	After	Reduction
Absent	Gravel Road	105.96	90.64	15.32
	Motorable	30.00	30.00	0.00
	Asphalt	81.36	69.46	11.90
	Cemented	67.39	50.67	16.72
	Total	87.27	73.52	13.75
Present	Gravel Road	116.66	88.69	27.97
	Motorable	80.95	66.42	14.53
	Asphalt	91.15	70.89	20.26
	Cemented	75.54	51.76	23.78
	Total	92.22	70.12	22.10
Total	Gravel Road	112.73	89.40	23.33
	Motorable	74.88	62.08	12.80
	Asphalt	89.47	70.64	18.83
	Cemented	74.00	51.55	22.45
	Total	91.15	70.85	20.30

As shown by Table 5.4.16, there is reduction in time after the construction of both types of roads. The reduction is more in case of PMGSY roads even for Gravel roads. This is possibly because the PMGSY specification is higher than non-PMGSY.

In Table 5.4.17, Time Taken to reach Taluka HQ before and after the construction of PMGSY and non-PMGSY roads is compared (by Type of Road and Phase of Construction).

Table 5.4.17: Time Taken to Reach Taluka HQ Before and After the Construction of PMGSY and non-PMGSY roads (by Type of Road and Phase of Construction)

(minutes)

PMGSY Road Present	Type of Road 1	Phase of Construction	Mean Time Taken			
			Before	After	Reduction	
Absent	Gravel Road	0	105.96	90.64	15.32	
		Total	105.96	90.64	15.32	
	Motorable	0	30.00	30.00	0.00	
		Total	30.00	30.00	0.00	
	Asphalt	0	81.36	69.46	11.90	
		Total	81.36	69.46	11.90	
	Cemented	0	67.39	50.67	16.72	
		Total	67.39	50.67	16.72	
	Total	0	87.27	73.52	13.75	
		Total	87.27	73.52	13.75	
	Present	Gravel Road	2	130.00	63.57	66.43
			3	107.79	85.17	22.62
			4	200.80	164.60	36.20
			Total	116.66	88.69	27.97
Motorable		1	94.29	77.14	17.15	
		3	79.55	65.30	14.25	
		Total	80.95	66.42	14.53	
Asphalt		1	79.26	70.56	8.70	
		2	93.72	71.73	21.99	
		3	90.47	70.97	19.50	
		4	95.70	68.40	27.30	
		Total	91.15	70.89	20.26	
Cemented		1	63.50	37.45	26.05	
		2	58.58	41.19	17.39	
		3	81.87	55.90	25.97	
		4	75.16	52.68	22.48	
		Total	75.54	51.76	23.78	
Total		1	77.31	64.85	12.46	
		2	91.20	66.31	24.89	
		3	92.43	71.29	21.14	
		4	100.15	73.55	26.60	
		Total	92.22	70.12	22.10	
Total		Gravel Road	0	105.96	90.64	15.32
			2	130.00	63.57	66.43
	3		107.79	85.17	22.62	
	4		200.80	164.60	36.20	
	Total		112.73	89.40	23.33	
	Motorable	0	30.00	30.00	0.00	
		1	94.29	77.14	17.15	

PMGSY Road Present	Type of Road 1	Phase of Construction	Mean Time Taken		
			Before	After	Reduction
		3	79.55	65.30	14.25
		Total	74.88	62.08	12.80
		0	81.36	69.46	11.90
	Asphalt	1	79.26	70.56	8.70
		2	93.72	71.73	21.99
		3	90.47	70.97	19.50
		4	95.70	68.40	27.30
		Total	89.47	70.64	18.83
		Cemented	0	67.39	50.67
	1		63.50	37.45	26.05
	2		58.58	41.19	17.39
	3		81.87	55.90	25.97
	4		75.16	52.68	22.48
	Total		74.00	51.55	22.45
	Total	0	87.27	73.52	13.75
		1	77.31	64.85	12.46
		2	91.20	66.31	24.89
		3	92.43	71.29	21.14
		4	100.15	73.55	26.60
		Total	91.15	70.85	20.30

(Note: 1-Year lower than or equal to 2000, 2-2000-2004, 3-2004-2012, 4-2012-2017, 0-non-PMGSY roads)

Table 5.4.17 substantiates the inference drawn from Table 5.4.16. In Table 5.4.18, we show the Time Taken to Reach Taluka HQ Before and After the Construction of PMGSY and non-PMGSY roads by States.

Table 5.4.18: Time Taken to Reach Taluka HQ Before and After the Construction of PMGSY and non-PMGSY Roads (by States)

PMGSY Road Present	State	Mean Time Taken (minutes)		
		Before	After	Reduction
Absent	Bihar	60.47	47.21	13.26
	Himachal Pradesh	61.05	54.91	6.14
	Jharkhand	76.03	55.75	20.28
	Meghalaya	115.94	97.19	18.75
	Rajasthan	48.57	40.48	8.09
	Uttar Pradesh	85.94	72.59	13.35
	Uttarakhand	116.28	105.16	11.12
	Total	81.76	67.99	13.77
Present	Bihar	70.20	48.50	21.70
	Himachal Pradesh	76.20	59.57	16.63
	Jharkhand	73.77	52.77	21.00
	Meghalaya	128.29	103.14	25.15
	Not entered	120.00	97.50	22.50
	Punjab	67.47	58.33	9.14
	Rajasthan	103.38	76.71	26.67
	Uttar Pradesh	91.98	73.51	18.47

PMGSY Road Present	State	Mean Time Taken		
		Before	After	Reduction
	Uttarakhand	172.77	133.47	39.30
	Total	90.22	69.35	20.87
Total	Bihar	67.30	48.12	19.18
	Himachal Pradesh	73.23	58.66	14.57
	Jharkhand	74.46	53.68	20.78
	Meghalaya	123.80	100.98	22.82
	Not entered	120.00	97.50	22.50
	Punjab	67.47	58.33	9.14
	Rajasthan	97.77	73.00	24.77
	Uttar Pradesh	90.33	73.26	17.07
	Uttarakhand	146.79	120.45	26.34
	Total	88.08	69.01	19.07

In Bihar, Jharkhand, Meghalaya, UP, Himachal Pradesh, the non-PMGSY roads were unable to bring about any discernible improvement. However, the PMGSY road had brought about marked improvements in reducing time. As discussed earlier and also shown by the OMMAS data (Refer Section 1.3 Chapter 1) the state of Punjab has cases of upgradation and hence the time reductions is not very discernible. The rural road network in the state of Punjab was already well developed. In the case of Rajasthan, there are significant time reductions although cases of non-PMGSY roads are not there.

In Table 5.4.19, Time Taken to reach Taluka HQ before and after the construction of PMGSY and non-PMGSY Roads (by Agro-Climatic Zones) are compared.

Table 5.4.19: Time Taken to Reach Taluka HQ Before and After the Construction of PMGSY and non-PMGSY Roads (by Agro-Climatic Zones)

(minutes)

PMGSY Road Presence	Agro-Climatic Zones	Mean Time Taken		
		Before	After	Reduction
Absent	1	77.49	68.41	9.08
	4	103.84	87.08	16.76
	5	69.23	55.38	13.85
	6	66.3	46.05	20.25
	Total	81.76	67.99	13.77
Present	0	120	120	0
	1	89.68	69.13	20.55
	2	106	67.61	38.39
	3	48.33	38.33	10
	4	110.19	86.74	23.45
	5	120	90	30
	6	64.37	47.51	16.86
	Total	90.22	69.35	20.87
Total	0	120	120	0
	1	87.21	68.98	18.23
	2	106	67.61	38.39
	3	48.33	38.33	10

PMGSY Road Presence	Agro-Climatic Zones	Mean Time Taken		
		Before	After	Reduction
	4	108.23	86.84	21.39
	5	76	60	16
	6	65.02	47.02	18
	Total	88.08	69.01	19.07

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

In Table 5.4.19, Time Taken to Reach Taluka HQ before and after the construction of PMGSY and non-PMGSY roads (by Agro-Climatic Zone) are compared. For Plains, as expected there is no difference in time before and after between the non-PMGSY roads and PMGSY roads. This is because in plains the type of road does not contribute differentially to time reduction, as the terrain is flat. Data points for Arid and Undulating Plains are very small and hence the results would not be representative. However, for challenging terrains of Hills, Terai and Plateau, the PMGSY roads are able to provide much better time reduction as compared to non-PMGSY roads.

5.4.V Perception of Improvement in Access to Facilities for PMGSY and non-PMGSY Roads

In Appendix 18, perception and opinions of improvement in access to administrative HQ and facilities in presence of PMGSY and non-PMGSY roads is shown. In the presence of PMGSY roads, the perception of access along the 26 dimensions (Refer to the questionnaire in Appendix 19) has either improved somewhat or significantly for most users whereas for non-PMGSY roads, the perception for most users is that of no change or deterioration.

Overall Summary of HH Analysis

The HH level analysis substantiates the findings from the Habitation analysis both on outcome and impact dimensions of PMGSY roads.

5.5 Concluding Remarks

In this Chapter, we analyzed the cited benefits of PMGSY roads, which led to the findings that the most cited benefits are improvement in ease of reach, reduction in travel time and connectivity to a major nearby location.

We also performed the basic data analysis along 26 variables of perception of improvement in access to different kinds of administrative HQ and facilities and extent of socio-economic, environmental or safety-related benefits. This was to highlight the benefits of PMGSY roads and provide support for identifying monitoring variables.

Using PCA, we were able to reduce the number of these variables to reflect the underlying perceptual constructs in the users' cognitive space as many of these are highly correlated. This allows fewer constructs to reflect the perceived benefits. Thus, it will make the model more parsimonious. The following flowchart illustrates the sequence of analysis which will be used to arrive at the measurable outcome variables.

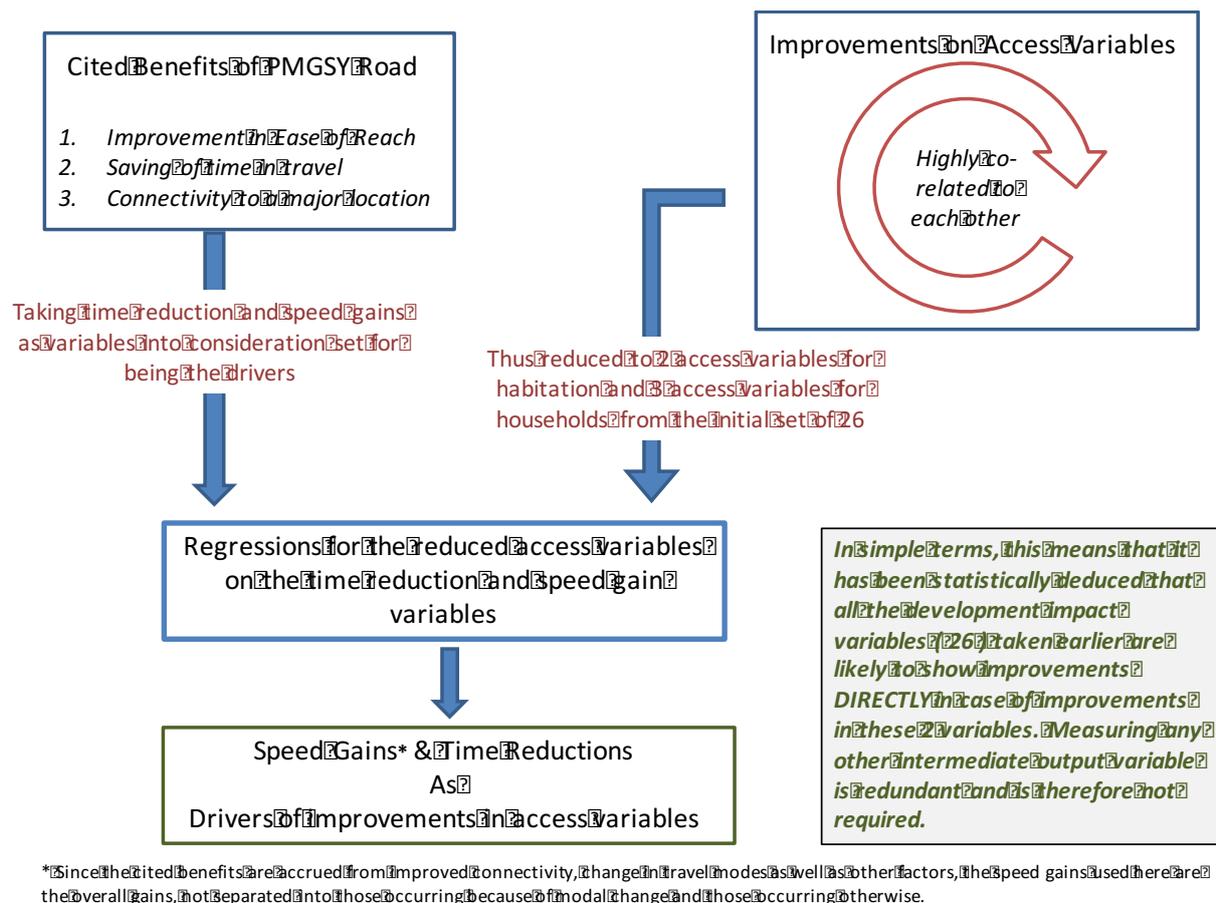


Figure 5.5.1 - Sequence of analysis used to arrive at the Measurable Outcome Variables

Based on this analysis, empirical results of the most cited benefits and the theoretical underpinnings for identifying the monitorable variables, we suggest the Speed Gains in travel and Time Saved as two variables for the outcome monitoring systems. Also, these variables being directly measured and typically carried out close to the road would be pragmatic as well for the roads departments.

We also used these two variables to analyse the outcome and impact along several dimensions by State, Agro-Climatic Zones, Terrains, Type of Connectivity, and its relationship to the road characteristic variables such as Phase of Construction, Type of Road etc. The impact analysis was also carried out for habitations representing differing profiles of the marginalized sections of the society such as SC/ST, BPL card holders, and agricultural labourers. Below we capture the findings:

- The presence of PMGSY road brings about significant and substantial gain in speed of movement (obverse of time reduction), in access to all administrative headquarters and facilities considered. The same is also highly correlated with the access and other benefits claimed and reported by Habitats and HH.
- This is also found to be the case across states and Agro-Climatic Zones.
- The impact of the PMGSY in terms of Speed Gains and Time Saved is less when the road in question was either of small length, or where the prior road was good. (e.g., Punjab).

This is in terms of speed gain improvements and time saved. Nevertheless even there, there is maintenance of the Speed of Travel and of time in the face of rising use.

- iv. The impact is also seen to be more in difficult terrains and Agro-Climatic Zones such as plateau and terai, where the last mile before the PMGSY was uniformly poor.
- v. The quality of road is another important factor. The specifications and most importantly the actual construction quality of PMGSY roads are much better than of other non-PMGSY roads. This being so even when the PMGSY roads are technically “earthen bound roads” or “macadam roads” they are able to yield significant speed gains /time saved. This would imply that the core change that has made the PMGSY better are the organizational, that the arrangements being “incentive compatible” have delivered in a significant way.
- vi. The Phase of Construction of road is an important predictor of the requirement of maintenance of the road. This has become significant because maintenance is not to be assumed given the organizational weaknesses of government roads departments. Thus, the regular monitoring of road quality (emerging bottlenecks, congestion points, small sections of failure, overall surface roughness) and maintenance measures are suggested for holding on to the optimum speeds of travel /time of travel.
- vii. There was decline in quality (as measured by speed gains) over-time due to ageing of roads. Maintenance of roads thus becomes an important aspect of the primary task of the implementation agency. This is obvious. If a road is not maintained well, the quality of the road deteriorates to result in loss of social value.¹⁷
- viii. Villages with higher populations of SC/ST, BPL and other backward sections of the society have indicated similar or (typically) higher speed gains. Thus, construction of PMGSY roads is able to bring about socio-economic benefits to the poor on par with that for the poor or socially backward and sometimes even more than for other sections of society. Since the more “remote” and as before the PMGSY, poorly connected habits would have had larger proportions of tribal and excluded people, and now they are being connected through roads that are distinctly better, hence these results. Being also not a transfer benefit but a benefit that arises out of value creation, the importance of the PMGSY by the improved access it creates, cannot be overstated. These sets of people may otherwise have not been able to leverage road connectivity in the existing administrative and political framework. Thus, their inclusion via better connectivity can be attributed to the PMGSY.
- ix. From the various correlational analyses, Principal Component Analysis (PCA) and regressions carried out in the study on the habitat and HH dataset, one can infer that presence of PMGSY road is the major driver of perception in improvement of access. This happens measurably through speed gains and time saved to various administrative headquarters and facilities.

¹⁷ The biases against poor maintenance arises from the poor incentive compatibility of public investments to ensure this. The distinction between plan and non-plan incentivized the state governments to neglect maintenance. There are other distortions in the fiscal process as well.

Chapter 6. Economic Impact

6.1 Measures of Economic Impact

We have calculated the economic impact of PMGSY based on the habitat data by using two measures i.e. Population Weighted Mean of the Percentage Speed Gain (Refer Table 6.2.1) and Income Weighted Mean of the Percentage Speed Gain (Refer Table 6.3.1). An alternative was to use Time Saved.

6.2 Population Weighted Mean Percentage Speed Gain

The population weighted mean of the percentage Speed Gain was obtained by calculating the weighted average of the Speed Gain to Taluka across all habitation using the habitation/village population as the weights. This is because we consider being able to reach to Taluka headquarters swiftly as a critical benefit for the villagers. This is the most indicative of all other benefits of construction of roads. The analysis was done for both cases where PMGSY and non-PMGSY roads are present. This is shown in Table 6.2.1.

Table 6.2.1: Economic Impact of Road Calculated through Population Weighted Mean of Percentage Speed Gain

Road Type		Multiplier of Speed Gain and Population	Speed Gain (%)	Population as per Respondent (nos)	Population Weighted Mean of Percentage Speed Gain (%)
Non-PMGSY	Mean	915	.26	2761	
	N	44	44	68	
	Sum	40269	11	187760	0.21
PMGSY	Mean	1644	.63	2753	
	N	182	182	214	
	Sum	299321	115	589278	0.51
Total	Mean	1502	.5595	2755	
	N	226	226	282	
	Sum	339590	126	777038	0.44

For the non-PMGSY roads, the population weighted mean of the Percentage Speed Gain is 0.21 while for the PMGSY roads the population weighted mean of the Percentage Speed Gain is 0.51.

6.3 Income Weighted Mean Percentage Speed Gain

In a similar vein, the Income Weighted Mean of the Percentage Speed Gain was obtained by calculating the weighted average of the Speed Gain to Taluka using the multiplier of average HH income and habitation/village population as the weights. It was done for both cases where PMGSY and non-PMGSY roads are present. The results are shown in Table 6.3.1.

Table 6.3.1: Economic Impact of Road Calculated Through Income Weighted Mean of Percentage Speed Gain

Road Type		Multiplier of Speed Gain, Population and Avg. HH Income	Speed Gain (%)	Population as per Respondent (nos)	Avg. HH Income (Rs)	Income Weighted Mean of Speed Gain (%)
Non-PMGSY	Mean	90520339	.26	2761	328880	0.09
	N	59	44	68	67	
	Std. Dev	363606402	.69	2903	1679125	
PMGSY	Mean	133427690	.63	2753	81934	0.59
	N	191	182	214	207	
	Std. Dev	842364428	.71	3430	123574	
Total	Mean	123301555	.56	2755	142319	0.31
	N	250	226	282	274	
	Std. Dev	756686212	.72	3306	839319	

For the non-PMGSY roads, the income weighted mean of the percentage speed gain is 0.09 while for the PMGSY roads the population weighted mean of the percentage speed gain is 0.59. This shows that there is significant difference between the two. The presence of PMGSY contributes to the Speed Gain significance.

6.4 Summary

The results from Table 6.2.1 and 6.3.1 show that there is significant economic impact of PMGSY roads as measured by Population Weighted and Income Weighted Speed Gains. The economic impact is more, where PMGSY roads are presents vis-à-vis non-PMGSY roads. The Population Weighted mean of Percentage Speed Gain for PMGSY and non-PMGSY roads are 0.51 and 0.21 respectively. While the income weighted mean of percentage speed gain for PMGSY and non-PMGSY roads are 0.59 and 0.09 respectively. It may be noted that the differences are significant and more so in the latter case.

Chapter 7. Conclusions and Recommendations

7.1 Summary of Findings

- i. The results from Chapter 5 show that the presence of PMGSY road brings about significant and substantial gain in speed of movement (obverse of time reduction), in access to all administrative headquarters and facilities considered.
- ii. This is also found to be the case by states and Agro-Climatic Zones.
- iii. The PMGSY is able to bring about more impact in states where there is new construction vis-à-vis states where improvement of the existing network has happened (e.g., Punjab). This is in terms of speed gain improvements and time saved.
- iv. The impact is also seen to be more in difficult terrains and Agro-Climatic Zones such as plateau and terai, where there were not so well developed network of roads earlier.
- v. The quality of road is another important factor. The specifications and most importantly the actual construction quality of PMGSY roads are much better than of other non-PMGSY roads, such that even when the PMGSY roads are technically “gravel roads” they are able to yield significant speed gains.
- vi. The Phase of Construction of road is an important predictor of the requirement of maintenance of the road. Thus, its regular monitoring and subsequent maintenance measures are suggested for optimum speed gains.
- vii. There was decline in quality (as measured by speed gains) over-time due to ageing of roads. Maintenance of roads thus becomes an important aspect of the primary task of the implementation agency. This is obvious. If a road is not maintained well, the quality of the road deteriorates to result in loss of social value.
- viii. Villages with higher populations of SC/ST, BPL and other backward sections of the society have indicated similar or (typically) higher speed gains. Thus, construction of PMGSY roads is able to bring about socio-economic benefits to the poor on par with that for the poor or socially backward and sometimes even more than for other sections of society. Since the more “remote” and as before the PMGSY, poorly connected habits would have had larger proportions of tribal and excluded people, and now they are being connected through roads that are distinctly better, hence these results. Being also not a transfer benefit but a benefit that is arising out of value creation the importance of the PMGSY by the improved access it creates, cannot be overstated. These sets of people may otherwise have not been able to leverage for road connectivity in the existing administrative and political framework, thus their inclusion via better connectivity can be attributed to the PMGSY.
- ix. From the various correlational analyses, Principal Component Analysis (PCA) and regressions performed on the habitat and HH dataset, one can infer that presence of PMGSY road is the major driver of perception in improvement of access. This happens measurably through speed gains and time saved to various administrative headquarters and facilities.

- x. For monitoring and evaluation, speed gain and time saved can serve as important variables. Also, these variables being directly measured and typically carried out close to the road would be pragmatic as well for the roads departments.
- xi. The economic impact through population and income weighted mean of the speed gain in the presence of PMGSY roads and in their absence with other roads being present shows there were significant gains due to the presence of PMGSY.
- xii. There was decline in quality (as measured by speed gains) over-time due to ageing of roads. Maintenance of roads thus becomes an important aspect of the primary task of the implementation agency. This is obvious. If a road is not maintained well, the quality of the road deteriorates to result in loss of social value.
- xiii. Besides the study above, our various interactions with RRDA, SRRDA and other functionaries brought out the need to focus on:
 - f. The required connectivity to Habitations with a population of 500 persons and above in plain areas, 250 persons and above in special category states that have emerged in Census 2011.
 - g. Re-layering of early PMGSY roads and other rural roads.
 - h. Maintenance system (based on vehicle profiling)
 - i. Improving network reliability (interconnecting villages)
 - j. Removing bottlenecks on higher level roads.

7.2 Summary of Approach to the Study

The objectives of the study were:

- i. To develop a simple and practical, yet robust standardized outcome monitoring system for PMGSY which could be used regularly and is capable of being scaled up.
- ii. To test this system in selected states through the conduct of limited period surveys to ascertain the impact of the program in these states.
- iii. To embed this monitoring system within a broader framework for poverty alleviation as part of the GoI's 12th Five Year Plan (2012-17).
- iv. In specific context of poverty alleviation to study the impact on agriculture.*
- v. To design the monitoring system in a way that it enables the user to develop recommendations that could be used to modify the program suitably.

*We made this a part of main study, rather than as an additional study based on our discussions with NRRDA held on June 24, 2016 at New Delhi.

The objectives of the study identified above were fulfilled by taking the following measures:

- i. We focused on the primary variables of Speed Gains and Time Saved by types of connectivity. Since we wanted to capture the influence of PMGSY road, our study has examined both these parameters in the presence of PMGSY and non-PMGSY road. This

was done across the road characteristic variables (such as Phase of Construction, Type of Roads, Agro-Climatic Zones and States).

- ii. The secondary benefits which depend on a number of other variables have been captured through user surveys to understand perceived benefits of PMGSY roads. These were used to derive a smaller set of variables for incorporating into future surveys.
- iii. Considering the broader framework for poverty alleviation as part of the GoI's 12th Five Year Plan (2012-17), the Habitation analysis in Chapter 5 included variables on SC/ST population, BPL population and Agricultural Labour population. This was to understand the impact of presence and maintenance of PMGSY roads on these marginalized populations.
- iv. Since our study has identified a small set of variables as outcome monitoring variables across the different phases and quality of roads, this process can be scaled. This was an eight state study with consideration for various Agro-Climatic Zones that capture various terrains and socio-economic profiles. Thus, the model is largely representative of the diverse terrains and socio-economic profiles.
- v. The perception about access and other variables include specific questions on agriculture e.g. price realization of agricultural produce, access to market/mandi for agricultural produce, shift in agricultural practices or cropping pattern etc. The Speed Gain and Time Saved also include questions on time saved to mandi etc. This was to ensure that the study captures the impact on agriculture and its supply chain. Specific focus on impact on agriculture is ensured by analyzing impact across Agro-Climatic Zones. Accessibility to markets/mandis for various agro-based products is also investigated. This has helped us to embed the aspects of agricultural supply chain in our analysis.

7.3 Recommendations for Variables of Monitoring and Evaluation Database

The presence of PMGSY road, percentage Speed Gain and Time Saved variables are important variables to be monitored. Therefore, the suggestion is that Monitoring and Evaluation (M & E) database should annually collect data on percentage Speed Gain and Time Saved on PMGSY roads. The speed gain and time saved primarily depend on the following:

- a. Phase of the Road
- b. Type of Road
- c. States
- d. Agro-Climatic Zones

The process for arriving at the optimum percentage Speed Gain/ Time Saved for each Agro-Climatic Zone in a particular state are as follows:

- i. NRRDA should conduct periodic or annual studies to look at optimum speed. These may be derived by carrying out studies across newly-developed PMGSY in specific Agro-Climatic Zone in that state. This may then be used as a benchmark against the speed gains derived in similar surveys across the state and the previous survey. Any reduction will indicate the need to either widen or maintain the road.

- ii. The survey is to be done on a sampling basis. Data on traffic and vehicle types will make the calculation of optimum speed more granular. Further, based on our analysis of the perception and opinions about access variables by their explanatory powers of the variance (Refer Table 5.3.2 and 5.4.1) for habitation and HH data respectively, the desired questionnaire may be designed and administered.
- iii. Alternatively, after the new construction when the PMGSY road is at its best, the speeds at those times may be recorded. Any fall/rise in speed/time from the same should be a matter of concern. Some bikes and four-wheelers (tractors) are the most important modes of transport for which the monitoring needs to be done. The survey should identify the new roads and existing roads that are to be covered. Similar data for point to point Village to Taluka Headquarter, District Headquarter, and State Highway, Mandi connectivity etc. may be monitored regularly.
- iv. This data may be entered into a specifically designed Excel or IT system for monitoring and evaluation.
- v. The survey should be done through applications (apps) on handheld devices. These should automatically link the data captured into the M&E database. This would require NRRDA to develop the relevant apps on handheld devices and have the data consolidated at a central location.
- vi. The survey instrument used is capable of capturing the socio-economic, environmental or safety-related benefits of the PMGSY road. The survey instrument uses 26 items in the scale. However, based on a systematic analysis using PCA we propose a reduced set of 16 items for the survey instrument for the Habitat.

Appendices

Appendix 1: NRRDA Officers

Sr No	Name	Designation	Date
1	Mr Rajesh Bhushan	Director General, NRRDA	June 24, 2016
2	Mr I K Pateriya	Director, Technical	
3	Mr Mahesh Hiremath	Director, Projects- I	
4	Mr R Basvaraja	Director, Projects-II	
5	Mr Uttam Kumar	Director, Projects-III	
6	Dr Ashok Kumar	Task Team leader, WB	
7	Mr A K Sharma	Consultant, WB	
8	Mr Hashin Khan	Consultant Engineer, WB	

This was a kick-off meeting to develop a common understanding of the roads ahead.

Appendix 2: BRRDA Officers

Sr No	Name	Designation	Date
1	Mr Ram Sagar Choudhary	Superintending Engineer (SE), Rural Works Department (RWD), Aurangabad	July 6, 2016
2	Mr Rameshwar Choudhary	Executive Engineer (EE), RWD, Paliganj	
3	Mr Ashok Kumar Gupta	RWD, Phulparas	
4	Mr Prakash Gupta	EE, RWD, Sheohar	
5	Mr Vijay Sheel Kashyap	EE, RWD, Triveniganj	
6	Mr Raushan Kumar	Assistant Engineer (AE)	
7	Mr Arbind Kumar	EE, RWD, Kahalgaon	
8	Mr Binod Kumar	RWD, Areraj	
9	Mr Sanjeev Kumar	EE, RWD, Masaurhi	
10	Mr Satish Kumar	EE, RWD, Bagha-2	
11	Mr Sanjaya Kumar	Secretary, BRRDA	
12	Mr Arun Kumar Mahto	Chief Engineer (CE)-2, RWD, Patna	
13	Mr Rajeshwar Mishra	EE, RWD, Benipur	
14	Mr Yogeshwar Pandey	RWD, Chapra-2	
15	Mr Ashok Kumar Paswan	EE, RWD, Begusarai	
16	Mr Anand Prakash	AE, PMGSY	
17	Mr Jai Prakash	RWD, Buxar	
18	Mr K N Prasad	SE/State Quality Coordinator (SQC)	
19	Mr Raghubir Prasad	RWD, Manjhaul Bakhri	
20	Mr Ram Chandra Ram	RWD, Siwan-1	
21	Mr Ram Ratan Ram	EE, RWD, Dehri	
22	Mr Sheo Pratap Singh	AE, PMGSY	
23	Mr Moti Sagar Singh	RWD, Harnaut	
24	Mr Purendra Prasad Singh	EE, RWD, Motihari	
25	Mr Rajeev Nayan Prasad Singh	EE-cum-Admin. Officer, BRRDA	
26	Mr Vishwabandhu Rajeev Ranjan	AE, RWD	

These officers had come to attend a program on Project Management at IIMA. We had a brainstorming session on the indicators that could be used to monitor impact of rural roads.

Appendix 3: RRRDA Officers

Sr No	Name	Designation	Date
1	Mr R D Meena	WB, PWD	July 25, 2016
2	Mr Manwar Ali	SE, Rural Circle, Jaipur	
3	Mr G Maheshwari	Additional CE-Zone-II, Jaipur	
4	Mr Rakesh Gupta	SE, PMGSY	
5	Mr Deepak Gera	EE, PMGSY	
6	Mr K M Modi		
7	Mr Udai Singh Jarad	EE, PMGSY	
8	Mr Rajesh Sharma	EE, PMGSY	
9	Mr Om Prakash Bunkar	EE, PMGSY	
10	Mr Anil Kumar	AE, PMGSY	
11	Mr R K Verma	AE, PMGSY	
12	Mr Gopal Lal Mathur	CE, Jaipur	
13	Mr Arvind Kisiyl	EE, PMGSY	
14	Mr Govind Gopal Goyal	AE, PMGSY	
15	Mr Satya Narain Sharma	AE, PMGSY	

This was to understand the context of RRP-II in Rajasthan and discuss the possible outcome monitoring parameters. We visited three PMGSY roads, one of which was beyond its defect liability period. The other two were more recent.

Appendix 4: References

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Appendix 5: Details of the Field Visits

a. List of People met

Bihar (August 24, 2016)

Sr No	Name	Designation and Organization
1	Mr Vinod Kumar	Assistant Engineer, RWD, Patna
2	Mr Arjun Prasad Sinha	Assistant Engineer, RWD,
3	Bhagwat Agarwal	

Himachal Pradesh (August 23, 2016)

Sr No	Name	Designation and Organization
1	Mr A K Abrol	CE-(PMGSY)-Shimla
2	A meeting with all senior officials of SRRDA was organized on 20th September 2016.	

Jharkhand (August 23, 2016)

Sr No	Name	Designation and Organization
1	Mr Anugrah Prakash	SQC, JSRRDA
2	Mr Shyamashish Verma	EE, JSRRDA
3	Mr Satyendra Kr Sinha	EE, JSRRDA
4	Mr Manish Keshri	IT Nodal Officer
5	Mr Bal Kishore Pathak	AE, JSRRDA
6	Mr Subodh Paswan	AE, JSRRDA
7	Mr Ramdeo Mandal	EE, JSRRDA
8	Mr Vijay Kr Agrawal	AE, JSRRDA
9	Mr Binod Kumar	AE, JSRRDA
10	Mr Kashrf Naim	JE, JSRRDA
11	Mr Praveen Kumar	GIS Nodal Officer, JSRRDA
12	Mr Sanjiv Kumar	JE RWD, Ranchi, Kanke
13	Mr Ashraf-udin Ahmad	AE RWD(W), Ranchi II
14	Mr Ashish Kumar	RWD(W), Ranchi, PMGSY
15	Mr Abhishek Kumar	DY Manager, IRCON International Ltd
16	Mr Bijay Patra	Site Engineer, IRCON International Ltd

Meghalaya (August 22, 2016)

Sr No	Name	Designation and Organization
1	Mr M Phanbuh	Secretary, PWD
2	Mr B Kharbulli	CE, PWD(R)
3	Mr P R Marwein	Additional CE cum Empowered Officer, SRRDA
4	Mr P Khiewtam	Joint Secretary and Nodal Officer, SRRDA
5	Mr F Marbaniang	SE, PWD, NH Circle, Shillong
6	Mr T Laloo	EE(T/C), NH Circle cum DPIU(PMGSY), Ribhoi District
7	Mr B Rapsang	SE(E), PWD
8	Mr P E Hynnienta	EE(T/C) cum DPIU, East Khasi hills, Shillong
9	Mr A Dhakar	EE(T/C) cum DPIU, West Garo hills, Tura

10	Mr M B Roin	IT Nodal Officer, SRRDA
11	Mr J V Lyngdoh	SE, PWD, West Khasi hills circle, Nongstoin
12	Mr R Lyttan	SE, PWD(R), Jowai circle, Jowai
13	Mr S Warbah	EE(T/C), O/O SE(R), Jowai circle, Jowai
14	Mr C S Diengdoh	EE, SRRDA
15	Mr P Kharumnuid	AEE, SSRDA

Punjab (September 20, 2016)

Sr No	Name	Designation and Organization
1	Dr. N.S. Kalsi	Additional Chief Secretary, Deptt. Of PWD, Govt. Of Punjab.
2	Sher Mohammed	
3	A meeting with all senior officials of SRRDA was organized on September 22, 2016.	

Rajasthan (July 25, 2016)

Sr No	Name	Designation and Organization
1	Mr Rakesh Gupta	SE, RRRDA, Jaipur
2	Mr Govind Gopal Goyal	Assistant Engineer, PWD, Rajasthan
3	Mr Satya Narain Sharma	Assistant Engineer, PWD, Rajasthan
4	Mr A K Sharma	Consultant WB, NRRDA-World Bank
5	Mr Uttam Kumar	Director (Quality of Roads), Projects-II, NRRDA
6	Mr I K Pateriya	Director, Technical, NRRDA
7	Dr Ashok Kumar	Task Team leader, World Bank
8	Mr R Basvaraja	Director, Projects-II, NRRDA
9	Mr Mahesh Hiremath	Director, Projects- I, NRRDA
10	Mr Hashin Khan	Consultant Engineer (WB), NRRDA
11	Mr Rajesh Bhushan	Joint Secretary, NRRDA

Uttar Pradesh (August 25, 2016)

Sr No	Name	Designation and Organization
1	Mr RBK Rakesh	CE
2	Mr S K Rastogi	SQC/SE
3	Mr S P Tripathi	EE-Maintenance
4	Mr Quddus Ansari	EE-DPR
5	Mr Satish Chandra	EE- Tender/ Project
6	Mr SVS Ranga Rao	CEO, Rural Development
7	Mr Dinesh Kumar	AE, PWD
8	Mohd Murtaza	IT Cordinator

Uttarakhand (August 18, 2016)

Sr No	Name
1	Mr Gaur
2	Mr Manish Mittal

b. Details of the Field Visits and Outcomes

1. Districts and villages visited
2. Monitorable indicators
3. General key learnings
4. Key learnings/findings: State wise
5. Criteria for selection of villages/habitation
6. Sampling details
7. Districts and villages visited

State	District/s	Village/s	Roads
Bihar	Patna	Sadisopur	3
Himachal Pradesh	Shimla, Kandaghat	Khalini, Kotkhai, Wakna	3
Jharkhand	Gumla, Burmu-Ranchi	Tongo, Morha, Lohra Kocho, Ara Dewar	3
Meghalaya	Ri Bhoi, East Khasi	Unkaduh, Bahamkoram, Unkar Priyang, Umshakait, Kherpati-Mawlang	3
Punjab	Fatehgarh Sahib	Mandi Gobindgarh, Khamano	3
Rajasthan	Amber-Jaipur	Chak Nangal, Chirada	3
Uttar Pradesh	Itaunja, Bakshi ka Talab, Barabanki-Lucknow	Mal, Kathwara, Aseni	3
Uttarakhand	Dehradun	Mohammadpur Barkali	2

Coverage (Preliminary Visits)

Monitorable Indicators Road Quality Upgradation (by PWD)

Time and cost to reach facilities: markets, warehouses, chilling centers, schools, health centres

Quality of road, re-layering

Quality of drainage

Access to Health: PHCs, availability of doctors, medicines, emergency services.

Education: Schools (primary, secondary, higher secondary), colleges

Skill training facilities, Employment

Skill training facilities, migration patterns

Agri and food facilities

farm machinery, warehouse

Transportation services

Supplementary facilities like electricity, water.

Monitorable Indicators

Increase in Quality of life

Vehicle ownership: two-wheelers, cycles, three-wheelers, four wheelers

Pucca houses

Law and order

Outcomes

Agri Supply Chain

Changes in cropping patterns (cash crops)

Increase in warehousing, chilling centres

Reduction in input and transportation costs

Health

Increase in: PHCs, availability of doctors, medicines, emergency services.

Education

Increase in Schools (primary, secondary, higher secondary), colleges

Employment:

Changes in migration patterns

Increase in women/community participation

Outcomes

Safety

Number of accidents

Complementary Road Schemes

Other schemes

Complementary to PMGSY (road related varies state wise)

Criteria for Selection of Villages

Criteria for Selecting Villages

Bihar

1. Topographically
 - a. North Gangetic plains,
 - b. Central Bihar ie Terai Plain
 - c. South Bihar plateau.
 - d. East and West Part of the state - Ganga River Belt
2. Proximity to mining belts
3. Proximity to big cities
4. Tourism – Religious and Non-Religious
5. Industrial/ Non-industrial
6. Agro Climate Zones
7. Naxal Affected Regions/Regions impacted by extremism

Himachal Pradesh

1. Topographically
 - a. Terai plain
 - b. Hills (Upper hills, Lower hills)
2. Valleys
3. Proximity to big cities
4. Tourism

5. Industrial/ Non-industrial
6. Agro Climate Zones

Jharkhand

1. Topographically
 - a. Terai plain
 - b. Plateau
 - c. Hilly Areas
 - d. Forest
2. Proximity to mining belts
3. Proximity to big cities
4. Tourism
5. Industrial/ Non-industrial
6. Agro climatic Zones
7. Naxal Affected Regions/Regions impacted by extremism

Meghalaya

1. Topographically
- Ri bhoi, South Garo and West Khasi hills regions.
2. Border: Near the international border and away from the international border.
 3. Tourism: Tourism, non-tourism area.
 4. Proximity to big city
 5. Three agro-climatic zones

Punjab

1. Topographically
 - a. Terai plain
2. Canal: Near the canal and away from the canal.
3. Border: Near the international border and away from the international border.
4. Proximity to big cities
5. Tourism
6. Industrial/ Non-industrial
7. Agro Climatic zones

Rajasthan

1. Region: Mewar and Marwar.
2. Topography: Near and away from the mountains
3. Canal: Near and away from the canal.
4. Border: Near and away from the international border
5. Tourism: Tourism, non-tourism area.
6. Proximity to big city: Take Jaisalmer/Bikaner/Jodhpur as a big city.
7. Major national highway: Near the national highway and away from the national highway.

Uttar Pradesh

1. Topographically
 - a. Terai plain
 - b. Along the Yamuna/Ganga Belt
2. Developed/Developing Geographies within the state i.e. Western UP/Central UP/Eastern UP.
3. Proximity to big cities
4. Tourism
5. Industrial/ Non-industrial
6. Agro Climatic Zones

Uttarakhand:

Region: Gharwal and Kumaun

1. Topographically
 - a. Terai plain: Areas near Roorkee, Haridwar.
 - b. Hills (Upper Hills, Lower Hills): Areas near Kasauni, Nainital, Almora, Landsdown, Pitogarh, Dhanaulti
 - c. Valleys (Typically around Ganga, Jamuna and Alaknanda rivers): Areas near Rudraprayag, Devprayag, Bageshwar, Gopeshwar, Jhapeswar, Chamoli, Dehradun.
2. Proximity to big cities i.e. Roorkee, Dehradun, Haridwar, Mussourie, Nainital.
3. Hills (Upper Hills, Lower Hills): Areas near Kasauni, Nainital, Almora, Landsdown, Pitogarh, Dhanaulti
4. Valleys (Typically around Ganga, Jamuna and Alaknanda rivers): Areas near Rudraprayag, Devprayag, Bageshwar, Gopeshwar, Jhapeswar, Chamoli, Dehradun.
5. Proximity to big cities i.e. Roorkee, Dehradun, Haridwar, Mussourie, Nainital.

6. Tourism: Consider all religious routes as well (Hindu and Buddhist)
7. Industrial/ Non-industrial
8. National parks: Areas inside Rajaji and Corbett national park.
9. Border: Near and away from the international border.

Criteria for HH Selection in Habitats

- At least 2 agricultural households to be covered
- At least take 2 households at the as per the social group (i.e. SC, ST). Out of this:
- One household should be economically good.
- One household should be from the economically backward class.
- At least take 2 households who are economically backward class but should not be socially backward strata
- At least take 2 households that have benefitted from the road connectivity (i.e. they have people travelling for work daily and using the PMGSY road)
- At least take 3 households or 33% of the households in habitation (whichever is lower) where women of the household are the respondents and using PMGSY roads.

Note: The availability of roads (i.e. the number of months the road is available in a year) must be inquired.

General Key Learnings

- *Do not close PMGSY in 2019*
- *Not enough funds for maintenance*
- *Better standards than PWD*
- *Cost of construction depends on the terrain For example: higher cost in hilly areas, slopes. Therefore, benchmarks should be state or locale specific*
- *Selection of routes should be based on connectivity to next largest center rather than to be within the limit of the district*
- *Increase in vehicle ownership is questioning the PMGSY specifications.*
- *Pipes must be put where people want rather than norms*
- *Safety: When culverts are made, but not enough length of culvert. It is extended as it becomes a bridge but not enough money to provide for it.*
- *Better lifestyle because of roads*
- *Better housing facilities i.e. pukka houses*
- *Because of overloading, roads are getting degraded.*
- *Width of road is less; it is thin for traffic even at crossroads. Cross drainage and culverts are biggest issue.*

Key Learnings/Findings: State wise

Bihar

- Gram Tola Sampark Nischaya Yojana (GTSNY): 100 – 250 population
- 7th Nischaya:
- 35% reservation for women in government job.
- Credit card loans for 12th unemployed students- 4 lakh loans.
- Provide each house with drainage and road-Har ghar ko pakki nali ya gali.
- Provide each house with water through taps.
- ODF (Open Defecation Free)
- Electricity will increase, thermal power will increase.
- Gaddha Mukh Sadak Yojana (GMSY)
- Other User Ministries perspective:
- Vehicle Ownership:
- MORTH has proposed that smaller vehicles be used.

- Many states supported that there should be an agency DRDA that will identify routes, types of vehicles, *drivers* (unemployed).
- Financing by central government.
- Agriculture:
 - Farm machinery introduced lately. Ownership increased. Combined harvester introduced lately.
 - 50% subsidy started (2006-07). So, economic activity increased.
 - Acceptability of farm mechanization.
 - Agriculture department (APC) has asked for farm connectivity as entrepreneurs are developing value chains.
- Warehouse
 - District wise enhancement of warehousing.
 - Market yards, CWC, PACs, PEG (in private land).

Himachal Pradesh

- Floriculture/vegetables increased after metal roads.
- Industrial areas have been developed after road construction
- Community participation in Performance based maintenance contract (PBMC) contractor- composition of community- 30% women at PBMC.
- Direct and cheaper transport of crops, vegetables and fruits to various cities
- Kuccha roads for 500 m, the villagers want it to be metaled.
- Some PMGSY roads which can be rated as different levels depending on their usage and importance. Their width can be widened.
- Hill states cannot be compared with plain states. We need higher curvatures but because of gifting, people give minimum.
- Policy for HP: No compensation for land acquisition.
- 72% land classified as forest land, even common pool land.
- Maintenance of PMGSY of earlier phases built in 1999-2000 are now due for maintenance but no focus. Some MNREGA fund can come through PBMC.
- Connectivity: 1.5 m for Himachal Pradesh is not desirable, because traversing 1.5 m is more difficult than in plains.
- Earlier PMSGY not giving fund for bridges, but now it is provided. But now 40 m length (width) bridges should be double lane, but PMGSY not supporting it.
- Other Schemes
 - Maintenance cannot be done through MNREGA. It is a specialized task.
 - MNREGA fund may not be available at that time.
 - Staff may not be skilled.

Jharkhand

- Naxal infested area: Mortality rate due to extremism coming down.
- After 2019, we should work towards maintenance. If we increase design life, it is directly proportional to cost. 30,000 km completed rural roads, out of total 60,000 km.
- Rural roads should be under a single nodal agency because roads under different departments are different quality. Coordination across RWD, DA, MnREGA, forest.
- Core network created in 2006, but now population increased.
- Through roads must be increased to 5.5 km, so that states can focus on “their” roads.
- Maintenance repair division- Huge assets. Earlier 100% central, now 60% central and state 40%
- 3.00-3.75 m is called for upgradation or Kutcha- black top- upgradation

Meghalaya

- Heavy dependence on agriculture
- Walk to motorized vehicles
- Increase in student and teacher presence (more difficult terrain)
- Easier access during pregnancy (emergency), increase in 108 services, but more are required
- Land prices near the roads are more, away from the road are lesser.
- Number of four wheelers increased due to tax
- Move away from habitat to a cluster
- Road policy for Meghalaya did not exist before no process for design quality monitoring
- Internal connectivity has problems because PMGSY does not allow for this
- Road length 1.5 km within cluster. It should be increased to 2 km for hills.
- Access roads of poor quality
- Narrow roads lead to higher maintenance: concentration of tyre on a specific area of road and the road gets damaged.
- Provide 3 m width, but with increase in vehicles, it will not be sufficient. Width of 3.75 m is better from a safety point of view.

Punjab

- Safety and service levels along with the average speed have increased.
- Non-rural traffic is also using through roads
- This year more than Rs 1400 Cr spent on maintenance on rural roads. Rs 400 Cr PIDB (Punjab Infrastructure Development Board): cess on petrol and diesel, Market committees raise loan, RDF, Mandi Board.
- Mandi Cess: 4% on wheat sold at Mandi (Rs 878 Cr, 2015-16)
- 2% RDP (Road NW + Other Services) -2% Mandi Board (Road)
- 20 km/MLA constituency for a rural connectivity (100 rural population). Link roads prioritized.
- Selection of roads for maintenance: Those that need carpeting and where maintenance was done more than 6 years ago.
- Land is fertile but land holding decreases. Acquisition is difficult and handicapped to upgradation. New act will make it more difficult.
- Utility shifting, land acquisition etc. are borne by state.
- Panchayat only does street, cow shelters, lanes.
- Roads have been widened but bridges haven't been widened which leads to accidents. Bridges not covered by PMGSY. Allow two lanes for bridges even when road width is 3.05 m.
- Every village should have at least one road of 5.5m.
- Upgradation/width should be done on a width of 8.38m land → 5.5m metaled.

Rajasthan

- Pre-PMGSY: Road construction was of a lower standard. Difficult to maintain. Now, IRC standards have improved.
- It is not the students present but teacher's absenteeism decreases.
- Laborers used to travel back only in 15 days, now every day. Therefore, less use of urban electricity, water. Also, bought their own vehicles.
- Use of advanced construction method
- Increase in mining (Specification of PMGSY inadequate)
- No initial planning for selection of road and quality. Priorities for road construction with politicians. There is no standard policy.
- Connecting roads are not in a good quality
- New connectivity is for habitations but not for larger villages.
- PWD had functional people on location for taking care of roads. 75% of engineers will retire in 5 years. Ordinary maintenance was being done but in future lack of people.

- Roads constructed in 2001, are now near period of maintenance. For districts that have poor weather conditions, will now require maintenance.
- Selection of roads from Panchayati Raj, but could not amalgamate the funds available from them.
- Leverage funds and human resources from Gramin Vikas and increase asset quality.

Uttar Pradesh

- 2001 census → 250 → 500+ uncovered
- Additional core network to cover 500+ will be more than 15000 kms
- Along PMGSY road, MNREGA used for afforestation.
- Increase in vaccination
- E-108 target minimum 30 PHC
- 1090 police chowki: Mahila helpline
- Women participation in panchayat meetings increased
- Patrolling in border areas has increased
- Increase in frequency of accidents because of less width.
- Extra layering not permitted
- Connecting public places in village through PMGSY
- Experiment:
- Cold mix
- Waste material
- CC blocks
- Nano Technology
- Eco-friendly, 15% less time for construction, cost: possibly Rs 40 lakh.
- Flyash for upgradation road is not possible.
- *Other Schemes*
- Ambedkar Gram Yojana and Lohia Smagra Gram Yojana
- School + Electricity + Toilets + Housing: To be done by PWD
- Small habitat, SC/ST, BPL
- PWD norms followed by Ambedkar Scheme PMGSY
- Maintenance is not part of construction.
- MNREGA movement allowed, if MnREGA work does not exist in the village.

Uttarakhand

- Road safety issues because of the terrain
- Working season less than 6 months in hilly areas
- We are lagging in maintenance- DLP- 5 years. Within 5 years, write letters to contractors (5% of total contract value- Performance security)
- Lack of drainage: Policy is to clean twice for drainage.
- Surface renewal is being done regularly, but because drainage is not done.
- Many villages do not have just connectivity, so no concept of link routes.

Appendix 6: Perception of Cited Benefits by Type of Connectivity due to the PMGSY Road

Table 5.3.1: Perception of Cited Benefits of PMGSY Road

Benefits of PMGSY road to reach Markets					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	81	28.4	46.6	46.6
	Reduction in travel time	37	13.0	21.3	67.8
	Increase in income_business	6	2.1	3.4	71.3
	Improvement in connectivity to major outside location	46	16.1	26.4	97.7
	Easy to commute	1	.4	.6	98.3
	Improvement in travel safety	1	.4	.6	98.9
	Easier to walk	1	.4	.6	99.4
	Development of village	1	.4	.6	100.0
	Total	174	61.1	100.0	
Major non-PMGSY Road	Not Applicable	108	37.9		
	System	3	1.1		
	Total	111	38.9		
Total		285	100.0		
Benefits of PMGSY road to reach Habitat of higher order					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	24	8.4	39.3	39.3
	Reduction in travel time	21	7.4	34.4	73.8
	Improvement in connectivity to major outside location	16	5.6	26.2	100.0
	Total	61	21.4	100.0	
Major non-PMGSY Road	Not Applicable	221	77.5		
	System	3	1.1		
	Total	224	78.6		
Total		285	100.0		
Benefits of PMGSY road to reach village of higher order					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	18	6.3	54.5	54.5
	Reduction in travel time	10	3.5	30.3	84.8
	Improvement in connectivity to major outside location	1	.4	3.0	87.9
	Easy to commute	2	.7	6.1	93.9
	Improvement in travel safety	1	.4	3.0	97.0
	More vehicles now in village	1	.4	3.0	100.0
	Total	33	11.6	100.0	
Major non-PMGSY Road	Not Applicable	249	87.4		
	System	3	1.1		
	Total	252	88.4		
Total		285	100.0		
Benefits of PMGSY road to reach Taluka HQ					
		Frequency	Percent	Valid Percent	Cumulative Percent

Habitat with PMGSY Road	Improvement in ease of reach	60	21.1	54.1	54.1
	Reduction in travel time	47	16.5	42.3	96.4
	Increase in income_business	2	.7	1.8	98.2
	Improvement in connectivity to major outside location	1	.4	.9	99.1
	Development of village	1	.4	.9	100.0
	Total	111	38.9	100.0	
Major non-PMGSY Road	Not Applicable	171	60.0		
	System	3	1.1		
	Total	174	61.1		
Total	285	100.0			
Benefits of PMGSY road to reach District HQ					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	53	18.6	44.5	44.5
	Reduction in travel time	60	21.1	50.4	95.0
	Improvement in connectivity to major outside location	4	1.4	3.4	98.3
	Easier to walk	1	.4	.8	99.2
	Development of village	1	.4	.8	100.0
	Total	119	41.8	100.0	
Major non-PMGSY Road	Not Applicable	163	57.2		
	System	3	1.1		
	Total	166	58.2		
Total	285	100.0			
Benefits of PMGSY road to reach State Highway at its nearest point					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	52	18.2	54.7	54.7
	Reduction in travel time	32	11.2	33.7	88.4
	Increase in income_business	4	1.4	4.2	92.6
	Improvement in connectivity to major outside location	2	.7	2.1	94.7
	Easy to commute	2	.7	2.1	96.8
	Improvement in travel safety	1	.4	1.1	97.9
	Easier to walk	1	.4	1.1	98.9
	More vehicles now in village	1	.4	1.1	100.0
	Total	95	33.3	100.0	
Major non-PMGSY Road	Not Applicable	187	65.6		
	System	3	1.1		
	Total	190	66.7		
Total	285	100.0			
Benefits of PMGSY road to reach Theatre/Mall					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	45	15.8	52.9	52.9
	Reduction in travel time	36	12.6	42.4	95.3
	Improvement in connectivity to major outside location	3	1.1	3.5	98.8
	Development of village	1	.4	1.2	100.0
	Total	85	29.8	100.0	
Major non-PMGSY Road	Not Applicable	197	69.1		
	System	3	1.1		
	Total	200	70.2		

Total		285	100.0		
Benefits of PMGSY road to reach Health Centre					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	71	24.9	57.3	57.3
	Reduction in travel time	30	10.5	24.2	81.5
	Increase in income_business	2	.7	1.6	83.1
	Improvement in connectivity to major outside location	15	5.3	12.1	95.2
	Easy to commute	4	1.4	3.2	98.4
	Improvement in travel safety	1	.4	.8	99.2
	Easier to walk	1	.4	.8	100.0
	Total	124	43.5	100.0	
Major non-PMGSY Road	Not Applicable	158	55.4		
	System	3	1.1		
	Total	161	56.5		
Total		285	100.0		
Benefits of PMGSY road to reach School					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	52	18.2	56.5	56.5
	Reduction in travel time	16	5.6	17.4	73.9
	Improvement in connectivity to major outside location	5	1.8	5.4	79.3
	Improvement in travel safety	5	1.8	5.4	84.8
	Easier to walk	5	1.8	5.4	90.2
	Development of village	9	3.2	9.8	100.0
	Total	92	32.3	100.0	
Major non-PMGSY Road	Not Applicable	190	66.7		
	System	3	1.1		
	Total	193	67.7		
Total		285	100.0		
Benefits of PMGSY road to reach College					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	57	20.0	60.0	60.0
	Reduction in travel time	33	11.6	34.7	94.7
	Increase in income_business	1	.4	1.1	95.8
	Improvement in connectivity to major outside location	1	.4	1.1	96.8
	Easier to walk	1	.4	1.1	97.9
	Development of village	2	.7	2.1	100.0
	Total	95	33.3	100.0	
Major non-PMGSY Road	Not Applicable	187	65.6		
	System	3	1.1		
	Total	190	66.7		
Total		285	100.0		
Benefits of PMGSY road to reach Vocational Training Centre					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	33	11.6	53.2	53.2
	Reduction in travel time	26	9.1	41.9	95.2
	Improvement in connectivity to major outside location	3	1.1	4.8	100.0
	Total	62	21.8	100.0	

Major non-PMGSY Road	Not Applicable	220	77.2		
	System	3	1.1		
	Total	223	78.2		
Total		285	100.0		
Benefits of PMGSY road to reach Industrial Cluster					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in ease of reach	12	4.2	57.1	57.1
	Reduction in travel time	6	2.1	28.6	85.7
	Increase in income_business	1	.4	4.8	90.5
	Improvement in connectivity to major outside location	1	.4	4.8	95.2
	Development of village	1	.4	4.8	100.0
	Total	21	7.4	100.0	
Major non-PMGSY Road	Not Applicable	261	91.6		
	System	3	1.1		
	Total	264	92.6		
Total		285	100.0		
Benefits of PMGSY road to reach Mandi/APMC					
		Frequency	Percent	Valid Percent	Cumulative Percent
Habitat with PMGSY Road	Improvement in each of reach	54	18.9	49.5	49.5
	Reduction in travel time	35	12.3	32.1	81.7
	Increase in income_business	15	5.3	13.8	95.4
	Improvement in connectivity to major outside location	4	1.4	3.7	99.1
	Easier to walk	1	.4	.9	100.0
	Total	109	38.2	100.0	
Major non-PMGSY Road	Not Applicable	173	60.7		
	System	3	1.1		
	Total	176	61.8		
Total		285	100.0		

Appendix 7: Perception of Improvements in Access due to PMGSY Roads

Table 5.3.2: Correlations between Perception of Access and Other Benefit Variables

		Access to health facilities	Visits to the villages by ANMS_Nurses_Doctors	Availability of Emergency services like 108_Police	Visits by teachers and government officials	Visits by our friends and relatives	Regularity of children attending colleges located Traffic from and to our village	Maintenance of PMGSY road	Safety of Travel to and from our village	Economic activity in our village	Access to markets_mandis for agriculture produce	Access to markets_mandis for animal	Price realization of agricultural produce	Shift in agricultural practices or cropping pattern	Access to construction and infrastructure related jobs	Number of individuals who travel to a nearby town or city	Number of individuals who travel to a nearby town or city	Number of HHs that own a motor vehicle	Maintenance cost for motor vehicle	The cases of HHs which used to migrate temporarily to migrate temporarily	Instances of landslides_soil disposal_soil erosion	Impact on environment through pollution of vehicular	Safe to use the after PMGSY road has been built	Law and order situation_crime rate in your	Connectivity to nearby villages	Connectivity to nearby major centre	
Access to health facilities	Pearson Correlation	1.0	0.7	0.7	0.6	0.8	0.7	0.5	0.3	0.4	0.6	0.5	0.3	0.3	0.2	0.2	0.6	0.3	0.6	0.2	0.4	0.0	0.1	0.6	0.2	0.3	0.4
	Sig. (2-tailed)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	0.0	0.0	0.0	0.0	0.0
	N	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0
Visits to the villages by ANMS_Nurses_Doctors	Pearson Correlation	0.7	1.0	0.7	0.7	0.6	0.5	0.2	0.3	0.5	0.5	0.3	0.3	0.2	0.2	0.6	0.3	0.5	0.2	0.4	0.1	0.1	0.5	0.2	0.3	0.4	
	Sig. (2-tailed)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0
	N	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0
Availability of Emergency services like 108_Police	Pearson Correlation	0.7	0.7	1.0	0.7	0.7	0.5	0.5	0.2	0.3	0.5	0.5	0.4	0.3	0.1	0.3	0.5	0.4	0.5	0.1	0.4	0.0	0.1	0.6	0.1	0.4	0.4
	Sig. (2-tailed)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.8	0.0	0.1	0.0	0.0	0.0	0.0
	N	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0
Visits by teachers and government officials	Pearson Correlation	0.6	0.7	0.7	1.0	0.7	0.6	0.5	0.2	0.4	0.5	0.5	0.3	0.3	0.2	0.3	0.5	0.3	0.6	0.2	0.4	0.0	0.1	0.6	0.2	0.3	0.3
	Sig. (2-tailed)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	N	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0
Visits by our friends and relatives	Pearson Correlation	0.8	0.7	0.7	0.7	1.0	0.7	0.5	0.3	0.4	0.6	0.6	0.4	0.4	0.2	0.3	0.6	0.4	0.6	0.2	0.4	0.0	0.2	0.6	0.2	0.4	0.4
	Sig. (2-tailed)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
	N	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0

Table 5.3.3: Correlations between Perception of Access Variables and Variables for Percentage Speed Gains to Various Administrative Headquarters and Facilities

		Access to health facilities	Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries	Mandi
Access to health facilities	Pearson Correlation	1.00	0.13	0.35	0.35	0.25	0.18	0.11	0.12	-0.01	0.06	-0.04	0.02	0.03	0.11
	Sig. (2-tailed)		0.04	0.00	0.01	0.00	0.01	0.23	0.18	0.92	0.54	0.66	0.88	0.90	0.18
	N	266.00	255.00	82.00	56.00	158.00	181.00	126.00	126.00	168.00	116.00	129.00	72.00	18.00	146.00
SpGainMarket	Pearson Correlation	0.13	1.00	0.51	0.59	0.38	0.25	0.58	0.13	0.09	0.09	0.40	0.33	0.23	0.19
	Sig. (2-tailed)	0.04		0.00	0.00	0.00	0.00	0.00	0.13	0.22	0.34	0.00	0.01	0.36	0.03
	N	255.00	262.00	87.00	55.00	163.00	186.00	129.00	128.00	170.00	118.00	129.00	72.00	18.00	148.00
SpGainHabitation	Pearson Correlation	0.35	0.51	1.00	0.64	0.60	0.50	0.52	0.67	0.37	-0.04	0.67	0.67	-0.02	0.44
	Sig. (2-tailed)	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.97	0.00
	N	82.00	87.00	87.00	38.00	64.00	70.00	43.00	47.00	57.00	38.00	42.00	28.00	6.00	60.00
SpGainVillage	Pearson Correlation	0.35	0.59	0.64	1.00	0.63	0.53	0.68	0.50	0.54	-0.21	0.78	0.41	0.22	0.51
	Sig. (2-tailed)	0.01	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.11	0.60	0.00
	N	56.00	55.00	38.00	57.00	45.00	50.00	29.00	33.00	28.00	20.00	29.00	16.00	8.00	32.00
SpGainTaluka	Pearson Correlation	0.25	0.38	0.60	0.63	1.00	0.78	0.59	0.30	0.49	-0.13	0.82	0.75	-0.21	0.29
	Sig. (2-tailed)	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.44	0.00
	N	158.00	163.00	64.00	45.00	164.00	146.00	106.00	107.00	117.00	92.00	103.00	68.00	16.00	113.00
SpGainDistrict	Pearson Correlation	0.18	0.25	0.50	0.53	0.78	1.00	0.52	0.26	0.41	-0.12	0.72	0.82	-0.04	0.27
	Sig. (2-tailed)	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.00	0.27	0.00	0.00	0.87	0.00
	N	181.00	186.00	70.00	50.00	146.00	186.00	127.00	114.00	129.00	94.00	122.00	69.00	17.00	119.00
SpGainStateHighway	Pearson Correlation	0.11	0.58	0.52	0.68	0.59	0.52	1.00	0.13	0.37	-0.14	0.58	0.58	0.29	0.19
	Sig. (2-tailed)	0.23	0.00	0.00	0.00	0.00	0.00		0.20	0.00	0.22	0.00	0.00	0.37	0.07
	N	126.00	129.00	43.00	29.00	106.00	127.00	129.00	93.00	107.00	74.00	97.00	58.00	12.00	90.00
SpGainTheatreMall	Pearson Correlation	0.12	0.13	0.67	0.50	0.30	0.26	0.13	1.00	0.51	0.00	0.09	0.25	-0.09	0.92
	Sig. (2-tailed)	0.18	0.13	0.00	0.00	0.00	0.01	0.20		0.00	0.99	0.40	0.05	0.77	0.00
	N	126.00	128.00	47.00	33.00	107.00	114.00	93.00	128.00	98.00	68.00	99.00	60.00	14.00	94.00
SpGainHealthCentre	Pearson Correlation	-0.01	0.09	0.37	0.54	0.49	0.41	0.37	0.51	1.00	0.27	0.33	0.70	0.28	0.36
	Sig. (2-tailed)	0.92	0.22	0.00	0.00	0.00	0.00	0.00	0.00		0.01	0.00	0.00	0.32	0.00
	N	168.00	170.00	57.00	28.00	117.00	129.00	107.00	98.00	170.00	107.00	117.00	67.00	15.00	133.00
SpGainSchool	Pearson Correlation	0.06	0.09	-0.04	-0.21	-0.13	-0.12	-0.14	0.00	0.27	1.00	-0.16	-0.29	-0.21	-0.06

	Sig. (2-tailed)	0.54	0.34	0.84	0.38	0.21	0.27	0.22	0.99	0.01		0.16	0.04	0.56	0.55
	N	116.00	118.00	38.00	20.00	92.00	94.00	74.00	68.00	107.00	118.00	82.00	50.00	10.00	99.00
SpGainCollege	Pearson Correlation	-0.04	0.40	0.67	0.78	0.82	0.72	0.58	0.09	0.33	-0.16	1.00	0.83	0.14	0.10
	Sig. (2-tailed)	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.16	0.00	0.00	0.60	0.29
	N	129.00	129.00	42.00	29.00	103.00	122.00	97.00	99.00	117.00	82.00	129.00	67.00	17.00	104.00
SpGainVocational	Pearson Correlation	0.02	0.33	0.67	0.41	0.75	0.82	0.58	0.25	0.70	-0.29	0.83	1.00	0.43	0.15
	Sig. (2-tailed)	0.88	0.01	0.00	0.11	0.00	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.11	0.25
	N	72.00	72.00	28.00	16.00	68.00	69.00	58.00	60.00	67.00	50.00	67.00	72.00	15.00	65.00
SpGainIndustries	Pearson Correlation	0.03	0.23	-0.02	0.22	-0.21	-0.04	0.29	-0.09	0.28	-0.21	0.14	0.43	1.00	0.16
	Sig. (2-tailed)	0.90	0.36	0.97	0.60	0.44	0.87	0.37	0.77	0.32	0.56	0.60	0.11	0.58	
	N	18.00	18.00	6.00	8.00	16.00	17.00	12.00	14.00	15.00	10.00	17.00	15.00	18.00	15.00
SpGainMandi	Pearson Correlation	0.11	0.19	0.44	0.51	0.29	0.27	0.19	0.92	0.36	-0.06	0.10	0.15	0.16	1.00
	Sig. (2-tailed)	0.18	0.03	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.55	0.29	0.25	0.58	
	N	146.00	148.00	60.00	32.00	113.00	119.00	90.00	94.00	133.00	99.00	104.00	65.00	15.00	148.00

Appendix 8: Regression of various access variables as dependents and speed Gain variables and PMGSYRoadPresent variable (both excluding and including) as independent variables (based on Habitation dataset)

Table a: Access to health facilities regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainHealthCentre, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_01
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.564 ^a	.318	.299	1.20840

a. Predictors: (Constant), ASpGainHealthCentre, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.085	4	24.021	16.450	.000 ^b
	Residual	205.894	141	1.460		
	Total	301.979	145			

a. Dependent Variable: RQ30_01
b. Predictors: (Constant), ASpGainHealthCentre, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.267	.124		10.248	.000
	ASpGainTaluka	-.077	.182	-.052	-.422	.674
	ASpGainDistrict	.640	.231	.316	2.777	.006
	ASpGainStateHighway	.414	.185	.215	2.242	.027
	ASpGainHealthCentre	.261	.106	.205	2.471	.015

a. Dependent Variable: RQ30_01

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_01
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974 ^a	.949	.947	.33228

a. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.522	5	57.304	519.018	.000 ^b
	Residual	15.457	140	.110		

Total	301.979	145		
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a. Dependent Variable: RQ30_01

b. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.055	.045		1.217	.225
	PMGSYRoadPresent	2.856	.069	.962	41.531	.000
	ASpGainTaluka	.003	.050	.002	.058	.954
	ASpGainDistrict	.036	.065	.018	.552	.581
	ASpGainStateHighway	.002	.052	.001	.040	.968
	ASpGainHealthCentre	.005	.030	.004	.157	.876

a. Dependent Variable: RQ30_01

Table b: Visits to the villages by ANMS_Nurses_Doctors regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_02

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.942 ^a	.887	.883	.49756

a. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	270.182	5	54.036	218.275	.000 ^b
	Residual	34.411	139	.248		
	Total	304.593	144			

a. Dependent Variable: RQ30_02

b. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.068		.547	.585
	PMGSYRoadPresent	2.736	.103	.913	26.461	.000
	ASpGainTaluka	.018	.075	.012	.239	.812
	ASpGainDistrict	.049	.097	.024	.501	.617
	ASpGainStateHighway	-.010	.077	-.005	-.131	.896
	ASpGainHealthCentre	.042	.045	.033	.945	.346

a. Dependent Variable: RQ30_02

Table c: Availability of Emergency services like 108_Police regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka ^b	.	Enter
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a. Dependent Variable: RQ30_03
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971 ^a	.943	.941	.35131

a. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.196	5	57.239	463.774	.000 ^b
	Residual	17.155	139	.123		
	Total	303.352	144			

a. Dependent Variable: RQ30_03
b. Predictors: (Constant), ASpGainHealthCentre, PMGSYRoadPresent, ASpGainDistrict, ASpGainStateHighway, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.048		.387	.699
	PMGSYRoadPresent	2.849	.073	.952	39.034	.000
	ASpGainTaluka	.025	.053	.017	.472	.638
	ASpGainDistrict	-.004	.069	-.002	-.065	.949
	ASpGainStateHighway	.019	.055	.010	.351	.726
	ASpGainHealthCentre	.023	.031	.018	.732	.465

a. Dependent Variable: RQ30_03

Table d: Visits by teachers and government officials regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainCollege, ASpGainSchool, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_04
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980 ^a	.961	.959	.30010

a. Predictors: (Constant), ASpGainCollege, ASpGainSchool, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	236.436	6	39.406	437.557	.000 ^b
	Residual	9.546	106	.090		
	Total	245.982	112			

a. Dependent Variable: RQ30_04
b. Predictors: (Constant), ASpGainCollege, ASpGainSchool, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.041		.907	.367
PMGSYRoadPresent	2.888	.077	.978	37.731	.000
ASpGainTaluka	.022	.060	.015	.364	.717
ASpGainDistrict	.063	.093	.031	.679	.499
ASpGainStateHighway	.008	.064	.004	.119	.905
ASpGainSchool	-.044	.071	-.014	-.619	.537
ASpGainCollege	-.065	.092	-.036	-.714	.477

a. Dependent Variable: RQ30_04

Table e: Visits by our friends and relatives regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.963 ^a	.928	.926	.39188

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	282.059	4	70.515	459.163	.000 ^b
	Residual	21.961	143	.154		
	Total	304.020	147			

a. Dependent Variable: RQ30_05

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.053		.695	.488
PMGSYRoadPresent	2.843	.079	.955	35.978	.000
ASpGainTaluka	.029	.058	.020	.502	.617
ASpGainDistrict	.009	.076	.004	.116	.908
ASpGainStateHighway	-.009	.060	-.005	-.158	.875

a. Dependent Variable: RQ30_05

Table f: Regularity of children attending colleges located nearby regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	ASpGainVocational, ASpGainSchool, ASpGainStateHighway, PMGSYRoadPresent, ASpGainVillage ^b	.	Enter

- a. Dependent Variable: RQ30_06
 b. Tolerance = .000 limit reached.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.977 ^a	.954	.950	.19063

a. Predictors: (Constant), ASpGainVocational, ASpGainSchool, ASpGainStateHighway, PMGSYRoadPresent, ASpGainVillage

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	40.176	5	8.035	221.121	.000 ^b
Residual	1.926	53	.036		
Total	42.102	58			

a. Dependent Variable: RQ30_06

b. Predictors: (Constant), ASpGainVocational, ASpGainSchool, ASpGainStateHighway, PMGSYRoadPresent, ASpGainVillage

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.026		1.428	.159
	PMGSYRoadPresent	2.963	.551	.977	5.381	.000
	ASpGainVillage	3.625E-13	.472	.000	.000	1.000
	ASpGainStateHighway	-3.490E-13	.416	.000	.000	1.000
	ASpGainSchool	4.350E-13	.488	.000	.000	1.000
	ASpGainVocational	1.307E-13	.138	.000	.000	1.000

a. Dependent Variable: RQ30_06

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	ASpGainHabitation	. ^b	.	.	.	.000
	ASpGainTaluka	. ^b	.	.	.	.000
	ASpGainDistrict	. ^b	.	.	.	.000
	ASpGainCollege	. ^b	.	.	.	.000

a. Dependent Variable: RQ30_06

b. Predictors in the Model: (Constant), ASpGainVocational, ASpGainSchool, ASpGainStateHighway, PMGSYRoadPresent, ASpGainVillage

Table g: Traffic from and to our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_07

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536 ^a	.287	.272	1.22889

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
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1	Regression	87.582	3	29.194	19.332	.000 ^b
	Residual	217.465	144	1.510		
	Total	305.047	147			

a. Dependent Variable: RQ30_07

b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.346	.123		10.904	.000
	ASpGainTaluka	.011	.181	.008	.062	.951
	ASpGainDistrict	.644	.233	.319	2.759	.007
	ASpGainStateHighway	.522	.182	.272	2.865	.005

a. Dependent Variable: RQ30_07

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b		Enter

a. Dependent Variable: RQ30_07

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986 ^a	.971	.971	.24726

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	296.305	4	74.076	1211.620	.000 ^b
	Residual	8.743	143	.061		
	Total	305.047	147			

a. Dependent Variable: RQ30_07

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.034		.550	.583
	PMGSYRoadPresent	2.913	.050	.977	58.429	.000
	ASpGainTaluka	.001	.036	.001	.029	.977
	ASpGainDistrict	.031	.048	.015	.644	.521
	ASpGainStateHighway	.004	.038	.002	.113	.910

a. Dependent Variable: RQ30_07

Table h: Maintenance of PMGSY road regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_08
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.454 ^a	.206	.190	1.28110

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.393	3	20.464	12.469	.000 ^b
	Residual	236.337	144	1.641		
	Total	297.730	147			

a. Dependent Variable: RQ30_08
b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.204	.129		9.359	.000
	ASpGainTaluka	.210	.188	.143	1.113	.268
	ASpGainDistrict	.372	.243	.187	1.530	.128
	ASpGainStateHighway	.346	.190	.183	1.823	.070

a. Dependent Variable: RQ30_08

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_08
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865 ^a	.748	.741	.72404

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	222.765	4	55.691	106.235	.000 ^b
	Residual	74.964	143	.524		
	Total	297.730	147			

a. Dependent Variable: RQ30_08
b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	.037	.099		.376	.708
	PMGSYRoadPresent	2.561	.146	.869	17.545	.000
	ASpGainTaluka	.201	.107	.137	1.885	.061
	ASpGainDistrict	-.167	.141	-.084	-1.183	.239
	ASpGainStateHighway	-.109	.110	-.058	-.988	.325

a. Dependent Variable: RQ30_08

Table i: Safety of Travel to and from our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.539 ^a	.290	.275	1.21876

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.401	3	29.134	19.614	.000 ^b
	Residual	213.896	144	1.485		
	Total	301.297	147			

a. Dependent Variable: RQ30_09

b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.326	.122		10.837	.000
	ASpGainTaluka	-.021	.179	-.014	-.116	.908
	ASpGainDistrict	.694	.231	.346	2.999	.003
	ASpGainStateHighway	.509	.181	.267	2.817	.006

a. Dependent Variable: RQ30_09

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.962 ^a	.925	.923	.39696

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.763	4	69.691	442.257	.000 ^b
	Residual	22.534	143	.158		
	Total	301.297	147			

a. Dependent Variable: RQ30_09

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.054		1.028	.305
	PMGSYRoadPresent	2.789	.080	.941	34.848	.000
	ASpGainTaluka	-.030	.058	-.021	-.522	.603
	ASpGainDistrict	.107	.077	.053	1.389	.167
	ASpGainStateHighway	.013	.061	.007	.218	.828

a. Dependent Variable: RQ30_09

Table j: Economic activity in our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890 ^a	.792	.770	.53036

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.994	6	9.999	35.548	.000 ^b
	Residual	15.752	56	.281		
	Total	75.746	62			

a. Dependent Variable: RQ30_10

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.126	.072		1.753	.085
	ASpGainTaluka	2.975	.682	.837	4.364	.000
	ASpGainDistrict	-1.993	.798	-.772	-2.499	.015

ASpGainStateHighway	-.046	.511	-.020	-.090	.928
ASpGainMarket	2.824	3.826	.171	.738	.463
ASpGainIndustries	.944	.972	.136	.971	.336
ASpGainMandi	1.981	1.383	.524	1.432	.158

a. Dependent Variable: RQ30_10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.928 ^a	.861	.843	.43770

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.209	7	9.316	48.624	.000 ^b
	Residual	10.537	55	.192		
	Total	75.746	62			

a. Dependent Variable: RQ30_10

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.093	.060		1.555	.126
	PMGSYRoadPresent	2.907	.557	.928	5.217	.000
	ASpGainTaluka	-3.959E-13	.801	.000	.000	1.000
	ASpGainDistrict	3.550E-13	.761	.000	.000	1.000
	ASpGainStateHighway	3.749E-14	.422	.000	.000	1.000
	ASpGainMarket	-6.307E-13	3.203	.000	.000	1.000
	ASpGainIndustries	4.402E-14	.822	.000	.000	1.000
	ASpGainMandi	-3.464E-13	1.203	.000	.000	1.000

a. Dependent Variable: RQ30_10

Table k: Access to markets_mandis for agriculture produce regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952 ^a	.907	.897	.33978

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.090	6	10.515	91.079	.000 ^b
	Residual	6.465	56	.115		
	Total	69.556	62			

a. Dependent Variable: RQ30_11

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.053	.046		1.144	.258
	ASpGainTaluka	3.051	.437	.895	6.985	.000
	ASpGainDistrict	-2.044	.511	-.826	-4.000	.000
	ASpGainStateHighway	-.047	.328	-.021	-.145	.885
	ASpGainMarket	2.896	2.451	.184	1.182	.242
	ASpGainIndustries	.968	.623	.145	1.555	.126
	ASpGainMandi	2.031	.886	.561	2.292	.026

a. Dependent Variable: RQ30_11

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993 ^a	.986	.984	.13359

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.574	7	9.796	548.962	.000 ^b
	Residual	.981	55	.018		
	Total	69.556	62			

a. Dependent Variable: RQ30_11

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.019	.018		1.019	.313
	PMGSYRoadPresent	2.981	.170	.993	17.530	.000
	ASpGainTaluka	-5.575E-14	.244	.000	.000	1.000
	ASpGainDistrict	-3.848E-14	.232	.000	.000	1.000
	ASpGainStateHighway	-1.491E-14	.129	.000	.000	1.000
	ASpGainMarket	9.816E-14	.978	.000	.000	1.000
	ASpGainIndustries	-7.297E-14	.251	.000	.000	1.000
	ASpGainMandi	1.239E-13	.367	.000	.000	1.000

a. Dependent Variable: RQ30_11

Table 1: Access to markets _mandis for animal husbandary_dairy_fishing_poultry regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933 ^a	.871	.857	.40056

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.761	6	10.127	63.117	.000 ^b
	Residual	8.985	56	.160		
	Total	69.746	62			

a. Dependent Variable: RQ30_12

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.107	.054		1.984	.052
	ASpGainTaluka	2.994	.515	.878	5.814	.000
	ASpGainDistrict	-2.006	.602	-.810	-3.330	.002
	ASpGainStateHighway	-.047	.386	-.021	-.120	.905
	ASpGainMarket	2.842	2.889	.180	.984	.329
	ASpGainIndustries	.950	.734	.142	1.294	.201
	ASpGainMandi	1.993	1.045	.550	1.908	.062

a. Dependent Variable: RQ30_12

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b	.	Enter
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a. Dependent Variable: RQ30_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 ^a	.947	.940	.25950

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.042	7	9.435	140.104	.000 ^b
	Residual	3.704	55	.067		
	Total	69.746	62			

a. Dependent Variable: RQ30_12

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.035		2.098	.041
	PMGSYRoadPresent	2.926	.330	.973	8.856	.000
	ASpGainTaluka	-6.743E-14	.475	.000	.000	1.000
	ASpGainDistrict	1.596E-13	.451	.000	.000	1.000
	ASpGainStateHighway	-4.210E-14	.250	.000	.000	1.000
	ASpGainMarket	1.792E-13	1.899	.000	.000	1.000
	ASpGainIndustries	2.498E-14	.488	.000	.000	1.000
	ASpGainMandi	-2.261E-13	.713	.000	.000	1.000

a. Dependent Variable: RQ30_12

Table m: Price realization of agricultural produce regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_13

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 ^a	.883	.870	.38223

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.533	6	10.255	70.194	.000 ^b
	Residual	8.182	56	.146		
	Total	69.714	62			

a. Dependent Variable: RQ30_13

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.089	.052		1.725	.090
	ASpGainTaluka	3.013	.491	.883	6.132	.000
	ASpGainDistrict	-2.018	.575	-.815	-3.512	.001
	ASpGainStateHighway	-.047	.369	-.021	-.127	.899
	ASpGainMarket	2.860	2.757	.181	1.037	.304
	ASpGainIndustries	.956	.701	.143	1.365	.178
	ASpGainMandi	2.006	.997	.553	2.012	.049

a. Dependent Variable: RQ30_13

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_13

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.979 ^a	.959	.954	.22697

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.881	7	9.554	185.468	.000 ^b
	Residual	2.833	55	.052		
	Total	69.714	62			

a. Dependent Variable: RQ30_13

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.031		1.799	.078
	PMGSYRoadPresent	2.944	.289	.979	10.189	.000
	ASpGainTaluka	-1.742E-13	.415	.000	.000	1.000

ASpGainDistrict	1.023E-13	.395	.000	.000	1.000
ASpGainStateHighway	-1.695E-14	.219	.000	.000	1.000
ASpGainMarket	3.929E-14	1.661	.000	.000	1.000
ASpGainIndustries	-3.898E-14	.426	.000	.000	1.000
ASpGainMandi	-3.614E-14	.624	.000	.000	1.000

a. Dependent Variable: RQ30_13

Table n: Shift in agricultural practices or cropping pattern regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_14

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946 ^a	.895	.883	.36208

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.309	6	10.385	79.212	.000 ^b
	Residual	7.342	56	.131		
	Total	69.651	62			

a. Dependent Variable: RQ30_14

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.071	.049		1.447	.153
	ASpGainTaluka	3.032	.465	.889	6.514	.000
	ASpGainDistrict	-2.031	.544	-.821	-3.730	.000
	ASpGainStateHighway	-.047	.349	-.021	-.135	.893
	ASpGainMarket	2.878	2.612	.182	1.102	.275
	ASpGainIndustries	.962	.664	.144	1.450	.153
	ASpGainMandi	2.018	.944	.557	2.137	.037

a. Dependent Variable: RQ30_14

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b	.	Enter
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a. Dependent Variable: RQ30_14
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986 ^a	.972	.969	.18713

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.725	7	9.675	276.295	.000 ^b
	Residual	1.926	55	.035		
	Total	69.651	62			

a. Dependent Variable: RQ30_14
b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.025		1.454	.152
	PMGSYRoadPresent	2.963	.238	.986	12.436	.000
	ASpGainTaluka	-2.049E-13	.342	.000	.000	1.000
	ASpGainDistrict	1.319E-13	.325	.000	.000	1.000
	ASpGainStateHighway	-1.322E-14	.181	.000	.000	1.000
	ASpGainMarket	-7.250E-14	1.370	.000	.000	1.000
	ASpGainIndustries	-1.378E-14	.352	.000	.000	1.000
	ASpGainMandi	-7.861E-14	.514	.000	.000	1.000

a. Dependent Variable: RQ30_14

Table o: Access to construction and infrastructure related jobs regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway ^b	.	Enter

a. Dependent Variable: RQ30_15
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913 ^a	.834	.820	.47993

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.349	5	13.670	59.348	.000 ^b
	Residual	13.590	59	.230		
	Total	81.938	64			

a. Dependent Variable: RQ30_15

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.137	.065		2.115	.039
	ASpGainTaluka	2.333	.487	.671	4.787	.000
	ASpGainDistrict	-.424	.330	-.160	-1.286	.204
	ASpGainStateHighway	.743	.408	.317	1.823	.073
	ASpGainMarket	-4.358	2.943	-.255	-1.481	.144
	ASpGainIndustries	2.945	.639	.411	4.610	.000

a. Dependent Variable: RQ30_15

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway ^b	.	Enter

a. Dependent Variable: RQ30_15

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.977 ^a	.955	.950	.25270

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	78.235	6	13.039	204.193	.000 ^b
	Residual	3.704	58	.064		
	Total	81.938	64			

a. Dependent Variable: RQ30_15

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.034		2.154	.035
	PMGSYRoadPresent	2.926	.235	.977	12.442	.000
	ASpGainTaluka	1.485E-14	.318	.000	.000	1.000
	ASpGainDistrict	-1.271E-15	.177	.000	.000	1.000
	ASpGainStateHighway	2.242E-14	.223	.000	.000	1.000
	ASpGainMarket	-1.731E-13	1.588	.000	.000	1.000
	ASpGainIndustries	4.812E-14	.411	.000	.000	1.000

a. Dependent Variable: RQ30_15

Table p: Number of individuals who travel to a nearby town or city daily jobs regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway ^b	.	Enter

a. Dependent Variable: RQ30_16

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.924 ^a	.853	.841	.45218

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.090	5	14.018	68.558	.000 ^b
	Residual	12.064	59	.204		
	Total	82.154	64			

a. Dependent Variable: RQ30_16

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.100	.061		1.649	.104
	ASpGainTaluka	2.362	.459	.678	5.145	.000
	ASpGainDistrict	-.429	.310	-.162	-1.382	.172
	ASpGainStateHighway	.752	.384	.321	1.959	.055
	ASpGainMarket	-4.413	2.772	-.258	-1.592	.117
	ASpGainIndustries	2.982	.602	.415	4.955	.000

a. Dependent Variable: RQ30_16

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway ^b	.	Enter

a. Dependent Variable: RQ30_16

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988 ^a	.977	.974	.18222

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.228	6	13.371	402.682	.000 ^b
	Residual	1.926	58	.033		
	Total	82.154	64			

a. Dependent Variable: RQ30_16

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.025		1.494	.141
	PMGSYRoadPresent	2.963	.170	.988	17.473	.000
	ASpGainTaluka	-4.880E-14	.229	.000	.000	1.000
	ASpGainDistrict	1.366E-14	.128	.000	.000	1.000
	ASpGainStateHighway	2.038E-14	.161	.000	.000	1.000
	ASpGainMarket	-1.224E-13	1.145	.000	.000	1.000
	ASpGainIndustries	-1.288E-14	.297	.000	.000	1.000

a. Dependent Variable: RQ30_16

Table q: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935 ^a	.875	.862	.40794

a. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.452	6	11.075	66.552	.000 ^b
	Residual	9.486	57	.166		
	Total	75.938	63			

a. Dependent Variable: RQ30_17

b. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	.111	.055		2.006	.050
	ASpGainTaluka	3.053	.469	.912	6.512	.000
	ASpGainDistrict	-1.722	.827	-.670	-2.082	.042
	ASpGainStateHighway	-.121	.407	-.053	-.297	.768
	ASpGainMarket	3.531	3.282	.215	1.076	.286
	ASpGainIndustries	1.095	.960	.157	1.140	.259
	ASpGainTheatreorMall	1.442	1.421	.383	1.015	.314

a. Dependent Variable: RQ30_17

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975 ^a	.951	.945	.25717

a. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.234	7	10.319	156.025	.000 ^b
	Residual	3.704	56	.066		
	Total	75.938	63			

a. Dependent Variable: RQ30_17

b. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.035		2.117	.039
	PMGSYRoadPresent	2.926	.313	.975	9.350	.000
	ASpGainTaluka	-1.006E-13	.440	.000	.000	1.000
	ASpGainDistrict	-4.440E-15	.553	.000	.000	1.000
	ASpGainStateHighway	2.066E-14	.257	.000	.000	1.000
	ASpGainMarket	-2.427E-13	2.103	.000	.000	1.000
	ASpGainIndustries	-3.353E-15	.616	.000	.000	1.000
	ASpGainTheatreorMall	9.008E-14	.909	.000	.000	1.000

a. Dependent Variable: RQ30_17

Table r: Number of HHs that own a motor vehicle regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHigh way, ASpGainDistrict ^b	.	Enter
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a. Dependent Variable: RQ30_18

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 ^a	.883	.870	.38223

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.533	6	10.255	70.194	.000 ^b
	Residual	8.182	56	.146		
	Total	69.714	62			

a. Dependent Variable: RQ30_18

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.089	.052		1.725	.090
	ASpGainTaluka	3.013	.491	.883	6.132	.000
	ASpGainDistrict	-2.018	.575	-.815	-3.512	.001
	ASpGainStateHighway	-.047	.369	-.021	-.127	.899
	ASpGainMarket	2.860	2.757	.181	1.037	.304
	ASpGainIndustries	.956	.701	.143	1.365	.178
	ASpGainMandi	2.006	.997	.553	2.012	.049

a. Dependent Variable: RQ30_18

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHigh way, ASpGainTaluka, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_18

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.979 ^a	.959	.954	.22697

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.881	7	9.554	185.468	.000 ^b
	Residual					

Residual	2.833	55	.052		
Total	69.714	62			

a. Dependent Variable: RQ30_18

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.056	.031		1.799	.078
PMGSYRoadPresent	2.944	.289	.979	10.189	.000
ASpGainTaluka	-1.881E-13	.415	.000	.000	1.000
ASpGainDistrict	1.073E-13	.395	.000	.000	1.000
ASpGainStateHighway	-1.841E-14	.219	.000	.000	1.000
ASpGainMarket	4.059E-14	1.661	.000	.000	1.000
ASpGainIndustries	-4.139E-14	.426	.000	.000	1.000
ASpGainMandi	-3.421E-14	.624	.000	.000	1.000

a. Dependent Variable: RQ30_18

Table s: Maintenance cost for motor vehicle regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_19

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980 ^a	.961	.957	.14023

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.596	6	4.433	225.408	.000 ^b
	Residual	1.082	55	.020		
	Total	27.677	61			

a. Dependent Variable: RQ30_19

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.016	.019		.834	.408
ASpGainTaluka	-.698	.180	-.324	-3.871	.000
ASpGainDistrict	-3.948	.211	-2.529	-18.721	.000
ASpGainStateHighway	1.472	.135	1.050	10.883	.000
ASpGainMarket	.161	1.012	.016	.159	.874
ASpGainIndustries	-3.416	.257	-.811	-13.292	.000
ASpGainMandi	6.910	.366	3.022	18.894	.000

a. Dependent Variable: RQ30_19

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_19

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.981 ^a	.962	.957	.13898

a. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.634	7	3.805	196.974	.000 ^b
	Residual	1.043	54	.019		
	Total	27.677	61			

a. Dependent Variable: RQ30_19

b. Predictors: (Constant), ASpGainMandi, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.019		.988	.327
	PMGSYRoadPresent	-.250	.177	-.132	-1.411	.164
	ASpGainTaluka	-.442	.254	-.206	-1.739	.088
	ASpGainDistrict	-4.119	.242	-2.638	-17.045	.000
	ASpGainStateHighway	1.468	.134	1.048	10.949	.000
	ASpGainMarket	.404	1.017	.041	.397	.693
	ASpGainIndustries	-3.335	.261	-.791	-12.772	.000
	ASpGainMandi	7.080	.382	3.096	18.535	.000

a. Dependent Variable: RQ30_19

Table t: The cases of HHs which used to migrate temporarily regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway ^b	.	Enter

a. Dependent Variable: RQ30_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.800 ^a	.641	.610	.68588

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.653	5	9.731	20.685	.000 ^b
	Residual	27.285	58	.470		
	Total	75.938	63			

a. Dependent Variable: RQ30_20

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.175	.093		1.879	.065
	ASpGainTaluka	2.453	.696	.732	3.523	.001
	ASpGainDistrict	-1.360	.471	-.532	-2.888	.005
	ASpGainStateHighway	1.450	.582	.643	2.490	.016
	ASpGainMarket	-7.030	4.205	-.427	-1.672	.100
	ASpGainIndustries	2.241	.913	.324	2.455	.017

a. Dependent Variable: RQ30_20

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway ^b		Enter

a. Dependent Variable: RQ30_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922 ^a	.850	.834	.44728

a. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.534	6	10.756	53.762	.000 ^b
	Residual	11.403	57	.200		
	Total	75.938	63			

a. Dependent Variable: RQ30_20

b. Predictors: (Constant), ASpGainIndustries, ASpGainDistrict, ASpGainMarket, PMGSYRoadPresent, ASpGainTaluka, ASpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.094	.061		1.536	.130

PMGSYRoadPresent	3.709	.416	1.285	8.910	.000
ASpGainTaluka	-.503	.562	-.150	-.893	.375
ASpGainDistrict	-.823	.313	-.322	-2.630	.011
ASpGainStateHighway	.509	.394	.225	1.290	.202
ASpGainMarket	-1.508	2.812	-.092	-.536	.594
ASpGainIndustries	-1.491	.728	-.216	-2.048	.045

a. Dependent Variable: RQ30_20

Table u: Instances of landslides_soil disposal_soil erosion regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_21

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.539 ^a	.291	.276	1.20364

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.994	3	28.331	19.556	.000 ^b
	Residual	207.170	143	1.449		
	Total	292.163	146			

a. Dependent Variable: RQ30_21

b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.098	.121		9.039	.000
	ASpGainTaluka	.068	.177	.047	.384	.701
	ASpGainDistrict	.646	.229	.327	2.827	.005
	ASpGainStateHighway	.433	.178	.230	2.428	.016

a. Dependent Variable: RQ30_21

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_21

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.838 ^a	.703	.695	.78164

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	205.408	4	51.352	84.052	.000 ^b
	Residual	86.756	142	.611		
	Total	292.163	146			

a. Dependent Variable: RQ30_21

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.107		.703	.483
	PMGSYRoadPresent	2.222	.158	.757	14.039	.000
	ASpGainTaluka	.060	.115	.042	.525	.600
	ASpGainDistrict	.183	.152	.092	1.201	.232
	ASpGainStateHighway	.042	.119	.022	.350	.727

a. Dependent Variable: RQ30_21

Table v: Impact on environment through pollution of vehicular movement regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.535 ^a	.286	.272	1.18613

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.785	3	26.928	19.140	.000 ^b
	Residual	201.188	143	1.407		
	Total	281.973	146			

a. Dependent Variable: RQ30_22

b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.159	.120		9.684	.000

ASpGainTaluka	.098	.174	.069	.563	.574
ASpGainDistrict	.580	.225	.298	2.574	.011
ASpGainStateHighway	.433	.176	.235	2.463	.015

a. Dependent Variable: RQ30_22

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866 ^a	.750	.743	.70514

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	211.368	4	52.842	106.275	.000 ^b
	Residual	70.605	142	.497		
	Total	281.973	146			

a. Dependent Variable: RQ30_22

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.094	.097		.974	.332
	PMGSYRoadPresent	2.314	.143	.802	16.206	.000
	ASpGainTaluka	.090	.104	.063	.870	.386
	ASpGainDistrict	.097	.137	.050	.708	.480
	ASpGainStateHighway	.025	.107	.014	.236	.813

a. Dependent Variable: RQ30_22

Table w: Safe to use the after PMGSY road has been built regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_23

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514 ^a	.264	.249	1.24527

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.719	3	26.573	17.136	.000 ^b
	Residual	221.750	143	1.551		
	Total	301.469	146			

a. Dependent Variable: RQ30_23

b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.379	.126		10.971	.000
	ASpGainTaluka	.000	.183	.000	.001	.999
	ASpGainDistrict	.628	.236	.312	2.654	.009
	ASpGainStateHighway	.499	.185	.261	2.703	.008

a. Dependent Variable: RQ30_23

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_23

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936 ^a	.876	.873	.51248

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	264.176	4	66.044	251.471	.000 ^b
	Residual	37.294	142	.263		
	Total	301.469	146			

a. Dependent Variable: RQ30_23

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.113	.070		1.608	.110
	PMGSYRoadPresent	2.750	.104	.922	26.502	.000
	ASpGainTaluka	-.009	.075	-.006	-.123	.902
	ASpGainDistrict	.054	.100	.027	.542	.589
	ASpGainStateHighway	.014	.078	.008	.185	.853

a. Dependent Variable: RQ30_23

Table x: Law and order situation_crime rate in your and neighbouring village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHigh way, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_24
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531 ^a	.282	.267	1.23697

a. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	85.944	3	28.648	18.723	.000 ^b
	Residual	218.805	143	1.530		
	Total	304.748	146			

a. Dependent Variable: RQ30_24
b. Predictors: (Constant), ASpGainStateHighway, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.291	.125		10.340	.000
	ASpGainTaluka	.008	.182	.005	.042	.967
	ASpGainDistrict	.621	.235	.307	2.643	.009
	ASpGainStateHighway	.540	.183	.281	2.943	.004

a. Dependent Variable: RQ30_24

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHigh way, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka ^b	.	Enter

a. Dependent Variable: RQ30_24
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.917 ^a	.840	.836	.58562

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	256.050	4	64.013	186.655	.000 ^b
	Residual	48.698	142	.343		
	Total	304.748	146			

a. Dependent Variable: RQ30_24
b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainDistrict, ASpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.080		.938	.350
	PMGSYRoadPresent	2.641	.119	.881	22.271	.000
	ASpGainTaluka	-.002	.086	-.001	-.018	.986
	ASpGainDistrict	.070	.114	.035	.614	.540
	ASpGainStateHighway	.074	.089	.039	.834	.406

a. Dependent Variable: RQ30_24

Table y: Connectivity to nearby villages regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	ASpGainStateHighway, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict ^b	.	Enter

a. Dependent Variable: RQ30_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773 ^a	.598	.566	.80205

a. Predictors: (Constant), ASpGainStateHighway, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.337	5	11.867	18.448	.000 ^b
	Residual	39.884	62	.643		
	Total	99.221	67			

a. Dependent Variable: RQ30_25

b. Predictors: (Constant), ASpGainStateHighway, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.289	.105		2.755	.008
	ASpGainHabitation	-.210	.299	-.151	-.700	.486
	ASpGainVillage	.276	.203	.190	1.362	.178
	ASpGainTaluka	-.011	.190	-.011	-.059	.953
	ASpGainDistrict	1.382	.391	.906	3.533	.001
	ASpGainStateHighway	-.313	.309	-.172	-1.011	.316

a. Dependent Variable: RQ30_25

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ASpGainStateHighway, PMGSYRoadPresent, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict ^b		Enter
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a. Dependent Variable: RQ30_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986 ^a	.971	.969	.21552

a. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.387	6	16.065	345.860	.000 ^b
	Residual	2.833	61	.046		
	Total	99.221	67			

a. Dependent Variable: RQ30_25

b. Predictors: (Constant), ASpGainStateHighway, PMGSYRoadPresent, ASpGainHabitation, ASpGainVillage, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.029		1.894	.063
	PMGSYRoadPresent	2.944	.104	.986	28.243	.000
	ASpGainHabitation	-1.771E-14	.081	.000	.000	1.000
	ASpGainVillage	3.807E-15	.055	.000	.000	1.000
	ASpGainTaluka	7.522E-15	.051	.000	.000	1.000
	ASpGainDistrict	1.533E-15	.116	.000	.000	1.000
	ASpGainStateHighway	-2.049E-15	.084	.000	.000	1.000

a. Dependent Variable: RQ30_25

Table z: Connectivity to nearby major centre regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_26

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953 ^a	.908	.898	.35006

a. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.999	6	11.500	93.842	.000 ^b
	Residual	6.985	57	.123		
	Total	75.984	63			

a. Dependent Variable: RQ30_26

b. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, ASpGainTaluka, ASpGainStateHighway, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.047		1.179	.243
	ASpGainTaluka	3.111	.402	.929	7.733	.000
	ASpGainDistrict	-1.754	.710	-.683	-2.472	.016
	ASpGainStateHighway	-.123	.349	-.054	-.353	.726
	ASpGainMarket	3.599	2.816	.219	1.278	.207
	ASpGainIndustries	1.115	.824	.160	1.354	.181
	ASpGainTheatreorMall	1.469	1.219	.390	1.205	.233

a. Dependent Variable: RQ30_26

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ASpGainTheatreor Mall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict ^b		Enter

a. Dependent Variable: RQ30_26

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994 ^a	.987	.985	.13239

a. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.003	7	10.715	611.344	.000 ^b
	Residual	.981	56	.018		
	Total	75.984	63			

a. Dependent Variable: RQ30_26

b. Predictors: (Constant), ASpGainTheatreorMall, ASpGainIndustries, ASpGainMarket, PMGSYRoadPresent, ASpGainStateHighway, ASpGainTaluka, ASpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.018		1.028	.308
	PMGSYRoadPresent	2.981	.161	.994	18.508	.000
	ASpGainTaluka	4.914E-14	.227	.000	.000	1.000
	ASpGainDistrict	1.473E-13	.285	.000	.000	1.000

ASpGainStateHighway	4.453E-14	.132	.000	.000	1.000
ASpGainMarket	-5.312E-13	1.083	.000	.000	1.000
ASpGainIndustries	1.954E-13	.317	.000	.000	1.000
ASpGainTheatreorMall	-2.776E-13	.468	.000	.000	1.000

a. Dependent Variable: RQ30_26

Report

PMGSYRoadPresent	Type of Road 1	Q29R		Time taken earlier	Time taken currently	
Absent	Gravel	.00	Mean	105.9606	90.6404	
			N	203	203	
			Std. Deviation	108.34689	108.91069	
	Total			Mean	105.9606	90.6404
				N	203	203
				Std. Deviation	108.34689	108.91069
	Motorable	.00		Mean	30.0000	30.0000
				N	10	10
				Std. Deviation	.00000	.00000
	Total			Mean	30.0000	30.0000
				N	10	10
				Std. Deviation	.00000	.00000
	Asphalt	.00		Mean	81.3554	69.4628
				N	242	242
				Std. Deviation	43.24587	35.20127
	Total			Mean	81.3554	69.4628
				N	242	242
				Std. Deviation	43.24587	35.20127
Cemented	.00		Mean	67.3889	50.6667	
			N	90	90	
			Std. Deviation	33.34555	25.83656	
Total			Mean	67.3889	50.6667	
			N	90	90	
			Std. Deviation	33.34555	25.83656	
Total	.00		Mean	87.2716	73.5229	
			N	545	545	
			Std. Deviation	75.10681	72.80489	
			Mean	87.2716	73.5229	
			N	545	545	
			Std. Deviation	75.10681	72.80489	
Present	Gravel	2.00	Mean	130.0000	63.5714	
			N	35	35	
			Std. Deviation	53.35784	22.67324	
		3.00	Mean	107.7931	85.1724	
			N	290	290	
			Std. Deviation	55.79366	46.57440	
	4.00	Mean	200.8000	164.6000		
		N	25	25		
		Std. Deviation	48.64155	28.86463		
	Total			Mean	116.6571	88.6857
				N	350	350
				Std. Deviation	60.06775	48.88720
	Motorable	1.00	Mean	94.2857	77.1429	
			N	7	7	
			Std. Deviation	24.05351	21.38090	
		3.00	Mean	79.5522	65.2985	
			N	67	67	
			Std. Deviation	34.65994	26.35539	
Total			Mean	80.9459	66.4189	
			N	74	74	
			Std. Deviation	33.94875	26.03370	
Asphalt	1.00	Mean	79.2593	70.5556		
		N	81	81		
		Std. Deviation	28.06367	25.94465		
2.00	Mean	93.7165	71.7317			

		N	328	328
		Std. Deviation	51.74215	41.39865
3.00		Mean	90.4725	70.9702
		N	637	637
		Std. Deviation	63.90685	53.48341
4.00		Mean	95.6967	68.4016
		N	122	122
		Std. Deviation	60.12149	43.23330
Total		Mean	91.1515	70.8870
		N	1168	1168
		Std. Deviation	58.47049	47.74885
Cemented	1.00	Mean	63.5000	37.4500
		N	20	20
		Std. Deviation	31.41823	20.46943
	2.00	Mean	58.5821	41.1940
		N	67	67
		Std. Deviation	10.18042	10.98379
	3.00	Mean	81.8694	55.9009
		N	222	222
		Std. Deviation	48.27332	30.56555
	4.00	Mean	75.1646	52.6835
		N	79	79
		Std. Deviation	59.24383	32.40075
Total		Mean	75.5361	51.7552
		N	388	388
		Std. Deviation	46.73949	28.74317
Total	1.00	Mean	77.3148	64.8519
		N	108	108
		Std. Deviation	29.22221	27.89560
	2.00	Mean	91.1953	66.3093
		N	430	430
		Std. Deviation	50.75540	38.56511
	3.00	Mean	92.4309	71.2936
		N	1216	1216
		Std. Deviation	58.78159	48.08602
	4.00	Mean	100.1460	73.5487
		N	226	226
		Std. Deviation	69.05438	50.46134
Total		Mean	92.2187	70.1172
		N	1980	1980
		Std. Deviation	57.33819	45.61192
Total	Gravel	.00	Mean	105.9606
			N	203
			Std. Deviation	108.34689
				108.91069
		2.00	Mean	130.0000
			N	35
			Std. Deviation	53.35784
				22.67324
		3.00	Mean	107.7931
			N	290
			Std. Deviation	55.79366
				46.57440
		4.00	Mean	200.8000
			N	25
			Std. Deviation	48.64155
				28.86463
Total			Mean	112.7306
			N	553
			Std. Deviation	81.26298
				76.50207
Motorable	.00	Mean	30.0000	30.0000
		N	10	10
		Std. Deviation	.00000	.00000
	1.00	Mean	94.2857	77.1429
		N	7	7
		Std. Deviation	24.05351	21.38090
	3.00	Mean	79.5522	65.2985
		N	67	67
		Std. Deviation	34.65994	26.35539

	Total	Mean	74.8810	62.0833
		N	84	84
		Std. Deviation	35.90463	27.14540
Asphalt	.00	Mean	81.3554	69.4628
		N	242	242
		Std. Deviation	43.24587	35.20127
	1.00	Mean	79.2593	70.5556
		N	81	81
		Std. Deviation	28.06367	25.94465
	2.00	Mean	93.7165	71.7317
		N	328	328
		Std. Deviation	51.74215	41.39865
	3.00	Mean	90.4725	70.9702
		N	637	637
		Std. Deviation	63.90685	53.48341
	4.00	Mean	95.6967	68.4016
		N	122	122
		Std. Deviation	60.12149	43.23330
	Total	Mean	89.4702	70.6426
		N	1410	1410
		Std. Deviation	56.25966	45.83228
Cemented	.00	Mean	67.3889	50.6667
		N	90	90
		Std. Deviation	33.34555	25.83656
	1.00	Mean	63.5000	37.4500
		N	20	20
		Std. Deviation	31.41823	20.46943
	2.00	Mean	58.5821	41.1940
		N	67	67
		Std. Deviation	10.18042	10.98379
	3.00	Mean	81.8694	55.9009
		N	222	222
		Std. Deviation	48.27332	30.56555
	4.00	Mean	75.1646	52.6835
		N	79	79
		Std. Deviation	59.24383	32.40075
	Total	Mean	74.0021	51.5502
		N	478	478
		Std. Deviation	44.60972	28.19609
Total	.00	Mean	87.2716	73.5229
		N	545	545
		Std. Deviation	75.10681	72.80489
	1.00	Mean	77.3148	64.8519
		N	108	108
		Std. Deviation	29.22221	27.89560
	2.00	Mean	91.1953	66.3093
		N	430	430
		Std. Deviation	50.75540	38.56511
	3.00	Mean	92.4309	71.2936
		N	1216	1216
		Std. Deviation	58.78159	48.08602
	4.00	Mean	100.1460	73.5487
		N	226	226
		Std. Deviation	69.05438	50.46134
	Total	Mean	91.1509	70.8523
		N	2525	2525
		Std. Deviation	61.62574	52.68414

Appendix 9: Regression of various access variables as dependents and Time Saved variables and PMGSYRoadPresent variable (both excluding and including) as independent variables (based on Habitation dataset)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_01
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.560 ^a	.314	.294	1.21254

a. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.674	4	23.668	16.098	.000 ^b
	Residual	207.305	141	1.470		
	Total	301.979	145			

a. Dependent Variable: RQ30_01
b. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.266	.124		10.177	.000
	ATimeSavedTaluka	-.004	.006	-.069	-.613	.541
	ATimeSavedDistrict	.019	.006	.368	3.187	.002
	ATimeSavedStateHighway	.005	.007	.073	.763	.446
	ATimeSavedHealthCentre	.021	.009	.242	2.396	.018

a. Dependent Variable: RQ30_01

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_01
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974 ^a	.949	.947	.33182

a. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.565	5	57.313	520.542	.000 ^b
	Residual	16.414	140	.117		

Residual	15.414	140	.110	
Total	301.979	145		

a. Dependent Variable: RQ30_01

b. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.055	.045		1.219	.225
	PMGSYRoadPresent	2.879	.069	.970	41.747	.000
	ATimeSavedTaluka	-.001	.002	-.019	-.607	.545
	ATimeSavedDistrict	.000	.002	.004	.120	.905
	ATimeSavedStateHighway	-.001	.002	-.011	-.422	.674
	ATimeSavedHealthCentre	.002	.002	.029	1.032	.304

a. Dependent Variable: RQ30_01

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_02

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.559 ^a	.312	.293	1.22312

a. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.149	4	23.787	15.900	.000 ^b
	Residual	209.444	140	1.496		
	Total	304.593	144			

a. Dependent Variable: RQ30_02

b. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.213	.126		9.611	.000
	ATimeSavedTaluka	-.003	.006	-.065	-.575	.566
	ATimeSavedDistrict	.018	.006	.336	2.905	.004
	ATimeSavedStateHighway	.004	.007	.054	.558	.578
	ATimeSavedHealthCentre	.025	.009	.287	2.828	.005

a. Dependent Variable: RQ30_02

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_02

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943 ^a	.888	.884	.49438

a. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	270.619	5	54.124	221.441	.000 ^b
	Residual	33.974	139	.244		
	Total	304.593	144			

a. Dependent Variable: RQ30_02

b. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.067		.551	.583
PMGSYRoadPresent	2.764	.103	.922	26.794	.000
ATimeSavedTaluka	-.001	.002	-.017	-.380	.705
ATimeSavedDistrict	.000	.003	-.008	-.170	.865
ATimeSavedStateHighway	-.002	.003	-.026	-.672	.503
ATimeSavedHealthCentre	.007	.004	.085	2.037	.044

a. Dependent Variable: RQ30_02

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_03

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571 ^a	.326	.306	1.20878

a. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.791	4	24.698	16.903	.000 ^b
	Residual	204.561	140	1.461		
	Total	303.352	144			

a. Dependent Variable: RQ30_03

b. Predictors: (Constant), ATimeSavedHealthCentre, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.234	.125		9.893	.000
ATimeSavedTaluka	-.001	.006	-.027	-.241	.810
ATimeSavedDistrict	.018	.006	.341	2.974	.003
ATimeSavedStateHighway	.006	.007	.086	.905	.367
ATimeSavedHealthCentre	.020	.009	.237	2.362	.020

a. Dependent Variable: RQ30_03

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_03
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971 ^a	.944	.942	.35073

- a. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.253	5	57.251	465.407	.000 ^b
	Residual	17.099	139	.123		
	Total	303.352	144			

- a. Dependent Variable: RQ30_03
b. Predictors: (Constant), ATimeSavedHealthCentre, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.048		.388	.699
	PMGSYRoadPresent	2.857	.073	.955	39.038	.000
	ATimeSavedTaluka	.001	.002	.022	.691	.491
	ATimeSavedDistrict	-.001	.002	-.016	-.460	.646
	ATimeSavedStateHighway	.000	.002	.003	.125	.900
	ATimeSavedHealthCentre	.002	.003	.028	.948	.345

- a. Dependent Variable: RQ30_03

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_04
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520 ^a	.271	.255	1.24094

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.270	3	27.423	17.808	.000 ^b
	Residual	221.750	144	1.540		
	Total	304.020	147			

- a. Dependent Variable: RQ30_04
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.327	.125		10.583	.000
ATimeSavedTaluka	.003	.006	.060	.549	.584
ATimeSavedDistrict	.020	.006	.382	3.430	.001
ATimeSavedStateHighway	.009	.007	.127	1.316	.190

a. Dependent Variable: RQ30_04

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_04

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964 ^a	.928	.926	.38989

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	282.282	4	70.571	464.233	.000 ^b
	Residual	21.738	143	.152		
	Total	304.020	147			

a. Dependent Variable: RQ30_04

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.053		.698	.486
PMGSYRoadPresent	2.872	.079	.965	36.273	.000
ATimeSavedTaluka	.002	.002	.047	1.373	.172
ATimeSavedDistrict	-.002	.002	-.041	-1.109	.269
ATimeSavedStateHighway	6.160E-5	.002	.001	.027	.978

a. Dependent Variable: RQ30_04

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528 ^a	.278	.263	1.23441

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.599	3	28.200	18.507	.000 ^b
	Residual	219.421	144	1.524		

Total	304.020	147		
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a. Dependent Variable: RQ30_05

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.318	.125		10.572	.000
ATimeSavedTaluka	.001	.006	.023	.209	.835
ATimeSavedDistrict	.021	.006	.412	3.713	.000
ATimeSavedStateHighway	.010	.007	.138	1.436	.153

a. Dependent Variable: RQ30_05

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.963 ^a	.928	.926	.39228

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	282.015	4	70.504	458.168	.000 ^b
	Residual	22.005	143	.154		
	Total	304.020	147			

a. Dependent Variable: RQ30_05

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.053		.694	.489
PMGSYRoadPresent	2.853	.080	.958	35.818	.000
ATimeSavedTaluka	.001	.002	.010	.286	.775
ATimeSavedDistrict	.000	.002	-.009	-.238	.812
ATimeSavedStateHighway	.001	.002	.012	.405	.686

a. Dependent Variable: RQ30_05

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedSchool, ATimeSavedTaluka, ATimeSavedStateHighway, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.619 ^a	.383	.362	1.18431
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a. Predictors: (Constant), ATimeSavedSchool, ATimeSavedTaluka, ATimeSavedStateHighway, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.741	4	25.435	18.134	.000 ^b
	Residual	164.103	117	1.403		
	Total	265.844	121			

a. Dependent Variable: RQ30_06

b. Predictors: (Constant), ATimeSavedSchool, ATimeSavedTaluka, ATimeSavedStateHighway, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.965	.134		7.202	.000
ATimeSavedTaluka	.006	.009	.111	.730	.467
ATimeSavedDistrict	.013	.008	.250	1.699	.092
ATimeSavedStateHighway	.012	.008	.149	1.454	.149
ATimeSavedSchool	.074	.018	.325	4.004	.000

a. Dependent Variable: RQ30_06

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedSchool, ATimeSavedTaluka, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974 ^a	.948	.946	.34449

a. Predictors: (Constant), ATimeSavedSchool, ATimeSavedTaluka, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	252.078	5	50.416	424.835	.000 ^b
	Residual	13.766	116	.119		
	Total	265.844	121			

a. Dependent Variable: RQ30_06

b. Predictors: (Constant), ATimeSavedSchool, ATimeSavedTaluka, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.037	.047		.790	.431
PMGSYRoadPresent	3.001	.084	1.010	35.593	.000
ATimeSavedTaluka	-.001	.002	-.018	-.407	.684
ATimeSavedDistrict	.000	.002	-.004	-.097	.923
ATimeSavedStateHighway	.001	.002	.007	.248	.805
ATimeSavedSchool	-.014	.006	-.063	-2.428	.017

a. Dependent Variable: RQ30_06

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedCollege, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka ^b		Enter

- a. Dependent Variable: RQ30_07
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536 ^a	.287	.266	1.25013

- a. Predictors: (Constant), ATimeSavedCollege, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.437	4	21.109	13.507	.000 ^b
	Residual	209.419	134	1.563		
	Total	293.856	138			

- a. Dependent Variable: RQ30_07
b. Predictors: (Constant), ATimeSavedCollege, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.297	.128		10.117	.000
ATimeSavedTaluka	.002	.009	.034	.204	.839
ATimeSavedDistrict	.024	.006	.454	3.954	.000
ATimeSavedStateHighway	.010	.008	.121	1.173	.243
ATimeSavedCollege	-.002	.008	-.043	-.306	.760

- a. Dependent Variable: RQ30_07

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedCollege, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka ^b		Enter

- a. Dependent Variable: RQ30_07
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 ^a	.983	.983	.19191

- a. Predictors: (Constant), ATimeSavedCollege, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	288.958	5	57.792	1569.107	.000 ^b
	Residual	4.899	133	.037		
	Total	293.856	138			

- a. Dependent Variable: RQ30_07
b. Predictors: (Constant), ATimeSavedCollege, PMGSYRoadPresent, ATimeSavedStateHighway, ATimeSavedDistrict, ATimeSavedTaluka

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.019	.026		.709	.480
PMGSYRoadPresent	2.962	.040	.993	74.518	.000
ATimeSavedTaluka	.000	.001	.009	.335	.738
ATimeSavedDistrict	.000	.001	.008	.439	.661
ATimeSavedStateHighway	-.001	.001	-.014	-.883	.379
ATimeSavedCollege	.000	.001	-.009	-.408	.684

a. Dependent Variable: RQ30_07

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_08

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408 ^a	.167	.149	1.31261

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.627	3	16.542	9.601	.000 ^b
	Residual	248.103	144	1.723		
	Total	297.730	147			

a. Dependent Variable: RQ30_08

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.241	.133		9.359	.000
ATimeSavedTaluka	.006	.006	.115	.979	.329
ATimeSavedDistrict	.013	.006	.256	2.148	.033
ATimeSavedStateHighway	.006	.008	.082	.794	.429

a. Dependent Variable: RQ30_08

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_08

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867 ^a	.752	.745	.71834

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	223.939	4	55.985	108.494	.000 ^b
	Residual	73.790	143	.516		
	Total	297.730	147			

a. Dependent Variable: RQ30_08

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.098		.379	.705
	PMGSYRoadPresent	2.681	.146	.910	18.379	.000
	ATimeSavedTaluka	.005	.003	.103	1.598	.112
	ATimeSavedDistrict	-.007	.004	-.143	-2.086	.039
	ATimeSavedStateHighway	-.003	.004	-.037	-.654	.514

a. Dependent Variable: RQ30_08

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529 ^a	.280	.265	1.22774

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.239	3	28.080	18.628	.000 ^b
	Residual	217.058	144	1.507		
	Total	301.297	147			

a. Dependent Variable: RQ30_09

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.326	.124		10.694	.000
	ATimeSavedTaluka	.000	.006	.009	.086	.932
	ATimeSavedDistrict	.023	.006	.444	4.012	.000
	ATimeSavedStateHighway	.008	.007	.111	1.158	.249

a. Dependent Variable: RQ30_09

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter
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- a. Dependent Variable: RQ30_09
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961 ^a	.924	.922	.40002

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.414	4	69.604	434.969	.000 ^b
	Residual	22.883	143	.160		
	Total	301.297	147			

- a. Dependent Variable: RQ30_09
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.054		1.021	.309
	PMGSYRoadPresent	2.830	.081	.955	34.835	.000
	ATimeSavedTaluka	.000	.002	-.003	-.097	.923
	ATimeSavedDistrict	.001	.002	.025	.670	.504
	ATimeSavedStateHighway	-.001	.002	-.014	-.440	.661

- a. Dependent Variable: RQ30_09

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_10
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521 ^a	.272	.257	1.23706

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.309	3	27.436	17.929	.000 ^b
	Residual	220.366	144	1.530		
	Total	302.676	147			

- a. Dependent Variable: RQ30_10
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	1.373	.125		10.986	.000
	ATimeSavedTaluka	.001	.006	.013	.121	.903
	ATimeSavedDistrict	.022	.006	.417	3.744	.000
	ATimeSavedStateHighway	.010	.007	.133	1.378	.170

a. Dependent Variable: RQ30_10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961 ^a	.923	.921	.40332

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	279.414	4	69.854	429.430	.000 ^b
	Residual	23.261	143	.163		
	Total	302.676	147			

a. Dependent Variable: RQ30_10

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.093	.055		1.687	.094
	PMGSYRoadPresent	2.851	.082	.960	34.810	.000
	ATimeSavedTaluka	2.390E-5	.002	.000	.013	.990
	ATimeSavedDistrict	.000	.002	-.004	-.109	.913
	ATimeSavedStateHighway	.001	.002	.007	.231	.817

a. Dependent Variable: RQ30_10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644 ^a	.414	.392	1.14216

a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.048	5	23.810	18.251	.000 ^b
	Residual	168.286	129	1.305		
	Total	287.333	134			

a. Dependent Variable: RQ30_11

b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.038	.125		8.296	.000
	ATimeSavedTaluka	-.003	.005	-.063	-.620	.536
	ATimeSavedDistrict	.013	.006	.241	2.136	.035
	ATimeSavedStateHighway	.006	.007	.077	.856	.394
	ATimeSavedMandi	.023	.008	.288	2.775	.006
	ATimeSavedMarket	.021	.011	.189	1.870	.064

a. Dependent Variable: RQ30_11

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.985 ^a	.970	.968	.26065

a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.637	6	46.439	683.532	.000 ^b
	Residual	8.696	128	.068		
	Total	287.333	134			

a. Dependent Variable: RQ30_11

b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.035		.522	.603
	PMGSYRoadPresent	2.899	.060	.973	48.466	.000
	ATimeSavedTaluka	.000	.001	-.005	-.228	.820
	ATimeSavedDistrict	.001	.001	.014	.547	.586
	ATimeSavedStateHighway	.001	.002	.007	.345	.731
	ATimeSavedMandi	-.001	.002	-.007	-.295	.769
	ATimeSavedMarket	.001	.003	.012	.525	.601

a. Dependent Variable: RQ30_11

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.622 ^a	.386	.363	.8569

a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.646	5	11.929	16.246	.000 ^b
	Residual	94.724	129	.734		
	Total	154.370	134			

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.663	.094		28.367	.000
	ATimeSavedTaluka	.000	.004	-.005	-.052	.959
	ATimeSavedDistrict	.006	.005	.155	1.340	.183
	ATimeSavedStateHighway	.005	.006	.089	.965	.336
	ATimeSavedMandi	.018	.006	.314	2.952	.004
	ATimeSavedMarket	.013	.008	.166	1.604	.111

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.981 ^a	.963	.961	.28531

a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
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1	Regression	269.181	6	44.863	551.137	.000 ^b
	Residual	10.419	128	.081		
	Total	279.600	134			

a. Dependent Variable: RQ30_12

b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.039		1.908	.059
	PMGSYRoadPresent	2.843	.065	.968	43.435	.000
	ATimeSavedTaluka	.003	.001	.051	1.969	.051
	ATimeSavedDistrict	-.003	.002	-.059	-2.036	.044
	ATimeSavedStateHighway	.004	.002	.054	2.355	.020
	ATimeSavedMandi	.000	.002	.003	.100	.920
	ATimeSavedMarket	-.001	.003	-.006	-.218	.827

a. Dependent Variable: RQ30_12

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_13

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.640 ^a	.410	.387	1.13955

a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116.216	5	23.243	17.899	.000 ^b
	Residual	167.517	129	1.299		
	Total	283.733	134			

a. Dependent Variable: RQ30_13

b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.091	.125		8.741	.000
	ATimeSavedTaluka	-.003	.005	-.059	-.578	.564
	ATimeSavedDistrict	.012	.006	.231	2.046	.043
	ATimeSavedStateHighway	.006	.007	.071	.791	.431
	ATimeSavedMandi	.024	.008	.302	2.896	.004
	ATimeSavedMarket	.020	.011	.181	1.781	.077

a. Dependent Variable: RQ30_13

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict ^b		Enter
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- a. Dependent Variable: RQ30_13
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995 ^a	.990	.990	.14878

- a. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	280.900	6	46.817	2115.012	.000 ^b
	Residual	2.833	128	.022		
	Total	283.733	134			

- a. Dependent Variable: RQ30_13
b. Predictors: (Constant), ATimeSavedMarket, ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedMandi, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.020		2.744	.007
	PMGSYRoadPresent	2.944	.034	.995	86.254	.000
	ATimeSavedTaluka	-1.876E-17	.001	.000	.000	1.000
	ATimeSavedDistrict	-6.033E-17	.001	.000	.000	1.000
	ATimeSavedStateHighway	1.412E-16	.001	.000	.000	1.000
	ATimeSavedMandi	-3.099E-16	.001	.000	.000	1.000
	ATimeSavedMarket	-5.043E-18	.001	.000	.000	1.000

- a. Dependent Variable: RQ30_13

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576 ^a	.332	.318	.9244

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.027	3	20.342	23.806	.000 ^b
	Residual	123.048	144	.854		
	Total	184.074	147			

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.731	.093		29.245	.000
	ATimeSavedTaluka	.005	.004	.119	1.131	.260
	ATimeSavedDistrict	.013	.004	.326	3.053	.003
	ATimeSavedStateHighway	.012	.005	.202	2.196	.030

a. Dependent Variable: Shift in agricultural practices or cropping pattern

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_14

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922 ^a	.849	.845	.56031

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	252.855	4	63.214	201.350	.000 ^b
	Residual	44.895	143	.314		
	Total	297.750	147			

a. Dependent Variable: RQ30_14

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.076		.486	.628
	PMGSYRoadPresent	2.623	.114	.890	23.049	.000
	ATimeSavedTaluka	.002	.003	.034	.672	.502
	ATimeSavedDistrict	-.004	.003	-.078	-1.450	.149
	ATimeSavedStateHighway	.009	.003	.126	2.844	.005

a. Dependent Variable: RQ30_14

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_15

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553 ^a	.306	.291	1.19526

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90.544	3	30.181	21.126	.000 ^b
	Residual	205.726	144	1.429		
	Total	296.270	147			

a. Dependent Variable: RQ30_15

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.336	.121		11.063	.000
	ATimeSavedTaluka	.003	.006	.059	.547	.585
	ATimeSavedDistrict	.019	.006	.378	3.472	.001
	ATimeSavedStateHighway	.013	.007	.175	1.863	.064

a. Dependent Variable: RQ30_15

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_15

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976 ^a	.952	.950	.31631

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	281.963	4	70.491	704.564	.000 ^b
	Residual	14.307	143	.100		
	Total	296.270	147			

a. Dependent Variable: RQ30_15

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.043		1.721	.087
	PMGSYRoadPresent	2.810	.064	.956	43.741	.000
	ATimeSavedTaluka	.002	.001	.046	1.613	.109
	ATimeSavedDistrict	-.002	.002	-.042	-1.378	.170
	ATimeSavedStateHighway	.004	.002	.050	2.009	.046

a. Dependent Variable: RQ30_15

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_16
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534 ^a	.285	.270	1.23828

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.976	3	29.325	19.125	.000 ^b
	Residual	220.801	144	1.533		
	Total	308.777	147			

- a. Dependent Variable: RQ30_16
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.281	.125		10.240	.000
	ATimeSavedTaluka	.002	.006	.039	.357	.722
	ATimeSavedDistrict	.021	.006	.407	3.689	.000
	ATimeSavedStateHighway	.010	.007	.135	1.418	.158

- a. Dependent Variable: RQ30_16

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_16
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.942 ^a	.887	.884	.49305

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	274.015	4	68.504	281.799	.000 ^b
	Residual	34.762	143	.243		
	Total	308.777	147			

- a. Dependent Variable: RQ30_16
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.037	.067		.552	.582
	PMGSYRoadPresent	2.770	.100	.923	27.664	.000
	ATimeSavedTaluka	.001	.002	.026	.611	.542
	ATimeSavedDistrict	.000	.002	.002	.045	.964
	ATimeSavedStateHighway	.001	.003	.015	.383	.702

a. Dependent Variable: RQ30_16

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.550 ^a	.302	.288	1.19878

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.737	3	29.912	20.815	.000 ^b
	Residual	206.938	144	1.437		
	Total	296.676	147			

a. Dependent Variable: RQ30_17

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.352	.121		11.165	.000
	ATimeSavedTaluka	.003	.006	.059	.548	.584
	ATimeSavedDistrict	.019	.006	.372	3.414	.001
	ATimeSavedStateHighway	.013	.007	.178	1.888	.061

a. Dependent Variable: RQ30_17

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.982 ^a	.964	.963	.27165

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.123	4	71.531	969.354	.000 ^b
	Residual	10.552	143	.074		
	Total	296.676	147			

a. Dependent Variable: RQ30_17

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.037		2.004	.047
	PMGSYRoadPresent	2.846	.055	.968	51.588	.000
	ATimeSavedTaluka	.002	.001	.046	1.886	.061
	ATimeSavedDistrict	-.003	.001	-.052	-2.015	.046
	ATimeSavedStateHighway	.004	.002	.051	2.396	.018

a. Dependent Variable: RQ30_17

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_18

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.554 ^a	.307	.292	1.21172

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.618	3	31.206	21.254	.000 ^b
	Residual	211.429	144	1.468		
	Total	305.047	147			

a. Dependent Variable: RQ30_18

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.321	.122		10.790	.000
	ATimeSavedTaluka	.003	.006	.051	.480	.632
	ATimeSavedDistrict	.019	.006	.367	3.379	.001
	ATimeSavedStateHighway	.015	.007	.196	2.084	.039

a. Dependent Variable: RQ30_18

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter
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- a. Dependent Variable: RQ30_18
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968 ^a	.938	.936	.36393

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	286.108	4	71.527	540.060	.000 ^b
	Residual	18.939	143	.132		
	Total	305.047	147			

- a. Dependent Variable: RQ30_18
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.050		1.122	.264
	PMGSYRoadPresent	2.818	.074	.945	38.123	.000
	ATimeSavedTaluka	.002	.002	.039	1.202	.231
	ATimeSavedDistrict	-.002	.002	-.047	-1.376	.171
	ATimeSavedStateHighway	.005	.002	.072	2.549	.012

- a. Dependent Variable: RQ30_18

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_19
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.479 ^a	.229	.213	1.13888

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.190	3	18.397	14.184	.000 ^b
	Residual	185.477	143	1.297		
	Total	240.667	146			

- a. Dependent Variable: RQ30_19
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	.506	.116		4.377	.000
	ATimeSavedTaluka	.014	.005	.309	2.732	.007
	ATimeSavedDistrict	.006	.005	.120	1.042	.299
	ATimeSavedStateHighway	.007	.007	.102	1.032	.304

a. Dependent Variable: RQ30_19

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_19

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 ^a	.345	.326	1.05396

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.930	4	20.732	18.664	.000 ^b
	Residual	157.737	142	1.111		
	Total	240.667	146			

a. Dependent Variable: RQ30_19

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.145		.130	.896
	PMGSYRoadPresent	1.074	.215	.403	4.997	.000
	ATimeSavedTaluka	.014	.005	.304	2.901	.004
	ATimeSavedDistrict	-.003	.005	-.056	-.504	.615
	ATimeSavedStateHighway	.003	.006	.050	.541	.589

a. Dependent Variable: RQ30_19

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.508 ^a	.258	.243	1.18014

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.302	3	23.101	16.587	.000 ^b
	Residual	199.160	143	1.393		
	Total	268.463	146			

a. Dependent Variable: RQ30_20

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.967	.120		8.072	.000
	ATimeSavedTaluka	.005	.005	.110	.993	.322
	ATimeSavedDistrict	.018	.006	.375	3.328	.001
	ATimeSavedStateHighway	.005	.007	.066	.679	.498

a. Dependent Variable: RQ30_20

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768 ^a	.590	.578	.88068

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158.327	4	39.582	51.033	.000 ^b
	Residual	110.136	142	.776		
	Total	268.463	146			

a. Dependent Variable: RQ30_20

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.094	.121		.780	.437
	PMGSYRoadPresent	1.924	.180	.684	10.714	.000
	ATimeSavedTaluka	.005	.004	.101	1.220	.224
	ATimeSavedDistrict	.004	.004	.076	.861	.391
	ATimeSavedStateHighway	-.002	.005	-.023	-.312	.755

a. Dependent Variable: RQ30_20

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_21
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516 ^a	.266	.251	1.22463

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.703	3	25.901	17.271	.000 ^b
	Residual	214.460	143	1.500		
	Total	292.163	146			

- a. Dependent Variable: RQ30_21
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.116	.124		8.977	.000
	ATimeSavedTaluka	.007	.006	.127	1.148	.253
	ATimeSavedDistrict	.018	.006	.358	3.198	.002
	ATimeSavedStateHighway	.006	.007	.079	.819	.414

- a. Dependent Variable: RQ30_21

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_21
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836 ^a	.699	.691	.78680

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	204.257	4	51.064	82.487	.000 ^b
	Residual	87.906	142	.619		
	Total	292.163	146			

- a. Dependent Variable: RQ30_21
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.108		.698	.486
	PMGSYRoadPresent	2.294	.160	.781	14.298	.000
	ATimeSavedTaluka	.006	.004	.116	1.640	.103
	ATimeSavedDistrict	.001	.004	.017	.224	.823
	ATimeSavedStateHighway	-.002	.005	-.022	-.356	.722

a. Dependent Variable: RQ30_21

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.532 ^a	.283	.268	1.18862

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.939	3	26.646	18.860	.000 ^b
	Residual	202.034	143	1.413		
	Total	281.973	146			

a. Dependent Variable: RQ30_22

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.154	.121		9.559	.000
	ATimeSavedTaluka	.005	.005	.095	.867	.388
	ATimeSavedDistrict	.020	.006	.394	3.559	.001
	ATimeSavedStateHighway	.007	.007	.091	.954	.342

a. Dependent Variable: RQ30_22

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865 ^a	.748	.741	.70680

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	211.035	4	52.759	105.610	.000 ^b
	Residual	70.938	142	.500		
	Total	281.973	146			

a. Dependent Variable: RQ30_22

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.094	.097		.972	.333
	PMGSYRoadPresent	2.335	.144	.810	16.199	.000
	ATimeSavedTaluka	.004	.003	.084	1.291	.199
	ATimeSavedDistrict	.002	.003	.040	.583	.561
	ATimeSavedStateHighway	-.001	.004	-.014	-.244	.807

a. Dependent Variable: RQ30_22

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_23

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.477 ^a	.227	.211	1.27631

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.529	3	22.843	14.023	.000 ^b
	Residual	232.941	143	1.629		
	Total	301.469	146			

a. Dependent Variable: RQ30_23

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.413	.130		10.901	.000
	ATimeSavedTaluka	.005	.006	.105	.923	.358
	ATimeSavedDistrict	.019	.006	.358	3.111	.002
	ATimeSavedStateHighway	.004	.007	.053	.532	.595

a. Dependent Variable: RQ30_23

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter
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- a. Dependent Variable: RQ30_23
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 ^a	.882	.878	.50114

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	265.807	4	66.452	264.598	.000 ^b
	Residual	35.662	142	.251		
	Total	301.469	146			

- a. Dependent Variable: RQ30_23
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.113	.069		1.645	.102
	PMGSYRoadPresent	2.864	.102	.960	28.027	.000
	ATimeSavedTaluka	.005	.002	.092	2.062	.041
	ATimeSavedDistrict	-.003	.002	-.062	-1.302	.195
	ATimeSavedStateHighway	-.005	.003	-.072	-1.835	.069

- a. Dependent Variable: RQ30_23

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_24
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497 ^a	.247	.231	1.26675

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.281	3	25.094	15.638	.000 ^b
	Residual	229.467	143	1.605		
	Total	304.748	146			

- a. Dependent Variable: RQ30_24
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	1.322	.129		10.280	.000
	ATimeSavedTaluka	.006	.006	.122	1.093	.276
	ATimeSavedDistrict	.016	.006	.310	2.732	.007
	ATimeSavedStateHighway	.009	.007	.121	1.232	.220

a. Dependent Variable: RQ30_24

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_24

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918 ^a	.843	.838	.58071

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	256.862	4	64.215	190.422	.000 ^b
	Residual	47.886	142	.337		
	Total	304.748	146			

a. Dependent Variable: RQ30_24

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.080		.946	.346
	PMGSYRoadPresent	2.748	.118	.916	23.205	.000
	ATimeSavedTaluka	.006	.003	.110	2.146	.034
	ATimeSavedDistrict	-.005	.003	-.090	-1.648	.102
	ATimeSavedStateHighway	.000	.003	.002	.035	.972

a. Dependent Variable: RQ30_24

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555 ^a	.308	.294	1.20025

a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.411	3	30.804	21.382	.000 ^b
	Residual	207.448	144	1.441		
	Total	299.858	147			

a. Dependent Variable: RQ30_25

b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.349	.121		11.130	.000
	ATimeSavedTaluka	.002	.006	.045	.420	.675
	ATimeSavedDistrict	.020	.006	.393	3.621	.000
	ATimeSavedStateHighway	.013	.007	.173	1.845	.067

a. Dependent Variable: RQ30_25

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

a. Dependent Variable: RQ30_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.990 ^a	.980	.979	.20659

a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	293.755	4	73.439	1720.738	.000 ^b
	Residual	6.103	143	.043		
	Total	299.858	147			

a. Dependent Variable: RQ30_25

b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.028		1.976	.050
	PMGSYRoadPresent	2.882	.042	.975	68.685	.000
	ATimeSavedTaluka	.002	.001	.032	1.728	.086
	ATimeSavedDistrict	-.002	.001	-.035	-1.753	.082
	ATimeSavedStateHighway	.003	.001	.046	2.822	.005

a. Dependent Variable: RQ30_25

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter
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- a. Dependent Variable: RQ30_26
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.540 ^a	.292	.277	1.22620

- a. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.344	3	29.781	19.807	.000 ^b
	Residual	216.514	144	1.504		
	Total	305.858	147			

- a. Dependent Variable: RQ30_26
b. Predictors: (Constant), ATimeSavedStateHighway, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.357	.124		10.958	.000
	ATimeSavedTaluka	.001	.006	.013	.124	.902
	ATimeSavedDistrict	.023	.006	.438	3.989	.000
	ATimeSavedStateHighway	.010	.007	.130	1.374	.172

- a. Dependent Variable: RQ30_26

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict ^b		Enter

- a. Dependent Variable: RQ30_26
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.998 ^a	.997	.997	.08285

- a. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	304.877	4	76.219	11104.987	.000 ^b
	Residual	.981	143	.007		
	Total	305.858	147			

- a. Dependent Variable: RQ30_26
b. Predictors: (Constant), ATimeSavedStateHighway, PMGSYRoadPresent, ATimeSavedTaluka, ATimeSavedDistrict

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.019	.011		1.643	.103
	PMGSYRoadPresent	2.981	.017	.998	177.208	.000
	ATimeSavedTaluka	3.299E-17	.000	.000	.000	1.000
	ATimeSavedDistrict	-3.405E-17	.000	.000	.000	1.000
	ATimeSavedStateHighway	-4.427E-17	.000	.000	.000	1.000

a. Dependent Variable: RQ30_26

Appendix 10: Analysis of the Outcome and Impact by Type of Connectivity and Road Characteristic Variables

Table 5.3.7a: Speed Gains by Type of Connectivity for a. Non PMGSY roads b. PMGSY Roads (According to Phase of Construction)

Type of Road/Phases* 0-Non-PMGSY, 1-PMGSY		(%)										
		Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
0/*	Mean	12.69	18.95	18.94	29.62	118.33	100	33.33	33.33	33.33	7.48	41.67
	N	35	28	11	18	5	1	1	1	1	51	2
	Std. Dev	25.12	29.83	32.08	38.40	114.63	.	.	.	.	17.68	11.79
1/1	Mean	52.78	48.10	34.17	25.33	70.57	71.25	20.95	24.44	10	5.25	49
	N	6	7	4	5	10	8	6	3	2	13	10
	Std. Dev	37.14	30.90	12.29	7.30	77.56	77.72	40.92	7.70	14.14	4	73.48
1/2	Mean	83.83	63.09	73.08	83.42	93.56	48.08	53.08	69.02	27.58	10.42	85.39
	N	29	41	32	28	42	26	36	22	9	50	35
	Std. Dev	100.27	88.49	78.10	107.77	146.66	55.04	62.72	69.84	29.53	12.27	123.90
1/3	Mean	94.63	67.83	68.27	111.92	131.82	40.77	76.83	87.93	29.33	13.53	91.70
	N	74	90	68	61	91	63	69	37	4	120	81
	Std. Dev	120.40	77.59	83.63	230.40	412.53	72.92	102.98	99.42	20.66	14.39	197.99
1/4	Mean	56.57	46.32	64.52	74.91	77.23	61.58	54.51	72.25	16.67	10.09	65.71
	N	20	20	14	16	22	20	17	9	2	28	20
	Std. Dev	45.18	31.59	61.17	65.65	91.64	92.01	63.41	65.47	23.57	10.47	69.66
Total	Mean	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14
	N	164	186	129	128	170	118	129	72	18	262	148
	Std. Dev	98.38	71.78	76.38	170.86	313.17	72.94	86.64	84.66	24.02	14.21	161.34

(Note: 1-Year lower than or equal to 2000, 2-2000-2004, 3-2004-2012, 4-2012-2017, 0-Non-PMGSY roads)

*We are not considering speed gains by phases for non-PMGSY roads

Table 5.3.8a: Speed Gains for Taluka, District and State Highway and Each of the Roads in the Habitation by Type of Road

Type of road		Taluka (%)	District (%)	State Highway (%)
Road 1				
Gravel	Mean	44.53	51.80	61.81
	N	31	34	23
	Std.Dev	79.19	75.87	88.43
Motorable	Mean	57.14	43.81	30
	N	3	3	2
	Std.Dev	51.51	38.37	42.43
Asphalt	Mean	66.57	48.41	60.64
	N	87	105	72
	Std.Dev	82.41	61.07	75.16
Cemented	Mean	120.67	102.18	88.46
	N	30	29	24
	Std.Dev	150.08	98.74	72.64
Total	Mean	72.61	58.12	65.88
	N	151	171	121
	Std.Dev	100.94	73.64	77.10

Road 2				
Gravel	Mean	56.25	39.80	98.67
	N	8	15	5
	Std.Dev	66.03	53.80	118.36
Motorable	Mean	100	60	60
	N	1	1	1
	Std.Dev	.	.	.
Asphalt	Mean	86.11	76.92	66.88
	N	16	20	16
	Std.Dev	132.59	124.26	71.86
Cemented	Mean	189.33	186.67	40
	N	5	4	3
	Std.Dev	233.12	180.04	17.32
Total	Mean	95.81	73.55	69.73
	N	30	40	25
	Std.Dev	140.12	113.20	76.69

Road 3				
Gravel	Mean	116.67	62.78	75.00
	N	3	4	2
	Std. Dev	76.38	91.58	35.36
Asphalt	Mean	0.00	20.67	35.00
	N	2	5	2
	Std. Dev	0.00	21.65	21.21
Cemented	Mean	380.00	190.00	50.00
	N	1	2	1
	Std. Dev	.	268.70	.
Total	Mean	121.67	66.77	54.00
	N	6	11	5
	Std. Dev	147.03	118.45	28.81

Table 5.3.10a: Speed Gains by Type of Connectivity across States

(%)

Study State		Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
Bihar	Mean	139.13	97.87	78.02	115.67	116.01	30.56	158.01	130.28	51.98	16.96	111.61
	N	24	27	17	23	27	18	18	14	3	41	24
	Std. Dev	174.72	111.39	109.63	117.44	100.91	26.10	150.23	130.23	32.30	16.05	92.75
Himachal Pradesh	Mean	300.00	183.33	50.00		398.53	140.00	0.00	8.33	0.00	16.46	142.50
	N	2	4	2		17	10	1	3	1	23	10
	Std. Dev	282.84	228.52	70.71		910.63	157.76		14.43		19.17	214.10
Jharkhand	Mean	62.39	69.87	84.17	95.14	95.48	25.95	103.10	114.95	18.00	11.29	105.64
	N	24	23	16	17	19	14	14	12	3	30	19
	Std. Dev	60.58	76.92	69.53	54.87	55.12	29.59	53.80	58.29	16.42	13.85	58.16
Meghalaya	Mean	47.21	44.10	55.00	46.27	44.19	57.74	49.98	43.13	0.00	15.60	55.95
	N	15	17	6	9	13	14	10	8	1	18	14
	Std. Dev	29.70	25.35	27.95	17.37	21.70	36.71	24.31	15.60		14.81	32.21
Punjab	Mean	26.67	26.39	0.00	35.71	8.93	17.86	8.33		0.00	0.00	7.35
	N	5	6	2	7	14	14	12		2	18	17
	Std. Dev	25.28	24.95	0.00	33.92	18.62	54.09	15.08		0.00	1.14	13.78
Rajasthan	Mean	105.98	42.15	81.38	64.06	98.65	45.00	71.18	120.00		14.46	70.00
	N	13	35	26	16	21	5	22	5		40	13
	Std. Dev	107.23	40.07	90.59	71.21	105.25	51.23	64.59	75.83		12.84	51.37
Uttar Pradesh	Mean	41.43	39.70	43.80	88.82	67.29	44.31	29.53	35.88	32.47	5.68	90.15
	N	62	59	49	47	47	34	41	27	7	70	46
	Std. Dev	48.96	30.79	52.94	254.63	123.59	43.28	40.81	32.71	17.59	8.25	254.33
Uttarakhand	Mean	57.93	51.82	78.54	97.53	105.56	68.52	57.57	128.89	15.00	9.38	45.68
	N	19	15	11	9	12	9	11	3	1	22	5
	Std. Dev	75.56	72.60	91.81	167.73	177.18	128.68	101.69	165.51		17.76	55.36
Total	Mean	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14
	N	164	186	129	128	170	118	129	72	18	262	148
	Std. Dev	98.38	71.78	76.38	170.86	313.17	72.94	86.64	84.66	24.01	14.21	161.34

Table 5.3.11a: Speed Gains by Type of Connectivity by Agro-Climatic Zones

(%)

Agro-ClimateZone		Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	Market
.00	Mean	74.67	58.39	55.50	72.93	196.75	58.69	63.19	87.12	0.00	11.49	79.16
	N	40	44	27	26	48	37	25	13	4	72	41
	Std. Dev	122.04	92.04	77.85	96.57	567.47	95.30	89.22	96.07	0.00	13.72	108.63
1.00	Mean	57.07	42.62	56.44	77.07	59.47	36.36	48.72	48.95	32.58	9.37	83.79
	N	76	91	64	66	73	44	61	33	8	113	69
	Std. Dev	73.79	37.52	69.22	213.40	54.04	41.63	54.26	42.72	16.28	12.25	208.58
2.00	Mean	50.00	43.89	88.89	132.50	54.44		54.34	75.00		12.50	75.00
	N	1	6	6	4	3		6	2		6	2
	Std. Dev		29.85	61.16	113.54	23.65		36.90	35.36		9.59	35.36
3.00	Mean	0.00	25.00	0.00	100.00	8.33	0.00	0.00			0.00	8.33
	N	1	1	1	1	3	2	3			3	3
	Std. Dev					14.43	0.00	0.00			0.00	14.43
4.00	Mean	56.79	51.68	66.71	103.94	104.44	69.08	49.42	72.04		14.61	68.10
	N	19	20	14	10	24	20	16	9		34	14
	Std. Dev	70.17	63.89	82.41	152.97	137.50	97.67	83.55	94.13		20.68	127.14
5.00	Mean	45.83	48.99	100.00	26.67	50.00	50.00	68.75	33.33	15.00	4.29	95.00
	N	6	3	1	5	1	1	2	1	1	7	2
	Std. Dev	55.72	15.18		25.28			26.52			6.37	63.64
6.00	Mean	123.67	122.34	96.94	139.75	132.87	36.90	155.74	139.23	35.32	14.38	115.21
	N	21	21	16	16	18	14	16	14	5	27	17
	Std. Dev	141.10	115.84	99.41	108.56	106.24	33.35	145.05	118.95	33.00	15.11	94.07
Total	Mean	69.06	56.37	63.79	86.10	111.30	48.47	64.32	76.79	25.12	10.98	83.14
	N	164	186	129	128	170	118	129	72	18	262	148
	Std. Dev	98.38	71.78	76.38	170.86	313.17	72.94	86.64	84.66	24.01	14.21	161.34

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

Table 5.3.12a: Speed Gains by Type of Connectivity and Percentage SC/ST Population in the Habitation

(%)

SC/ST Category		Taluk	District	State Highway	College	Vocational	Industries	Mandi	Market
SC/ST population 60% or more	Mean	89.74	57.18	90.11	83.80	83.94	0.00	16.13	101.08
	N	21.00	24.00	15.00	16.00	11.00	1.00	31.00	20.00
	Std. Dev	106.86	58.75	78.97	85.89	74.12		15.71	85.07
SC/ST population 40%-60%	Mean	42.50	44.62	61.02	45.19	23.33	5.22	11.81	51.63
	N	14.00	18.00	9.00	9.00	4.00	3.00	25.00	14.00
	Std. Dev	46.14	66.31	52.83	45.16	6.67	8.47	16.20	52.33
SC/ST population 20%-40%	Mean	65.86	62.15	51.72	49.28	83.89	10.61	8.72	118.22
	N	40.00	40.00	31.00	29.00	12.00	1.00	56.00	31.00
	Std. Dev	99.20	69.62	66.30	87.16	109.47		13.40	309.64
SC/ST population less than 20%	Mean	69.79	56.00	63.85	68.28	77.90	32.77	10.62	71.02
	N	89.00	104.00	74.00	75.00	45.00	13.00	150.00	83.00
	Std. Dev	102.16	76.71	81.96	90.34	83.85	23.93	13.70	92.80
Total	Mean	69.06	56.37	63.79	64.32	76.79	25.12	10.98	83.14
	N	164.00	186.00	129.00	129.00	72.00	18.00	262.00	148.00
	Std. Dev	98.38	71.78	76.38	86.64	84.66	24.01	14.21	161.34

Table 5.3.13a: Speed Gains by Type of Connectivity in Habitations with Different Ranges of BPL Card Holder Population

(%)

BPL Category		Taluka	District	State Highway	College	Vocational	Industries	Mandi	Market
No of families with BPL Card 60% or more	Mean	87.50	70.12	66.42	107.38	113.68	44.64	15.24	74.61
	N	22	22	17	16	10	2	37	19
	Std. Dev	122.11	86.39	57.06	138.14	99.35	63.13	16.66	59.98
No of families with BPL Card 40% to 60%	Mean	79.81	63.18	86.07	64.37	64.44	23.76	11.01	96.29
	N	29	28	21	21	12	3	40	21
	Std. Dev	105.88	65.24	89.13	72.68	60.60	31.78	11.43	100.05
No of families with BPL Card 20% to 40%	Mean	71.98	53.94	49.25	59.66	82.74	10.00	9.51	68.38
	N	47	58	39	35	18	2	72	41
	Std. Dev	113.09	77.43	71.37	74.89	79.68	14.14	12.64	91.60
No of families with BPL Card less than 20%	Mean	56.11	51.86	64.84	55.08	66.54	24.70	10.51	90.46
	N	66	78	52	57	32	11	113	67
	Std. Dev	72.31	65.70	79.64	78.25	90.21	15.40	15.05	220.47
Total	Mean	69.06	56.37	63.79	64.32	76.79	25.12	10.98	83.14
	N	164	186	129	129	72	18	262	148
	Std. Dev	98.38	71.78	76.38	86.64	84.66	24.01	14.21	161.34

Table 5.3.14a: Speed Gains by Type of Connectivity by Primary Occupation in the Habitations.

Occupation		(%)							
		Taluka	District	State Highway	College	Vocational	Industries	Mandi	Market
Agriculture	Mean	57.06	47.68	57.63	47.24	59.47	25.93	10.41	78.78
	N	124	146	93	99	48	9	219	118
	Std. Dev	81.17	63.02	80.18	67.30	78.47	18.69	14.05	177.24
Animal Husbandry	Mean	70.71	48.44	60.79	63.97	55.68	19.29	9.68	58.50
	N	52	72	41	47	25	7	86	50
	Std. Dev	110.40	59.63	81.46	100.32	80.27	15.03	11.91	73.02
Forestry	Mean	33.33						20.00	
	N	1						1	
	Std. Dev								
Mining	Mean	66.67	116.67	66.67	33.33			14.17	33.33
	N	2	2	2	1			2	1
	Std. Dev	47.14	117.85	47.14				8.25	
Agricultural Labour	Mean	38.89	37.43	35.42	39.58	36.71	31.31	5.33	24.24
	N	12	9	8	8	6	3	15	8
	Std. Dev	43.42	26.87	51.51	51.90	24.82	19.77	8.62	21.60
Non-agricultural labour	Mean	59.57	44.54	62.81	50.85	68.01	31.75	10.34	102.82
	N	74	78	61	52	28	7	96	51
	Std. Dev	83.46	46.68	74.94	64.91	69.83	18.27	14.03	241.28
Salaried employee	Mean	97.71	90.73	87.02	126.14	128.71	0.67	9.03	94.15
	N	17	18	14	12	11	1	20	11
	Std. Dev	132.46	108.82	83.28	106.85	102.56		9.78	64.26
Business/Tra ding	Mean	31.25	33.33	36.61	50.00			1.63	58.33
	N	4	4	4	1			4	2
	Std. Dev	23.94	23.57	30.91				1.97	11.79

(Note: The total occurrences of the activity need not add up to the 285, as the primary occupation is defined as Rank 1 and Rank 2)

Appendix 11: Speed Gain and Time Saved due to Presence of PMGSY and non-PMGSY Roads (by States and Agro-Climatic Zones) (based on Habitation data)

Table 5.3.17: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads by States

State	PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre or Mall	Health Centre	School	College	Vocational	Industries	Mandi	
Bihar	Absent	Mean	0.10	0.07	0.50	0.07	0.07	0.00	0.00	0.67					
		N	4.00	3.00	1.00	3.00	3.00	2.00	2.00	1.00					
		Std. Dev.	0.20	0.12	.	0.12	0.12	0.00	0.00	.					
	Present	Mean	0.18	1.17	1.08	1.58	1.09	0.88	1.27	1.18	0.31	1.58	1.30	0.52	1.12
		N	37.00	26.00	13.00	21.00	24.00	15.00	21.00	26.00	18.00	18.00	14.00	3.00	24.00
		Std. Dev.	0.16	1.21	1.60	1.79	1.13	1.13	1.17	1.02	0.26	1.50	1.30	0.32	0.93
	Total	Mean	0.17	1.05	1.04	1.39	0.98	0.78	1.16	1.16	0.31	1.58	1.30	0.52	1.12
		N	41.00	29.00	14.00	24.00	27.00	17.00	23.00	27.00	18.00	18.00	14.00	3.00	24.00
		Std. Dev.	0.16	1.20	1.55	1.75	1.11	1.10	1.17	1.01	0.26	1.50	1.30	0.32	0.93
Himachal Pradesh	Absent	Mean	0.44						2.38	1.00					
		N	3.00						2.00	1.00					
		Std. Dev.	0.35							0.53	.				
	Present	Mean	0.12	2.47		3.00	1.83	0.50		4.20	1.44	0.00	0.08	0.00	1.43
		N	20.00	10.00		2.00	4.00	2.00		15.00	9.00	1.00	3.00	1.00	10.00
		Std. Dev.	0.13	2.14		2.83	2.29	0.71		9.71	1.67	.	0.14	.	2.14
	Total	Mean	0.16	2.47		3.00	1.83	0.50		3.99	1.40	0.00	0.08	0.00	1.43
		N	23.00	10.00		2.00	4.00	2.00		17.00	10.00	1.00	3.00	1.00	10.00
		Std. Dev.	0.19	2.14		2.83	2.29	0.71		9.11	1.58	.	0.14	.	2.14
Jharkhand	Absent	Mean	0.01	0.06	0.19	0.15	0.21	0.13	0.39	0.50		0.33	0.33	0.33	0.33
		N	8.00	8.00	4.00	8.00	8.00	4.00	4.00	1.00		1.00	1.00	1.00	1.00
		Std. Dev.	0.01	0.11	0.24	0.29	0.40	0.25	0.30	.		.	.	.	.
	Present	Mean	0.15	1.08	1.06	0.86	0.96	1.08	1.13	0.98	0.26	1.08	1.22	0.10	1.10
		N	22.00	20.00	7.00	16.00	15.00	12.00	13.00	18.00	14.00	13.00	11.00	2.00	18.00
		Std. Dev.	0.14	0.58	0.50	0.59	0.80	0.63	0.49	0.56	0.30	0.52	0.55	0.14	0.57
	Total	Mean	0.11	0.78	0.74	0.62	0.70	0.84	0.95	0.95	0.26	1.03	1.15	0.18	1.06
		N	30.00	28.00	11.00	24.00	23.00	16.00	17.00	19.00	14.00	14.00	12.00	3.00	19.00

		Std. Dev.	0.14	0.68	0.60	0.61	0.77	0.70	0.55	0.55	0.30	0.54	0.58	0.16	0.58
Meghalaya	Absent	Mean	0.01	0.00	0.00	0.00	0.00								
		N	3.00	1.00	2.00	2.00	2.00								
		Std. Dev.	0.01	.	0.00	0.00	0.00								
	Present	Mean	0.19	0.78	0.86	0.54	0.50	0.55	0.46	0.44	0.58	0.50	0.43	0.00	0.56
		N	15.00	3.00	2.00	13.00	15.00	6.00	9.00	13.00	14.00	10.00	8.00	1.00	14.00
		Std. Dev.	0.14	0.38	0.20	0.25	0.20	0.28	0.17	0.22	0.37	0.24	0.16	.	0.32
	Total	Mean	0.16	0.58	0.43	0.47	0.44	0.55	0.46	0.44	0.58	0.50	0.43	0.00	0.56
		N	18.00	4.00	4.00	15.00	17.00	6.00	9.00	13.00	14.00	10.00	8.00	1.00	14.00
		Std. Dev.	0.15	0.50	0.51	0.30	0.25	0.28	0.17	0.22	0.37	0.24	0.16	.	0.32
Punjab	Present	Mean	0.00	-0.17	-0.17	0.27	0.26	0.00	0.36	0.09	0.18	0.08		0.00	0.07
		N	18.00	4.00	4.00	5.00	6.00	2.00	7.00	14.00	14.00	12.00		2.00	17.00
		Std. Dev.	0.01	0.19	0.19	0.25	0.25	0.00	0.34	0.19	0.54	0.15		0.00	0.14
	Total	Mean	0.00	-0.17	-0.17	0.27	0.26	0.00	0.36	0.09	0.18	0.08		0.00	0.07
		N	18.00	4.00	4.00	5.00	6.00	2.00	7.00	14.00	14.00	12.00		2.00	17.00
		Std. Dev.	0.01	0.19	0.19	0.25	0.25	0.00	0.34	0.19	0.54	0.15		0.00	0.14
Rajasthan	Absent	Mean	0.08	0.65	0.33	0.48	0.20	0.67	0.73						
		N	5.00	4.00	4.00	3.00	5.00	2.00	2.00						
		Std. Dev.	0.08	0.41	0.47	0.46	0.14	0.47	0.74						
	Present	Mean	0.15		0.83	1.23	0.46	0.83	0.63	0.99	0.45	0.71	1.20		0.70
		N	35.00		5.00	10.00	30.00	24.00	14.00	21.00	5.00	22.00	5.00		13.00
		Std. Dev.	0.13		0.80	1.16	0.42	0.94	0.74	1.05	0.51	0.65	0.76		0.51
	Total	Mean	0.14	0.65	0.61	1.06	0.42	0.81	0.64	0.99	0.45	0.71	1.20		0.70
		N	40.00	4.00	9.00	13.00	35.00	26.00	16.00	21.00	5.00	22.00	5.00		13.00
		Std. Dev.	0.13	0.41	0.69	1.07	0.40	0.91	0.71	1.05	0.51	0.65	0.76		0.51
Uttar Pradesh	Absent	Mean	0.01	0.00	0.00	0.02	0.21	0.08	0.30						
		N	18.00	4.00	3.00	12.00	7.00	3.00	5.00						
		Std. Dev.	0.02	0.00	0.00	0.07	0.39	0.14	0.45						
	Present	Mean	0.07	0.29	0.89	0.51	0.42	0.46	0.96	0.67	0.44	0.30	0.36	0.32	0.90
		N	52.00	4.00	6.00	50.00	52.00	46.00	42.00	47.00	34.00	41.00	27.00	7.00	46.00
		Std. Dev.	0.09	0.22	1.13	0.50	0.29	0.54	2.68	1.24	0.43	0.41	0.33	0.18	2.54
	Total	Mean	0.06	0.14	0.59	0.41	0.40	0.44	0.89	0.67	0.44	0.30	0.36	0.32	0.90

		N	70.00	8.00	9.00	62.00	59.00	49.00	47.00	47.00	34.00	41.00	27.00	7.00	46.00	
		Std. Dev.	0.08	0.21	1.00	0.49	0.31	0.53	2.55	1.24	0.43	0.41	0.33	0.18	2.54	
Uttarakhand	Absent	Mean	0.15		0.06	0.19	0.31		0.17	0.00					0.50	
		N	10.00		4.00	7.00	3.00		5.00	1.00						1.00
		Std. Dev.	0.25		0.13	0.28	0.17		0.24	.						.
	Present	Mean	0.04		1.00	0.81	0.57	0.79	1.99	1.15	0.69	0.58	1.29	0.15	0.45	
		N	12.00		2.00	12.00	12.00	11.00	4.00	11.00	9.00	11.00	3.00	1.00	4.00	
		Std. Dev.	0.05		0.00	0.86	0.81	0.92	2.23	1.83	1.29	1.02	1.66	.	0.64	
	Total	Mean	0.09		0.38	0.58	0.52	0.79	0.98	1.06	0.69	0.58	1.29	0.15	0.46	
		N	22.00		6.00	19.00	15.00	11.00	9.00	12.00	9.00	11.00	3.00	1.00	5.00	
		Std. Dev.	0.18		0.49	0.76	0.73	0.92	1.68	1.77	1.29	1.02	1.66	.	0.55	
Total	Absent	Mean	0.07	0.16	0.16	0.13	0.19	0.19	0.30	1.18	1.00	0.33	0.33	0.33	0.42	
		N	51.00	20.00	18.00	35.00	28.00	11.00	18.00	5.00	1.00	1.00	1.00	1.00	2.00	
		Std. Dev.	0.18	0.31	0.28	0.25	0.30	0.32	0.38	1.15	.	.	.	.	0.12
	Present	Mean	0.12	1.18	0.87	0.84	0.63	0.68	0.95	1.11	0.48	0.65	0.77	0.25	0.84	
		N	211.00	67.00	39.00	129.00	158.00	118.00	110.00	165.00	117.00	128.00	71.00	17.00	146.00	
		Std. Dev.	0.13	1.31	1.11	1.05	0.75	0.78	1.82	3.17	0.73	0.87	0.85	0.25	1.62	
	Total	Mean	0.11	0.95	0.65	0.69	0.56	0.64	0.86	1.11	0.48	0.64	0.77	0.25	0.83	
		N	262.00	87.00	57.00	164.00	186.00	129.00	128.00	170.00	118.00	129.00	72.00	18.00	148.00	
		Std. Dev.	0.14	1.23	0.98	0.98	0.72	0.76	1.71	3.13	0.73	0.87	0.85	0.24	1.61	

Table 5.3.18: Time saved (in minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads by States

Study State	PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries	Mandi	
Bihar	Absent	Mean	1.25	1.67	10.00	1.67	1.67	0.00	0.00	10.00					
		N	4.00	3.00	1.00	3.00	3.00	2.00	2.00	1.00					
		Std. Dev.	2.50	2.89	.	2.89	2.89	0.00	0.00	.					
	Present	Mean	18.41	21.81	26.85	35.82	31.92	15.00	36.43	24.73	3.72	41.17	36.29	15.00	26.25
		N	37.00	26.00	13.00	22.00	24.00	15.00	21.00	26.00	18.00	18.00	14.00	3.00	24.00
		Std. Dev.	15.93	22.87	42.97	45.70	37.80	22.28	34.36	22.50	3.10	46.46	37.19	8.66	22.76
	Total	Mean	16.73	19.72	25.64	31.72	28.56	13.24	33.26	24.19	3.72	41.17	36.29	15.00	26.25
		N	41.00	29.00	14.00	25.00	27.00	17.00	23.00	27.00	18.00	18.00	14.00	3.00	24.00

		Std. Dev.	15.98	22.51	41.53	44.23	36.86	21.43	34.40	22.25	3.10	46.46	37.19	8.66	22.76
Himachal Pradesh	Absent	Mean	64.00							55.50	1.00				
		N	3.00							2.00	1.00				
		Std. Dev.	53.93								62.93	.			
Present	Mean	25.15	24.30		45.00	25.00	2.50			26.50	11.00	0.00	1.67	0.00	9.50
	N	20.00	10.00		2.00	4.00	2.00			15.00	10.00	1.00	3.00	1.00	10.00
	Std. Dev.	22.83	22.87		42.43	34.40	3.54			21.34	11.25	.	2.89	.	43.93
Total	Mean	30.22	24.30		45.00	25.00	2.50			29.91	10.09	0.00	1.67	0.00	9.50
	N	23.00	10.00		2.00	4.00	2.00			17.00	11.00	1.00	3.00	1.00	10.00
	Std. Dev.	29.89	22.87		42.43	34.40	3.54			27.18	11.09	.	2.89	.	43.93
Jharkhand	Absent	Mean	1.25	1.25	6.25	3.13	4.38	5.00	13.75	10.00		10.00	10.00	10.00	10.00
		N	8.00	8.00	4.00	8.00	8.00	8.00	4.00	4.00	1.00		1.00	1.00	1.00
		Std. Dev.	2.31	2.31	9.46	8.84	9.04	10.00	11.09		.		.	.	.
Present	Mean	19.82	21.95	24.43	37.81	38.67	25.42	26.85	22.39	4.79	25.69	44.45	20.00	24.17	
	N	22.00	20.00	7.00	16.00	15.00	12.00	13.00	18.00	14.00	13.00	11.00	2.00	18.00	
	Std. Dev.	10.80	11.80	9.95	31.52	32.37	19.82	16.26	12.86	8.31	16.95	37.65	14.14	14.24	
Total	Mean	14.87	16.04	17.82	26.25	26.74	20.31	23.76	21.74	4.79	24.57	41.58	16.67	23.42	
	N	30.00	28.00	11.00	24.00	23.00	16.00	17.00	19.00	14.00	14.00	12.00	3.00	19.00	
	Std. Dev.	12.47	13.79	13.05	30.83	31.17	19.79	15.94	12.82	8.31	16.81	37.25	11.55	14.22	
Meghalaya	Absent	Mean	10.00	0.00	0.00	0.00	0.00								
		N	3.00	1.00	2.00	2.00	2.00								
		Std. Dev.	17.32	.	0.00	0.00	0.00								
Present	Mean	21.67	16.67	40.00	20.38	38.67	15.83	23.33	16.92	18.57	20.00	20.63	20.00	17.86	
	N	15.00	3.00	2.00	13.00	15.00	6.00	9.00	13.00	14.00	10.00	8.00	1.00	14.00	
	Std. Dev.	14.84	12.58	14.14	14.21	19.68	8.01	16.01	14.51	14.06	15.99	17.41	.	14.10	
Total	Mean	19.72	12.50	20.00	17.67	34.12	15.83	23.33	16.92	18.57	20.00	20.63	20.00	17.86	
	N	18.00	4.00	4.00	15.00	17.00	6.00	9.00	13.00	14.00	10.00	8.00	1.00	14.00	
	Std. Dev.	15.38	13.23	24.49	14.98	22.45	8.01	16.01	14.51	14.06	15.99	17.41	.	14.10	
Punjab	Present	Mean	-0.28	-2.50	-2.50	1.00	6.67	0.00	8.57	1.79	2.50	2.50		0.00	2.35
		N	18.00	4.00	4.00	5.00	6.00	2.00	7.00	14.00	14.00	12.00		2.00	17.00
		Std. Dev.	2.70	2.89	2.89	2.24	5.16	0.00	6.90	3.72	8.03	4.52		0.00	4.37

Total	Mean	-0.28	-2.50	-2.50	1.00	6.67	0.00	8.57	1.79	2.50	2.50		0.00	2.35	
	N	18.00	4.00	4.00	5.00	6.00	2.00	7.00	14.00	14.00	12.00		2.00	17.00	
	Std. Dev.	2.70	2.89	2.89	2.24	5.16	0.00	6.90	3.72	8.03	4.52		0.00	4.37	
Rajasthan	Absent	Mean	5.00	5.50	3.75	8.33	7.00	5.00	17.50						
		N	5.00	4.00	4.00	3.00	5.00	2.00	2.00						
		Std. Dev.	3.54	3.32	4.79	5.77	5.70	0.00	10.61						
	Present	Mean	17.77		14.00	36.50	21.50	14.38	19.29	20.81	5.40	22.27	34.00	25.00	22.31
		N	35.00		5.00	10.00	30.00	24.00	14.00	21.00	5.00	22.00	5.00	1.00	13.00
		Std. Dev.	24.03		11.94	34.88	34.72	19.30	17.08	27.65	6.77	31.20	48.27	.	17.27
	Total	Mean	16.18	5.50	9.44	30.00	19.43	13.65	19.06	20.81	5.40	22.27	34.00	25.00	22.31
		N	40.00	4.00	9.00	13.00	35.00	26.00	16.00	21.00	5.00	22.00	5.00	1.00	13.00
		Std. Dev.	22.87	3.32	10.44	32.72	32.53	18.68	16.15	27.65	6.77	31.20	48.27	.	17.27
Uttar Pradesh	Absent	Mean	0.83	0.00	0.00	0.42	12.86	1.67	12.00						
		N	18.00	4.00	3.00	12.00	7.00	3.00	5.00						
		Std. Dev.	2.57	0.00	0.00	1.44	23.60	2.89	16.43						
	Present	Mean	7.56	6.25	13.33	9.96	19.04	11.48	21.67	9.43	6.03	6.93	18.26	19.58	16.61
		N	52.00	4.00	6.00	50.00	52.00	46.00	42.00	47.00	34.00	45.00	27.00	12.00	46.00
		Std. Dev.	9.22	4.79	16.93	14.37	17.01	18.39	18.89	9.80	8.01	9.52	18.92	14.37	16.95
	Total	Mean	5.83	3.13	8.89	8.11	18.31	10.88	20.64	9.43	6.03	6.93	18.26	19.58	16.61
		N	70.00	8.00	9.00	62.00	59.00	49.00	47.00	47.00	34.00	45.00	27.00	12.00	46.00
		Std. Dev.	8.56	4.58	14.95	13.45	17.78	17.98	18.73	9.80	8.01	9.52	18.92	14.37	16.95
Uttarakhand	Absent	Mean	4.10		1.25	3.57	10.67		3.00	0.00				10.00	
		N	10.00		4.00	7.00	3.00		5.00	1.00				1.00	
		Std. Dev.	5.32		2.50	4.76	4.04		4.47	.				.	
	Present	Mean	12.50		12.50	27.08	37.92	23.64	42.50	15.18	6.67	36.82	51.25	30.00	23.75
		N	12.00		2.00	12.00	12.00	11.00	4.00	11.00	9.00	11.00	4.00	1.00	4.00
		Std. Dev.	21.58		3.54	29.65	32.01	31.39	21.79	27.48	7.50	51.73	73.53	.	16.01
	Total	Mean	8.68		5.00	18.42	32.47	23.64	20.56	13.92	6.67	36.82	51.25	30.00	21.00
		N	22.00		6.00	19.00	15.00	11.00	9.00	12.00	9.00	11.00	4.00	1.00	5.00
		Std. Dev.	16.57		6.32	26.09	30.58	31.39	24.93	26.57	7.50	51.73	73.53	.	15.17
Total	Absent	Mean	6.24	1.85	3.06	2.43	7.04	3.18	9.17	26.20	1.00	10.00	10.00	10.00	
		N	51.00	20.00	18.00	35.00	28.00	11.00	18.00	5.00	1.00	1.00	1.00	1.00	

	Std. Dev.	18.88	2.91	5.46	5.34	13.07	6.03	11.54	41.50	.	.	.	.	0.00
Present	Mean	14.72	19.61	19.62	22.62	26.30	14.94	24.85	16.58	7.04	19.03	28.26	17.17	17.80
	N	211.00	67.00	39.00	130.00	158.00	118.00	110.00	165.00	118.00	132.00	72.00	23.00	146.00
	Std. Dev.	17.58	19.07	27.68	29.84	28.81	20.41	22.63	19.36	9.69	29.91	33.67	13.21	20.44
Total	Mean	13.06	15.53	14.39	18.34	23.40	13.94	22.65	16.86	6.99	18.96	28.01	16.88	17.70
	N	262.00	87.00	57.00	165.00	186.00	129.00	128.00	170.00	119.00	133.00	73.00	24.00	148.00
	Std. Dev.	18.11	18.37	24.28	27.84	27.88	19.86	22.07	20.18	9.67	29.81	33.50	13.01	20.32

Table 5.3.19: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads by Agro-Climatic Zones

Agro-Climatic Zone PMGSY Road		Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries	Mandi
0.00	Mean	0.14			1.25	2.00			2.00	2.00	2.00	2.00	0.00	0.00
	Present N	2.00			2.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
	Std. Deviation	0.20			1.06	.			.	.	.	.	.	.
1.00	Mean	0.14			1.25	2.00			2.00	2.00	2.00	2.00	0.00	0.00
	Total N	2.00			2.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
	Std. Deviation	0.20			1.06	.			.	.	.	.	.	.
2.00	Mean	0.02	0.19	0.18	0.10	0.18	0.18	0.30	0.50		0.33	0.33	0.33	0.33
	Absent N	27.00	15.00	10.00	21.00	19.00	9.00	11.00	1.00		1.00	1.00	1.00	1.00
	Std. Deviation	0.04	0.35	0.34	0.25	0.32	0.33	0.45	.	.	.	.	.	.
3.00	Mean	0.11	0.78	0.68	0.67	0.44	0.60	0.82	0.72	0.33	0.47	0.52	0.28	0.78
	Present N	120.00	28.00	20.00	74.00	96.00	73.00	72.00	94.00	60.00	76.00	36.00	8.00	88.00
	Std. Deviation	0.14	0.71	0.81	0.82	0.36	0.76	2.08	1.07	0.40	0.60	0.48	0.20	1.89
4.00	Mean	0.09	0.57	0.51	0.55	0.40	0.55	0.75	0.72	0.33	0.46	0.52	0.29	0.77
	Total N	147.00	43.00	30.00	95.00	115.00	82.00	83.00	95.00	60.00	77.00	37.00	9.00	89.00
	Std. Deviation	0.13	0.67	0.72	0.77	0.36	0.74	1.95	1.06	0.40	0.59	0.48	0.19	1.88
5.00	Mean	0.13			0.50	0.44	0.89	1.33	0.54		0.54	0.75		0.75
	Present N	6.00			1.00	6.00	6.00	4.00	3.00		6.00	2.00		2.00
	Std. Deviation	0.10			.	0.30	0.61	1.14	0.24		0.37	0.35		0.35
6.00	Mean	0.13			0.50	0.44	0.89	1.33	0.54		0.54	0.75		0.75
	Total N	6.00			1.00	6.00	6.00	4.00	3.00		6.00	2.00		2.00
	Std. Deviation	0.10			.	0.30	0.61	1.14	0.24		0.37	0.35		0.35
7.00	Present Mean	0.00	0.00	0.00	0.00	0.25	0.00	1.00	0.06	0.00	0.00			0.06

	N	4.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	3.00	3.00			4.00
	Std. Deviation	0.00	.	.	.	.	.	.	0.13	0.00	0.00			0.13
	Mean	0.00	0.00	0.00	0.00	0.25	0.00	1.00	0.06	0.00	0.00			0.06
Total	N	4.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	3.00	3.00			4.00
	Std. Deviation	0.00	.	.	.	.	.	.	0.13	0.00	0.00			0.13
	Mean	0.20	0.00	0.00	0.04	0.15			2.38	1.00				
Absent	N	13.00	1.00	3.00	4.00	4.00			2.00	1.00				
	Std. Deviation	0.30	.	0.00	0.08	0.21			0.53	.				
4.00 Present	Mean	0.13	2.08	0.90	0.82	0.71	0.66	0.97	2.13	0.86	0.50	0.56	0.00	0.83
	N	45.00	13.00	3.00	25.00	29.00	18.00	12.00	38.00	31.00	20.00	13.00	2.00	27.00
	Std. Deviation	0.13	2.00	0.16	1.06	1.02	0.75	1.39	6.29	1.18	0.76	0.82	0.00	1.37
Total	Mean	0.14	1.93	0.45	0.71	0.64	0.66	0.97	2.14	0.87	0.50	0.56	0.00	0.83
	N	58.00	14.00	6.00	29.00	33.00	18.00	12.00	40.00	32.00	20.00	13.00	2.00	27.00
	Std. Deviation	0.18	2.00	0.51	1.02	0.98	0.75	1.39	6.13	1.16	0.76	0.82	0.00	1.37
	Mean	0.05		0.08	0.23	0.33		0.17	0.00					0.50
Absent	N	6.00		3.00	5.00	1.00		5.00	1.00					1.00
	Std. Deviation	0.08		0.14	0.32	.		0.24	.					.
5.00 Present	Mean	0.07		1.00	1.13	0.57	1.00	0.50	0.50	0.50	0.69	0.33	0.15	1.40
	N	2.00		1.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
	Std. Deviation	0.02		.	0.18	0.10	.	.	.	.	0.27	.	.	.
Total	Mean	0.05		0.31	0.49	0.49	1.00	0.22	0.25	0.50	0.69	0.33	0.15	0.95
	N	8.00		4.00	7.00	3.00	1.00	6.00	2.00	1.00	2.00	1.00	1.00	2.00
	Std. Deviation	0.07		0.47	0.51	0.15	.	0.25	0.35	.	0.27	.	.	0.64
	Mean	0.08	0.11	0.38	0.18	0.23	0.25	0.61	0.67					
Absent	N	5.00	4.00	2.00	5.00	4.00	2.00	2.00	1.00					
	Std. Deviation	0.18	0.13	0.18	0.31	0.34	0.35	0.15	.					
6.00 Present	Mean	0.15	1.22	1.19	1.39	1.32	0.96	1.37	1.26	0.34	1.53	1.39	0.35	1.22
	N	32.00	25.00	14.00	24.00	23.00	19.00	20.00	24.00	21.00	20.00	18.00	5.00	23.00
	Std. Deviation	0.13	1.20	1.55	1.52	1.17	0.91	1.09	0.97	0.30	1.37	1.16	0.33	0.85
Total	Mean	0.14	1.07	1.09	1.18	1.16	0.89	1.30	1.24	0.34	1.53	1.39	0.35	1.22
	N	37.00	29.00	16.00	29.00	27.00	21.00	22.00	25.00	21.00	20.00	18.00	5.00	23.00
	Std. Deviation	0.14	1.18	1.47	1.46	1.15	0.89	1.06	0.96	0.30	1.37	1.16	0.33	0.85
Total	Mean	0.07	0.16	0.16	0.13	0.19	0.19	0.30	1.18	1.00	0.33	0.33	0.33	0.42
	Absent N	51.00	20.00	18.00	35.00	28.00	11.00	18.00	5.00	1.00	1.00	1.00	1.00	2.00
	Std. Deviation	0.18	0.31	0.28	0.25	0.30	0.32	0.38	1.15	.	.	.	.	0.12
	Mean	0.12	1.18	0.87	0.84	0.63	0.68	0.95	1.11	0.48	0.65	0.77	0.25	0.84
	N	211.00	67.00	39.00	129.00	158.00	118.00	110.00	165.00	117.00	128.00	71.00	17.00	146.00

	Std. Deviation	0.13	1.31	1.11	1.05	0.75	0.78	1.82	3.17	0.73	0.87	0.85	0.25	1.62
	Mean	0.11	0.95	0.65	0.69	0.56	0.64	0.86	1.11	0.48	0.64	0.77	0.25	0.83
Total	N	262.00	87.00	57.00	164.00	186.00	129.00	128.00	170.00	118.00	129.00	72.00	18.00	148.00
	Std. Deviation	0.14	1.23	0.98	0.98	0.72	0.76	1.71	3.13	0.73	0.87	0.85	0.24	1.61

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

Table 5.3.20: Time saved (in minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads by Agro-Climatic Zones

AgroClimaticZone	PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries	Mandi
0.00	Mean	60.00			60.00	120.00			120.00	30.00	120.00	120.00	0.00	0.00
	Present N	2.00			2.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
	Std. Deviation	84.85			84.85	.			.	.	.	.	.	.
	Mean	60.00			60.00	120.00			120.00	30.00	120.00	120.00	0.00	0.00
	Total N	2.00			2.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
	Std. Deviation	84.85			84.85	.			.	.	.	.	.	.
1.00	Mean	1.67	1.80	3.50	1.43	7.11	1.67	9.55	10.00		10.00	10.00	10.00	10.00
	Absent N	27.00	15.00	10.00	21.00	19.00	9.00	11.00	1.00		1.00	1.00	1.00	1.00
	Std. Deviation	3.10	3.05	6.69	3.59	14.94	2.50	12.74						
	Mean	10.98	15.89	15.25	16.31	19.95	13.81	21.46	12.68	4.52	11.65	20.81	18.57	17.88
	Present N	120.00	28.00	20.00	75.00	96.00	73.00	72.00	94.00	60.00	80.00	36.00	14.00	88.00
	Std. Deviation	12.61	16.72	19.50	24.04	24.37	21.53	20.58	14.85	6.88	18.62	19.86	14.34	18.90
2.00	Mean	9.27	10.98	11.33	13.05	17.83	12.48	19.88	12.65	4.52	11.63	20.51	18.00	17.79
	Total N	147.00	43.00	30.00	96.00	115.00	82.00	83.00	95.00	60.00	81.00	37.00	15.00	89.00
	Std. Deviation	12.02	15.14	17.17	22.16	23.51	20.67	20.08	14.78	6.88	18.51	19.66	13.99	18.81
	Mean	9.17			10.00	17.50	15.83	38.75	18.33		15.83	10.00		10.00
	Present N	6.00			1.00	6.00	6.00	4.00	3.00		6.00	2.00		2.00
	Std. Deviation	10.68			.	14.05	15.30	6.29	18.93		9.17	0.00		0.00
3.00	Mean	9.17			10.00	17.50	15.83	38.75	18.33		15.83	10.00		10.00
	Total N	6.00			1.00	6.00	6.00	4.00	3.00		6.00	2.00		2.00
	Std. Deviation	10.68			.	14.05	15.30	6.29	18.93		9.17	0.00		0.00
	Mean	0.00	0.00	0.00	0.00	10.00	0.00	20.00	2.50	0.00	0.00			2.50
	Present N	4.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	3.00	3.00			4.00
	Std. Deviation	0.00	.	.	.	.	.	.	5.00	0.00	0.00			5.00
Total	Mean	0.00	0.00	0.00	0.00	10.00	0.00	20.00	2.50	0.00	0.00			2.50

	N	4.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	3.00	3.00			4.00
	Std. Deviation	0.00	.	.	.	.	.	.	5.00	0.00	0.00			5.00
	Mean	19.62	0.00	0.00	1.25	4.25			55.50	1.00				
	Absent N	13.00	1.00	3.00	4.00	4.00			2.00	1.00				
	Std. Deviation	34.63	.	0.00	2.50	5.06			62.93	.				
	Mean	21.18	22.54	31.67	24.80	35.69	19.72	29.17	20.38	13.13	26.25	25.71	10.00	15.00
4.00	Present N	45.00	13.00	3.00	25.00	29.00	18.00	12.00	38.00	32.00	20.00	14.00	2.00	27.00
	Std. Deviation	20.87	20.73	17.56	24.30	26.52	25.23	20.21	21.66	12.68	39.20	41.87	14.14	28.45
	Mean	20.83	20.93	15.83	21.55	31.88	19.72	29.17	22.14	12.76	26.25	25.71	10.00	15.00
Total	N	58.00	14.00	6.00	29.00	33.00	18.00	12.00	40.00	33.00	20.00	14.00	2.00	27.00
	Std. Deviation	24.27	20.81	20.60	23.98	26.95	25.23	20.21	24.63	12.66	39.20	41.87	14.14	28.45
	Mean	1.33		1.67	4.00	15.00		3.00	0.00					10.00
	Absent N	6.00		3.00	5.00	1.00		5.00	1.00					1.00
	Std. Deviation	2.16		2.89	5.48	.		4.47	.					.
	Mean	12.50		10.00	30.00	50.00	5.00	30.00	10.00	10.00	40.00	15.00	30.00	35.00
5.00	Present N	2.00		1.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
	Std. Deviation	3.54		.	28.28	28.28	.	.	.	.	42.43	.	.	.
	Mean	4.13		3.75	11.43	38.33	5.00	7.50	5.00	10.00	40.00	15.00	30.00	22.50
Total	N	8.00		4.00	7.00	3.00	1.00	6.00	2.00	1.00	2.00	1.00	1.00	2.00
	Std. Deviation	5.64		4.79	17.73	28.43	.	11.73	7.07	.	42.43	.	.	17.68
	Mean	2.00	2.50	7.50	6.00	7.50	10.00	22.50	10.00					
	Absent N	5.00	4.00	2.00	5.00	4.00	2.00	2.00	1.00					
	Std. Deviation	2.74	2.89	3.54	10.84	11.90	14.14	3.54						
	Mean	19.81	23.04	25.36	37.83	37.87	15.79	31.70	23.92	4.76	38.00	42.83	17.00	24.17
6.00	Present N	32.00	25.00	14.00	24.00	23.00	19.00	20.00	24.00	21.00	20.00	18.00	5.00	23.00
	Std. Deviation	17.45	20.52	38.75	40.48	38.33	11.82	31.05	18.66	6.53	42.03	41.11	9.75	15.89
	Mean	17.41	20.21	23.13	32.34	33.37	15.24	30.86	23.36	4.76	38.00	42.83	17.00	24.17
Total	N	37.00	29.00	16.00	29.00	27.00	21.00	22.00	25.00	21.00	20.00	18.00	5.00	23.00
	Std. Deviation	17.35	20.34	36.60	38.89	37.16	11.78	29.67	18.48	6.53	42.03	41.11	9.75	15.89
	Mean	6.24	1.85	3.06	2.43	7.04	3.18	9.17	26.20	1.00	10.00	10.00	10.00	10.00
	Absent N	51.00	20.00	18.00	35.00	28.00	11.00	18.00	5.00	1.00	1.00	1.00	1.00	2.00
	Std. Deviation	18.88	2.91	5.46	5.34	13.07	6.03	11.54	41.50	.	.	.	.	0.00
	Mean	14.72	19.61	19.62	22.62	26.30	14.94	24.85	16.58	7.04	19.03	28.26	17.17	17.80
Total	Present N	211.00	67.00	39.00	130.00	158.00	118.00	110.00	165.00	118.00	132.00	72.00	23.00	146.00
	Std. Deviation	17.58	19.07	27.68	29.84	28.81	20.41	22.63	19.36	9.69	29.91	33.67	13.21	20.44
	Mean	13.06	15.53	14.39	18.34	23.40	13.94	22.65	16.86	6.99	18.96	28.01	16.88	17.70
	N	262.00	87.00	57.00	165.00	186.00	129.00	128.00	170.00	119.00	133.00	73.00	24.00	148.00

Std. Deviation	18.11	18.37	24.28	27.84	27.88	19.86	22.07	20.18	9.67	29.81	33.50	13.01	20.32
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(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

Appendix 12: Comparative Analysis of Perception of Improvement in Access to Facilities for PMGSY and non-PMGSY based on Habitation Data

a. Access to health facilities * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Access to health facilities	Decreased_deteriorated significantly	26	9	35
	Decreased somewhat	26	5	31
	No change	3	6	9
	Improved or increased somewhat	0	109	109
	Improved or increased statistically significantly	0	82	82
Total		55	211	266

b. Visits to the villages by ANMS_Nurses_Doctors * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Visits to the villages by ANMS_Nurses_Doctors	Decreased_deteriorated significantly	19	7	26
	Decreased somewhat	33	6	39
	No change	2	4	6
	Improved or increased somewhat	0	128	128
	Improved or increased statistically significantly	0	66	66
Total		54	211	265

c. Availability of Emergency services like 108_Police * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Availability of Emergency services like 108_Police	Decreased_deteriorated significantly	15	2	17
	Decreased somewhat	38	9	47
	No change	1	8	9
	Improved or increased somewhat	0	125	125
	Improved or increased statistically significantly	0	67	67
Total		54	211	265

d. Visits by teachers and government officials * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent		
		Absent	Present	
Visits by teachers and government officials	Decreased_deteriorated significantly	12	4	16
	Decreased somewhat	40	10	50
	No change	2	8	10
	Improved or increased somewhat	0	126	126
	Improved or increased statistically significantly	0	63	63
	Total		54	211	265

e. Visits by our friends and relatives * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent		
		Absent	Present	
Visits by our friends and relatives	Decreased_deteriorated significantly	11	3	14
	Decreased somewhat	41	9	50
	No change	2	8	10
	Improved or increased somewhat	0	125	125
	Improved or increased statistically significantly	0	66	66
	Total		54	211	265

f. Regularity of children attending colleges located nearby * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent		
		Absent	Present	
Regularity of children attending colleges located nearby	Decreased_deteriorated significantly	9	4	13
	Decreased somewhat	43	5	48
	No change	2	10	12
	Improved or increased somewhat	0	125	125
	Improved or increased statistically significantly	0	67	67
	Total		54	211	265

g. Traffic from and to our village * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent		
		Absent	Present	
Traffic from and to our village	Decreased_deteriorated significantly	6	1	7
	Decreased somewhat	47	6	53
	No change	1	12	13
	Improved or increased somewhat	0	135	135
	Improved or increased statistically significantly	0	57	57
	Total		54	211	265

h. Maintenance of PMGSY road * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Maintenance of PMGSY road	Decreased_deteriorated significantly	9	8	17
	Decreased somewhat	43	17	60
	No change	2	28	30
	Improved or increased somewhat	0	105	105
	Improved or increased statistically significantly	0	53	53
Total		54	211	265

i. Safety of Travel to and from our village * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Safety of Travel to and from our village	Decreased_deteriorated significantly	12	3	15
	Decreased somewhat	39	8	47
	No change	3	13	16
	Improved or increased somewhat	0	144	144
	Improved or increased statistically significantly	0	43	43
Total		54	211	265

j. Economic activity in our village * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Economic activity in our village	Decreased_deteriorated significantly	8	1	9
	Decreased somewhat	43	8	51
	No change	2	7	9
	Improved or increased somewhat	1	147	148
	Improved or increased statistically significantly	0	48	48
Total		54	211	265

k. Access to markets_mandis for agriculture produce * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Access to markets_mandis for agriculture produce	Decreased_deteriorated significantly	6	1	7
	Decreased somewhat	47	6	53
	No change	1	6	7
	Improved or increased somewhat	0	156	156
	Improved or increased statistically significantly	0	42	42

Total	54	211	265
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l. Access to markets _mandis for animal husbandary_dairy_fishing_poultry * PMGSYRoadPresent Crosstabulation

Count		PMGSYRoadPresent		Total
		Absent	Present	
Access to markets _mandis for animal husbandary_dairy_fishing_poultry	Decreased_deteriorated significantly	7	0	7
	Decreased somewhat	43	1	44
	No change	4	3	7
	Improved or increased somewhat	0	197	197
	Improved or increased statistically significantly	0	10	10
	Total	54	211	265

m. Price realization of agricultural produce * PMGSYRoadPresent Crosstabulation

Count		PMGSYRoadPresent		Total
		Absent	Present	
Price realization of agricultural produce	Decreased_deteriorated significantly	13	0	13
	Decreased somewhat	38	2	40
	No change	3	3	6
	Improved or increased somewhat	0	200	200
	Improved or increased statistically significantly	0	6	6
	Total	54	211	265

n. Shift in agricultural practices or cropping pattern * PMGSYRoadPresent Crosstabulation

Count		PMGSYRoadPresent		Total
		Absent	Present	
Shift in agricultural practices or cropping pattern	Decreased_deteriorated significantly	9	1	10
	Decreased somewhat	43	2	45
	No change	2	24	26
	Improved or increased somewhat	0	172	172
	Improved or increased statistically significantly	0	12	12
	Total	54	211	265

o. Access to construction and infrastructure related jobs * PMGSYRoadPresent Crosstabulation

Count		PMGSYRoadPresent		Total
		Absent	Present	
Access to construction and infrastructure related jobs	Decreased_deteriorated significantly	9	0	9
	Decreased somewhat	41	2	43
	No change	4	9	13
	Improved or increased somewhat	0	192	192

	Improved or increased statistically significantly	0	8	8
	Total	54	211	265

p. Number of individuals who travel to a nearby town or city daily jobs * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Number of individuals who travel to a nearby town or city daily jobs	Decreased_deteriorated significantly	9	5	14
	Decreased somewhat	43	7	50
	No change	2	6	8
	Improved or increased somewhat	0	155	155
	Improved or increased statistically significantly	0	38	38
	Total	54	211	265

q. Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	Decreased_deteriorated significantly	18	0	18
	Decreased somewhat	32	2	34
	No change	4	4	8
	Improved or increased somewhat	0	197	197
	Improved or increased statistically significantly	0	8	8
	Total	54	211	265

r. Number of HHs that own a motor vehicle * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Number of HHs that own a motor vehicle	Decreased_deteriorated significantly	6	4	10
	Decreased somewhat	45	8	53
	No change	3	4	7
	Improved or increased somewhat	0	140	140
	Improved or increased statistically significantly	0	55	55
	Total	54	211	265

s. Maintenance cost for motor vehicle * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Maintenance cost for motor vehicle	Decreased_deteriorated significantly	8	8	16
	Decreased somewhat	44	48	92
	No change	1	55	56

	Improved or increased somewhat	0	56	56
	Improved or increased statistically significantly	0	44	44
	Total	53	211	264

t. The cases of HHs which used to migrate temporarily * PMGSYRoadPresent Crosstabulation

		PMGSYRoadPresent		Total
		Absent	Present	
The cases of HHs which used to migrate temporarily	Decreased_deteriorated significantly	7	4	11
	Decreased somewhat	43	12	55
	No change	2	64	66
	Improved or increased somewhat	1	91	92
	Improved or increased statistically significantly	0	40	40
	Total	53	211	264

u. Instances of landslides_soil disposal_soil erosion * PMGSYRoadPresent Crosstabulation

		PMGSYRoadPresent		Total
		Absent	Present	
Instances of landslides_soil disposal_soil erosion	Decreased_deteriorated significantly	7	1	8
	Decreased somewhat	42	7	49
	No change	4	21	25
	Improved or increased somewhat	0	171	171
	Improved or increased statistically significantly	0	11	11
	Total	53	211	264

v. Impact on environment through pollution of vehicular movement * PMGSYRoadPresent Crosstabulation

		PMGSYRoadPresent		Total
		Absent	Present	
Impact on environment through pollution of vehicular movement	Decreased_deteriorated significantly	12	0	12
	Decreased somewhat	38	2	40
	No change	2	29	31
	Improved or increased somewhat	1	170	171
	Improved or increased statistically significantly	0	10	10
	Total	53	211	264

w. Safe to use the after PMGSY road has been built * PMGSYRoadPresent Crosstabulation

		PMGSYRoadPresent		Total
		Absent	Present	
Safe to use the after PMGSY road has been built	Decreased_deteriorated significantly	10	4	14
	Decreased somewhat	41	6	47
	No change	0	8	8

	Improved or increased somewhat	2	159	161
	Improved or increased statistically significantly	0	34	34
	Total	53	211	264

x. Law and order situation_crime rate in your and neighbouring village * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Law and order situation_crime rate in your and neighbouring village	Decreased_deteriorated significantly	17	1	18
	Decreased somewhat	34	4	38
	No change	1	4	5
	Improved or increased somewhat	1	191	192
	Improved or increased statistically significantly	0	11	11
	Total	53	211	264

y. Connectivity to nearby villages * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Connectivity to nearby villages	Decreased_deteriorated significantly	29	0	29
	Decreased somewhat	22	2	24
	No change	3	2	5
	Improved or increased somewhat	0	197	197
	Improved or increased statistically significantly	0	10	10
	Total	54	211	265

z. Connectivity to nearby major centre * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Connectivity to nearby major centre	Decreased_deteriorated significantly	12	0	12
	Decreased somewhat	41	2	43
	No change	1	0	1
	Improved or increased somewhat	0	182	182
	Improved or increased statistically significantly	0	27	27
	Total	54	211	265

Appendix 13: Habitation Questionnaire including Perceptions and Opinions about Access and Other Variables

PMGSY Village Level Questionnaire (To be filled after the first draft of the hand drawn map)

Investigator Email id	Interview starting time	Questionnaire ID
Name of Investigator: _____		Signature: _____
Time of starting interview :	Hours -----	Minutes -----

Background Profile

Sr. No	Identification	Response	
1.	Name of the respondent		
2.	Gender	Male	Female
3.	Role/Designation		
4.	State		
5.	District		
6.	Block		
7.	Village		
8.	Contact No., If any		
9.	Building Name and No.		
10.	Street Name/Society Name/ Landmark		
11.	Area		
12.	Village Panchayat Under which it falls		
13.	Population as per respondent		
14.	HH as per respondent		
15.	SC/ST population as per respondent		

16.	Male population as per respondent	
17.	Female population as per respondent	
18.	No. of families holding a BPL Card	

19.	In your village, please rank the following in order of the most common economic activity	1. Agriculture	Rank
		2. Animal Husbandry	Rank
		3. Forestry	Rank
		4. Mining	Rank
		5. Industry	Rank
		6. Others 1 (Specify) _____	Rank
		7. Others 2 (Specify) _____	Rank
		8. Others 3 (Specify) _____	Rank

Road Connectivity

20.	Now we will talk about the roads that connect your village to the outside world. (Road numbers to be referenced with the Hand Drawn Map)						
	Details	Road 1	Road 2	Road 3	Road 4	Road 5	Road 6
	a. Road Description						
	b. Connects to						

c. Approx. Distance in Km.						
Can you please indicate whether the Road connecting your village to the block/district/state road is PMGSY road or not. (Tick applicable)				Yes	No	
d. Type of Road						
e. Time it takes before						
f. Time it takes now						
g. Before PMGSY road condition						
h. After 1 year of construction of PMGSY Road						
i. Current/Existing Road Condition						

2] Now we will try to understand about your access to various facilities														
Tick the facilities available	Markets	Habitat ion of higher order	Village of higher order	District headquarter	Taluka headquarter	State highway at its nearest point	Theatre/Mall	Health Centre	School	College	Vocational Training Centre	Industrial Cluster	Mandi / APMC	Other,Specify:
Village / Town / City														
Distance in km														
PMGSY road or other good roads service is available														
Mode of Transport used to reach at Bus stand/Pi														

<p>ck up Stand Walk Bike/Sc ooter Bicycle Tractor 3 wheeler Pickup s Van Car Bus Auto- ricksha w Other, Specify</p>														
<p>Mode of Transpo rt used to reach at Facility Walk Bike/Sc ooter Bicycle Tractor 3 wheeler Pickup s Van Car Bus Auto- ricksha w Other, Specify</p>														
<p>Time it used to take earlier</p>														
<p>Time is used to take currentl y</p>														
<p>Cost of travel before PMGS Y</p>														

road/pr ogram														
Cost of travel Currentl y PMGS Y road														
Has there been better accessib ility to the access points because of PMGS Y.														

Agricultural profile

22.	Now we will try and understand the land patterns in your village. (in %)	Agricultural land		
		Government Land (Reserve Forest, Other Government owned land)		
		Land for Housing		
		Land for Industries and other non agricultural activities		
		Common Land for Grazing, Goucher		
		Land used for irrigation, water storage and ponds		
		Waste Land		
23.	Now we will try and understand the land and irrigation patterns in your village. What % of HHs in your village own agricultural land?			
24.	What, in your estimate, would be the average holding per family (Only Agricultural) (in acres)			
25.	What % of agricultural land in your village is irrigated by the following source given below?			
	By Bore well / Well (Lifted Mechanically or manually)	By piped connection	By Rainwater (Non-Irrigated)	By River / Canal
26.	What % of agricultural HHs in your village use mechanized devices like tractors / harvesters etc ?			

		Tractors		Tillers, Harvesters (other Agricultural Mechanised Devices)	
		Use (Yes/No)	Owned/Hired	Use (Yes/No)	Owned/Hired
Before PMGSY road was built (Mention the year)					
After PMGSY road was built, during the initial maintenance period (Mention the year)					
Currently					
27.	Now we will try and understand the income patterns in your village	Income Sources		Average Income of HH	No of HH
		Income from agriculture			
		Income from handicraft			
		Income from animal husbandary/poultry/fishing			
		Income from agricultural wages within the village or nearby villages			
		Wages earned by working outside village (Wages and salaries to faraway village or Block HQ, District Hq)			
		Income earned by migrant			
Income from other income, transfer money orders, remittances, pensions					
28.	Now we will try and understand the assets ownership in your village. What % of HHs in your village owns the following things given below :				
Assets		% HH owning	Assets		% HH owning
Refrigerator			Tractor		
Pucca Hous			Tillers/Hand Tillers		
Constructed Toilets			Irrigation Pump Sets		
Pipeline Water connection			Threshers		
Bore well with pipeline connection			Winnowers		
Well inside the house			Bailing Machines		
2 Wheeler			Machinery used for other economic activity (HHs)		
3 Wheeler			Any other Heavy Equipment		
Car					

Jeep			
SUV			
Bicycle			
29.	When was the first PMGSY road was completed in this village?		

Perceptions and opinions

30.	Describe the PMGSY Road that has been built and also the year in which it has been built. Now ask the following questions with respect to the PMGSY Road described. Answer should be in terms in terms of Improved or decreased				
Statement	Improved or increased significantly	Improved/increased somewhat	No change	Decreased somewhat	Decreased/deteriorated significantly may be used
The access to health facilities for our village due to the PMGSY Road has < Tick the applicable option >					
Visits to the village by ANMs/Nurses/Doctors due to the PMGSY Road has < Tick the applicable option >					
Availability of Emergency Services like 108, Police etc. due to the PMGSY Road < Tick the applicable option >					
Visits by Teachers and government officials to our village due to the PMGSY Road has < Tick the applicable option>					
Visits by our friends and relatives to our village due to the PMGSY Road has < Tick the applicable option >					
Regularity of the children of our village attending schools (Secondary/Higher Secondary)					

and colleges located in nearby locations due to the PMGSY Road has < Tick the applicable option >					
Regularity of the children of our village are attending Colleges located in nearby locations due to the PMGSY Road has < Tick the applicable option >					
The traffic from and to our village due to the PMGSY Road has < Tick the applicable option >					
Maintenance of PMSGY road has					
After the PMGSY road has been built, Safety of Travel (ie Less Accidents) to and from our village has < Tick the applicable option >					
After the PMGSY Road has been built, economic activity in our village has < Tick the applicable option >					
The access to markets / mandi for selling the agricultural produce from our village has < Tick the applicable option >					
The access to markets / mandi for selling the animal husbandary/dairying/fishing/					

poultry from our village has < Tick the applicable option>					
After the PMGSY road has been built price realization of the agricultural produce has <Tick the applicable option>					
After the PMGSY road has been built shift in agricultural practices or cropping pattern has <Tick the applicable option>					
Access to construction and infrastructure related jobs as well has <Tick the applicable option>					
After the PMGSY road has been built the number of individuals from our village who travel to a nearby town or city daily for a job has <Tick the applicable option>					
After the PMGSY road has been built the number of individuals from our village who travel to a nearby town or city daily recreation, social functions and festivals has <Tick the applicable option>					
After the PMGSY road has been built the number of HHs in our village that own a motor vehicle has <Tick the applicable option>					

After the PMGSY road has been built the maintenance cost for motor vehicle has <Tick the applicable option>					
After PMGSY road has been built, the cases of HHs, which used to migrate temporarily has changed <Tick the applicable option>					
After PMGSY road has been built, instances of landslides/soil disposal/soil erosion has <Tick the applicable option>					
After PMGSY road has been built, do you think that there is impact on environment through pollution of the vehicular movement <Tick the applicable option>					
Do you think that it is safe to use the road after PMGSY road has been built.<Tick the applicable option>					
After the PMGSY road has been built, do you think that the law and order situation/crime rate in your and neighbouring village has <Tick the applicable option>					
After the PMGSY road has been built, feeling of connectivity to nearby villages has <Tick the applicable option>					
After the PMGSY road has been built, feeling of connectivity to					

nearby major centre has <Tick the applicable option>						
31.	If the answer is No change or Decrease somewhat or Decreased/deteriorated statistically significantly may be used of above statement (Do you think that it is safe to use the road after PMGSY road has been built) than cite the reason for the same	Road quality is not good		There is more traffic on that road		
		Road is not well maintained		The road is congested		
		There is no street light		There is no footpath		

32.	What % of the village people are actually benefited from this PMGSY road?				
33.	What do you think can help improve the connectivity further	Improve type of road of other roads from the village		Better design for monsoon (All weather usage)	
		Maintenance of roads		Wider roads	
		Diversion of Traffic		Material of Road Construction	
		Create other roads for through		Specify (Others)	
		Reduce congestion			
		Provide footpath			

Appendix 14: Correlations between Perception of Access and Other Benefit Variables and Speed Gain Variables by Type of Connectivity (based on HH data)

Table 5.4.1: Correlations between Perception of Access and Other Benefit Variables based on HH Dataset

		Access to health facilities	Visits to the villages by ANMS_Nurses_Doctors	Availability of Emergency services like 108_Police	Visits by teachers and government officials	Visits by our friends and relatives	Regularity of children attending schools located	Regularity of children attending colleges located	Traffic from and to our village	Safety of Travel to and from our village	Economic activity in our village	Access to markets_mandis for agriculture produce	Access to markets_mandis for animal	Price realization of agricultural produce	Shift in agricultural practices or cropping pattern	Access to construction and infrastructure related jobs	Number of individuals who travel to a nearby town or city	Number of individuals who travel to a nearby town or city	Number of motor vehicles owned by our HH	Maintenance cost for motor vehicle	New planned economic activities in the HH	Information about actual price of agri.croods.and.milk	The cases of HHs which used to migrate temporarily	Instances of landslides_soil erosion	Impact on environment through pollution of vehicular	Safe to use the after PMGSY road has been built	Law and order situation_crime rate in your and neighbouring villages	Connectivity to nearby villages	Connectivity to nearby major centre
Access to health facilities	Pearson Correlation (2-tailed) N	1.0 2191	0.6 2185	0.6 2182	0.6 2177	0.5 2177	0.6 2177	0.5 2177	0.5 1075	0.4 2177	0.5 2177	0.6 2173	0.6 1072	0.5 1927	0.6 1071	0.6 1073	0.6 2179	0.6 1072	0.7 1462	0.2 2168	0.5 2154	0.3 1066	0.5 1059	0.5 2162	0.4 1063	0.5 1064	0.5 1067	. ^a 0	. ^a 0
Visits to the villages by ANMS_Nurses_Doctors	Pearson Correlation (2-tailed) N	0.6 2185	1.0 2194	0.6 2189	0.6 2180	0.6 2176	0.6 2176	0.5 1082	0.4 2177	0.4 2178	0.5 2172	0.6 1073	0.5 1073	0.6 1929	0.5 1072	0.5 1074	0.6 2178	0.5 1073	0.7 1462	0.3 2168	0.4 2154	0.3 1067	0.5 1060	0.5 2162	0.3 1064	0.5 1065	0.4 1068	. ^a 0	. ^a 0
Availability of Emergency services like 108_Police	Pearson Correlation (2-tailed) N	0.6 2182	0.6 2189	1.0 2195	0.6 2181	0.6 2180	0.6 2175	0.6 2175	0.4 1086	0.4 2176	0.5 32178	0.5 2171	0.5 1073	0.5 1927	0.5 1072	0.5 1074	0.6 2177	0.5 1073	0.6 1461	0.2 2167	0.4 2153	0.3 1067	0.5 1060	0.5 2161	0.3 1064	0.5 1066	0.5 1069	. ^a 0	. ^a 0
Visits by teachers and government officials	Pearson Correlation (2-tailed) N	0.6 2177	0.6 2180	0.6 2181	1.0 2185	0.6 2174	0.6 2173	0.6 2172	0.4 1080	0.4 2172	0.6 2174	0.6 2167	0.5 1073	0.5 1924	0.5 1072	0.5 1074	0.5 2174	0.5 1073	0.6 1458	0.2 2163	0.5 2149	0.3 1067	0.5 1060	0.5 2156	0.3 1064	0.5 1065	0.5 1068	. ^a 0	. ^a 0
Visits by our friends and relatives	Pearson Correlation (2-tailed)	0.5 0	0.6 0	0.6 0	0.6 0	1.0 0	0.6 0	0.5 0	0.5 0	0.4 0	0.5 0	0.6 0	0.6 0	0.5 0	0.6 0	0.6 0	0.6 0	0.6 0	0.6 0	0.2 0	0.4 0	0.4 0	0.6 0	0.6 0	0.4 0	0.5 0	0.5 0	. ^a	. ^a

	N	2177	2180	2180	2174	2184	2172	2172	1079	2173	2174	2168	1073	1926	1072	1074	2174	1073	1461	2164	2149	1067	1060	2159	1064	1065	1068	0	0
Regularity of children attending schools located nearby	Pearson Correlation Sig. (2-tailed)	0.6	0.6	0.6	0.6	0.6	1.0	0.5	0.5	0.4	0.5	0.6	0.6	0.5	0.5	0.6	0.5	0.6	0.7	0.2	0.4	0.4	0.5	0.5	0.3	0.5	0.5	. ^a	. ^a
	N	2177	2176	2175	2173	2172	2184	2175	1076	2175	2174	2170	1073	1923	1072	1074	2176	1073	1462	2165	2149	1067	1060	2158	1064	1065	1068	0	0
Regularity of children attending colleges located nearby	Pearson Correlation Sig. (2-tailed)	0.5	0.5	0.6	0.6	0.5	0.5	1.0	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.2	0.4	0.3	0.5	0.5	0.3	0.5	0.5	. ^a	. ^a
	N	2177	2176	2175	2172	2172	2175	2184	1075	2175	2175	2169	1072	1922	1071	1073	2176	1072	1464	2164	2148	1066	1060	2158	1063	1065	1067	0	0
Traffic from and to our village	Pearson Correlation Sig. (2-tailed)	0.5	0.4	0.4	0.4	0.5	0.5	0.5	1.0	0.4	0.4	0.5	0.7	0.5	0.6	0.7	0.5	0.7	0.5	0.2	0.3	0.4	0.6	0.5	0.4	0.5	0.5	. ^a	. ^a
	N	1075	1082	1086	1080	1079	1076	1075	1088	1074	1078	1073	1073	1072	1072	1074	1073	1073	1070	1070	1067	1068	1061	1069	1065	1067	1070	0	0
Safety of Travel to and from our village	Pearson Correlation Sig. (2-tailed)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.0	0.4	0.5	0.3	0.4	0.3	0.3	0.5	0.4	0.4	0.1	0.4	0.2	0.3	0.4	0.3	0.4	0.4	. ^a	. ^a
	N	2177	2177	2176	2172	2173	2175	2175	1074	2185	2176	2171	1071	1927	1070	1072	2178	1071	1462	2166	2150	1065	1058	2161	1062	1063	1066	0	0
Economic activity in our village	Pearson Correlation Sig. (2-tailed)	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.4	0.4	1.0	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.2	0.5	0.3	0.4	0.5	0.4	0.4	0.4	. ^a	. ^a
	N	2177	2178	2178	2174	2174	2174	2175	1078	2176	2187	2172	1073	1926	1071	1073	2178	1072	1460	2166	2151	1066	1059	2161	1063	1064	1067	0	0
Access to markets_mandis for agriculture produce	Pearson Correlation Sig. (2-tailed)	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.6	1.0	0.5	0.5	0.6	0.6	0.6	0.5	0.7	0.3	0.5	0.4	0.5	0.6	0.4	0.5	0.5	. ^a	. ^a
	N	2177	2177	2176	2172	2173	2175	2175	1074	2185	2176	2171	1071	1927	1070	1072	2178	1071	1462	2166	2150	1065	1058	2161	1062	1063	1066	0	0

	N	2173	2172	2171	2167	2168	2170	2169	1073	2171	2172	2180	1070	1923	1069	1071	2175	1071	1460	2165	2151	1066	1059	2160	1063	1064	1067	0	0	
Access to markets _mandis for animal husbandary_dairy_fishing_poultry	Pearson Correlation	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.7	0.3	0.5	0.5	1.0	0.6	0.8	0.8	0.5	0.8	0.5	0.2	0.3	0.5	0.7	0.6	0.5	0.7	0.6	. ^a	. ^a	
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	1072	1073	1073	1073	1073	1073	1072	1073	1071	1073	1070	1073	1070	1070	1072	1071	1071	1067	1067	1064	1065	1058	1066	1062	1063	1066	1066	0	0
Price realization of agricultural produce	Pearson Correlation	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	1.0	0.6	0.6	0.6	0.6	0.7	0.3	0.5	0.4	0.5	0.6	0.3	0.4	0.4	. ^a	. ^a	
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	1927	1929	1927	1924	1926	1923	1922	1072	1927	1926	1923	1070	1932	1070	1071	1926	1070	1222	1919	1914	1064	1057	1920	1061	1062	1065	0	0	
Shift in agricultural practices or cropping pattern	Pearson Correlation	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.3	0.5	0.6	0.8	0.6	1.0	0.8	0.5	0.8	0.5	0.3	0.4	0.6	0.8	0.6	0.6	0.6	0.6	. ^a	. ^a	
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	1071	1072	1072	1072	1072	1072	1071	1072	1070	1071	1069	1070	1070	1072	1071	1070	1070	1067	1067	1063	1065	1059	1066	1063	1063	1066	1066	0	0
Access to construction and infrastructure related jobs	Pearson Correlation	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.7	0.3	0.5	0.6	0.8	0.6	0.8	1.0	0.5	0.8	0.5	0.3	0.4	0.6	0.7	0.6	0.6	0.7	0.7	. ^a	. ^a	
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	1073	1074	1074	1074	1074	1074	1073	1074	1072	1073	1071	1072	1071	1074	1072	1072	1068	1068	1066	1066	1059	1067	1063	1064	1067	1067	0	0	
Number of individuals who travel to a nearby town or city daily jobs	Pearson Correlation	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	1.0	0.6	0.7	0.3	0.5	0.4	0.5	0.6	0.4	0.5	0.5	. ^a	. ^a	
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0

	N	2179	2178	2177	2174	2174	2176	2176	1073	2178	2178	2175	1071	1926	1070	1072	2187	1072	1466	2173	2156	1068	1061	2166	1064	1064	1067	0	0
Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	Pearson Correlation	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.7	0.4	0.5	0.5	0.8	0.6	0.8	0.8	0.6	1.0	0.6	0.3	0.4	0.6	0.8	0.6	0.6	0.7	0.7	. ^a	. ^a
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	1072	1073	1073	1073	1073	1073	1072	1073	1071	1072	1071	1071	1070	1070	1072	1072	1072	1068	1068	1065	1066	1059	1067	1063	1064	1067	0	0
Number of motor vehicles owned by our HH	Pearson Correlation	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.5	0.4	0.6	0.7	0.5	0.7	0.5	0.5	0.7	0.6	1.0	0.5	0.6	0.4	0.5	0.6	0.4	0.5	0.5	. ^a	. ^a
	Sig. (2-tailed)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	N	1462	1462	1461	1458	1461	1462	1464	1070	1462	1460	1460	1067	1222	1067	1068	1466	1068	1468	1462	1446	1068	1060	1453	1064	1063	1067	0	0
Maintenance cost for motor vehicle	Pearson Correlation	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.5	1.0	0.4	0.5	0.4	0.3	0.3	0.1	0.1	. ^a	. ^a
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.011	0.035	0	0
	N	2168	2168	2167	2163	2164	2165	2164	1070	2166	2166	2165	1067	1919	1067	1068	2173	1068	1462	2176	2151	1067	1060	2157	1064	1062	1066	0	0
New planned economic activities in the HH	Pearson Correlation	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.3	0.5	0.4	0.4	0.5	0.4	0.6	0.4	1.0	0.4	0.5	0.5	0.3	0.3	0.3	. ^a	. ^a
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	2154	2154	2153	2149	2149	2149	2148	1067	2150	2151	2151	1064	1914	1063	1066	2156	1065	1446	2151	2160	1066	1058	2152	1062	1061	1063	0	0
Information about actual price of agri goods and milk	Pearson Correlation	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.2	0.3	0.4	0.5	0.4	0.6	0.6	0.4	0.6	0.4	0.5	0.4	1.0	0.7	0.4	0.5	0.4	0.4	. ^a	. ^a

	N	807	1154	1167	1156	1122	1156	615	515	843	743	629	357	798
SpGainVillage	Pearson Correlation	.123	.370	.164	1	.245	.152	.151	.233	.318	-.030	.239	.229	.181
	Sig. (2- tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.200	.000	.000	.000
	N	2067	2722	1156	3039	2915	2975	1577	1014	1690	1781	1609	616	1495
SpGainTaluka	Pearson Correlation	.044	.421	.325	.245	1	.336	.447	.199	.425	.073	.308	.437	.265
	Sig. (2- tailed)	.047	.000	.000	.000		.000	.000	.000	.000	.002	.000	.000	.000
	N	2088	2712	1122	2915	3047	3005	1622	1112	1707	1824	1677	713	1511
SpGainDistrict	Pearson Correlation	.105	.206	.435	.152	.336	1	.321	.302	.158	.005	.213	.758	.218
	Sig. (2- tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.845	.000	.000	.000
	N	2129	2771	1156	2975	3005	3106	1615	1116	1730	1823	1674	713	1540
SpGainStateHighway	Pearson Correlation	-.056	.352	.336	.151	.447	.321	1	.405	.490	.113	.186	.384	.519
	Sig. (2- tailed)	.044	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	1297	1430	615	1577	1622	1615	1625	875	994	1223	1235	568	914
SpGainTheatreorMall	Pearson Correlation	-.074	.389	.468	.233	.199	.302	.405	1	.417	.080	.130	.534	.521
	Sig. (2- tailed)	.022	.000	.000	.000	.000	.000	.000		.000	.020	.000	.000	.000
	N	970	1053	515	1014	1112	1116	875	1116	978	846	1004	569	859
SpGainHealthCentre	Pearson Correlation	-.131	.714	.613	.318	.425	.158	.490	.417	1	.378	.302	.688	.767
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	1451	1739	843	1690	1707	1730	994	978	1792	1284	1195	581	1399
SpGainSchool	Pearson Correlation	-.166	.325	.375	-.030	.073	.005	.113	.080	.378	1	.089	-.054	.497
	Sig. (2- tailed)	.000	.000	.000	.200	.002	.845	.000	.020	.000		.001	.207	.000
	N	1525	1715	743	1781	1824	1823	1223	846	1284	1885	1293	543	1138

SpGainCollege	Pearson Correlation	.047	.360	.732	.239	.308	.213	.186	.130	.302	.089	1	.232	.218
	Sig. (2- tailed)	.074	.000	.000	.000	.000	.000	.000	.000	.000	.001		.000	.000
	N	1457	1559	629	1609	1677	1674	1235	1004	1195	1293	1709	661	1065
SpGainVocational	Pearson Correlation	-.166	.680	.780	.229	.437	.758	.384	.534	.688	-.054	.232	1	.740
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.207	.000		.000
	N	636	682	357	616	713	713	568	569	581	543	661	713	588
SpGainMandi	Pearson Correlation	-.162	.697	.637	.181	.265	.218	.519	.521	.767	.497	.218	.740	1
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	1283	1536	798	1495	1511	1540	914	859	1399	1138	1065	588	1596

Appendix 15: Regression of various access variables as dependents and speed Gain variables and PMGSYRoadPresent variable (both excluding and including) as independent variables (based on HH dataset)

Table a: Access to health facilities regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Access to health facilities
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.089 ^a	.008	.003	.693

a. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.265	4	.816	1.702	.147 ^b
	Residual	409.132	853	.480		
	Total	412.397	857			

a. Dependent Variable: Access to health facilities
b. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.245	.036		117.886	.000
	SpGainTaluka	.020	.041	.022	.485	.627
	SpGainDistrict	.082	.045	.065	1.828	.068
	SpGainStateHighway	.049	.044	.047	1.125	.261
	SpGainHealthCentre	-.037	.039	-.042	-.939	.348

a. Dependent Variable: Access to health facilities

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Access to health facilities
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239 ^a	.057	.052	.676

a. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.614	5	4.723	10.350	.000 ^b
	Residual	388.784	852	.456		
	Total	412.397	857			

a. Dependent Variable: Access to health facilities

b. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.676	.092		39.902	.000
	PMGSYRoadPresent	.628	.094	.224	6.678	.000
	SpGainTaluka	.004	.040	.004	.093	.926
	SpGainDistrict	.068	.044	.054	1.546	.122
	SpGainStateHighway	.045	.043	.044	1.062	.289
	SpGainHealthCentre	-.039	.038	-.045	-1.023	.307

a. Dependent Variable: Access to health facilities

Table b: Visits to the villages by ANMS_Nurses_Doctors regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.157 ^a	.025	.020	.716

a. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.046	4	2.761	5.393	.000 ^b
	Residual	434.698	849	.512		
	Total	445.744	853			

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

b. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.973	.037		106.522	.000
	SpGainTaluka	.111	.042	.117	2.640	.008
	SpGainDistrict	.040	.047	.031	.865	.387
	SpGainStateHighway	.031	.045	.029	.686	.493
	SpGainHealthCentre	.017	.040	.019	.418	.676

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.236 ^a	.055	.050	.705

a. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.734	5	4.947	9.964	.000 ^b
	Residual	421.010	848	.496		
	Total	445.744	853			

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

b. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.507	.096		36.485	.000
	PMGSYRoadPresent	.515	.098	.177	5.251	.000
	SpGainTaluka	.098	.042	.103	2.358	.019
	SpGainDistrict	.029	.046	.022	.620	.535
	SpGainStateHighway	.028	.045	.026	.624	.533
	SpGainHealthCentre	.015	.040	.017	.376	.707

a. Dependent Variable: Visits to the villages by ANMS_Nurses_Doctors

Table c: Availability of Emergency services like 108_Police regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Availability of Emergency services like 108_Police

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.089 ^a	.008	.003	.714

a. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.487	4	.872	1.712	.145 ^b
	Residual	432.775	850	.509		
	Total	436.262	854			

a. Dependent Variable: Availability of Emergency services like 108_Police

b. Predictors: (Constant), SpGainHealthCentre, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.140	.037		111.400	.000
	SpGainTaluka	.078	.042	.083	1.851	.064
	SpGainDistrict	.007	.047	.005	.141	.888
	SpGainStateHighway	-.030	.045	-.028	-.660	.509
	SpGainHealthCentre	.023	.040	.026	.565	.572

a. Dependent Variable: Availability of Emergency services like 108_Police

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Availability of Emergency services like 108_Police

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.230 ^a	.053	.047	.698

a. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.996	5	4.599	9.449	.000 ^b
	Residual	413.266	849	.487		
	Total	436.262	854			

a. Dependent Variable: Availability of Emergency services like 108_Police

b. Predictors: (Constant), SpGainHealthCentre, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.584	.095		37.657	.000
	PMGSYRoadPresent	.615	.097	.213	6.331	.000
	SpGainTaluka	.062	.041	.066	1.507	.132
	SpGainDistrict	-.008	.046	-.006	-.166	.868
	SpGainStateHighway	-.034	.044	-.032	-.762	.446
	SpGainHealthCentre	.020	.039	.023	.519	.604

a. Dependent Variable: Availability of Emergency services like 108_Police

Table d: Visits by teachers and government officials regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits by teachers and government officials

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.056 ^a	.003	.001	.771

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.381	3	.794	1.335	.261 ^b
	Residual	760.837	1280	.594		
	Total	763.217	1283			

a. Dependent Variable: Visits by teachers and government officials

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.088	.030		138.164	.000
	SpGainTaluka	.044	.034	.044	1.307	.192
	SpGainDistrict	.039	.041	.031	.949	.343
	SpGainStateHighway	-.046	.033	-.046	-1.382	.167

a. Dependent Variable: Visits by teachers and government officials

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits by teachers and government officials

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.101 ^a	.010	.007	.769

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.750	4	1.937	3.280	.011 ^b
	Residual	755.468	1279	.591		
	Total	763.217	1283			

a. Dependent Variable: Visits by teachers and government officials

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.879	.075		51.461	.000
	PMGSYRoadPresent	.235	.078	.085	3.015	.003
	SpGainTaluka	.037	.034	.037	1.104	.270
	SpGainDistrict	.031	.041	.025	.767	.443
	SpGainStateHighway	-.045	.033	-.045	-1.357	.175

a. Dependent Variable: Visits by teachers and government officials

Table e: Visits by our friends and relatives regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits by our friends and relatives

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	.003	.777

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.183	3	1.394	2.307	.075 ^b
	Residual	772.541	1278	.604		
	Total	776.725	1281			

a. Dependent Variable: Visits by our friends and relatives

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		

1	(Constant)	4.071	.030		136.224	.000
	SpGainTaluka	.046	.034	.046	1.358	.175
	SpGainDistrict	.065	.041	.052	1.594	.111
	SpGainStateHighway	-.063	.034	-.062	-1.877	.061

a. Dependent Variable: Visits by our friends and relatives

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Visits by our friends and relatives

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.111 ^a	.012	.009	.775

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.513	4	2.378	3.959	.003 ^b
	Residual	767.211	1277	.601		
	Total	776.725	1281			

a. Dependent Variable: Visits by our friends and relatives

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.863	.076		50.805	.000
	PMGSYRoadPresent	.234	.079	.083	2.979	.003
	SpGainTaluka	.039	.034	.039	1.155	.248
	SpGainDistrict	.058	.041	.046	1.415	.157
	SpGainStateHighway	-.062	.034	-.061	-1.851	.064

a. Dependent Variable: Visits by our friends and relatives

Table f: Regularity of children attending colleges located nearby regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainSchool, SpGainTaluka, SpGainStateHighway, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Regularity of children attending schools located nearby

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.122 ^a	.015	.011	.744

a. Predictors: (Constant), SpGainSchool, SpGainTaluka, SpGainStateHighway, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.504	4	2.126	3.838	.004 ^b
	Residual	566.168	1022	.554		
	Total	574.672	1026			

a. Dependent Variable: Regularity of children attending schools located nearby

b. Predictors: (Constant), SpGainSchool, SpGainTaluka, SpGainStateHighway, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.164	.035		119.680	.000
	SpGainTaluka	.069	.037	.070	1.876	.061
	SpGainDistrict	.073	.042	.063	1.723	.085
	SpGainStateHighway	-.082	.034	-.085	-2.390	.017
	SpGainSchool	-.178	.083	-.068	-2.150	.032

a. Dependent Variable: Regularity of children attending schools located nearby

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainSchool, SpGainTaluka, PMGSYRoadPresent, SpGainStateHighway, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Regularity of children attending schools located nearby

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.156 ^a	.024	.020	.741

a. Predictors: (Constant), SpGainSchool, SpGainTaluka, PMGSYRoadPresent, SpGainStateHighway, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.990	5	2.798	5.095	.000 ^b
	Residual	560.682	1021	.549		
	Total	574.672	1026			

a. Dependent Variable: Regularity of children attending schools located nearby

b. Predictors: (Constant), SpGainSchool, SpGainTaluka, PMGSYRoadPresent, SpGainStateHighway, SpGainDistrict

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.932	.081		48.433	.000
	PMGSYRoadPresent	.260	.082	.099	3.161	.002
	SpGainTaluka	.060	.037	.061	1.637	.102
	SpGainDistrict	.064	.042	.055	1.505	.133
	SpGainStateHighway	-.079	.034	-.082	-2.306	.021
	SpGainSchool	-.168	.083	-.064	-2.031	.043

a. Dependent Variable: Regularity of children attending schools located nearby

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainCollege, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Regularity of children attending colleges located nearby

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.161 ^a	.026	.022	.814

a. Predictors: (Constant), SpGainCollege, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.681	4	4.670	7.046	.000 ^b
	Residual	701.306	1058	.663		
	Total	719.987	1062			

a. Dependent Variable: Regularity of children attending colleges located nearby

b. Predictors: (Constant), SpGainCollege, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.993	.035		115.475	.000
	SpGainTaluka	.072	.041	.070	1.759	.079
	SpGainDistrict	.012	.045	.010	.272	.786
	SpGainStateHighway	-.029	.039	-.027	-.740	.460
	SpGainCollege	.075	.019	.130	4.057	.000

a. Dependent Variable: Regularity of children attending colleges located nearby

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainCollege, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Regularity of children attending colleges located nearby

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.195 ^a	.038	.034	.809

a. Predictors: (Constant), SpGainCollege, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.454	5	5.491	8.380	.000 ^b
	Residual	692.533	1057	.655		
	Total	719.987	1062			

a. Dependent Variable: Regularity of children attending colleges located nearby

b. Predictors: (Constant), SpGainCollege, PMGSYRoadPresent, SpGainDistrict, SpGainStateHighway, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.723	.081		45.799	.000
	PMGSYRoadPresent	.309	.084	.111	3.659	.000
	SpGainTaluka	.062	.041	.061	1.518	.129
	SpGainDistrict	.003	.044	.003	.076	.939
	SpGainStateHighway	-.026	.039	-.024	-.667	.505
	SpGainCollege	.072	.018	.125	3.917	.000

a. Dependent Variable: Regularity of children attending colleges located nearby

Table g: Traffic from and to our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Traffic from and to our village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.101 ^a	.010	.003	.738

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.382	3	.794	1.458	.225 ^b
	Residual	232.556	427	.545		
	Total	234.937	430			

a. Dependent Variable: Traffic from and to our village

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.800	.054		70.455	.000
	SpGainTaluka	-.116	.061	-.107	-1.918	.056
	SpGainDistrict	.006	.081	.004	.076	.939
	SpGainStateHighway	.012	.049	.013	.240	.810

a. Dependent Variable: Traffic from and to our village

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Traffic from and to our village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.106 ^a	.011	.002	.738

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.631	4	.658	1.206	.307 ^b
	Residual	232.306	426	.545		
	Total	234.937	430			

a. Dependent Variable: Traffic from and to our village

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.758	.082		45.691	.000
	PMGSYRoadPresent	.063	.093	.034	.677	.499
	SpGainTaluka	-.121	.061	-.111	-1.975	.049
	SpGainDistrict	-.001	.082	-.001	-.011	.991
	SpGainStateHighway	.008	.050	.009	.167	.867

a. Dependent Variable: Traffic from and to our village

Table h: Safety of Travel to and from our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

- a. Dependent Variable: Safety of Travel to and from our village
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.249 ^a	.062	.060	.906

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.220	3	23.073	28.120	.000 ^b
	Residual	1047.816	1277	.821		
	Total	1117.037	1280			

- a. Dependent Variable: Safety of Travel to and from our village
 b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.071	.035		117.045	.000
	SpGainTaluka	-.151	.041	-.124	-3.717	.000
	SpGainDistrict	.122	.048	.081	2.545	.011
	SpGainStateHighway	-.238	.039	-.196	-6.101	.000

a. Dependent Variable: Safety of Travel to and from our village

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

- a. Dependent Variable: Safety of Travel to and from our village
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271 ^a	.074	.071	.901

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.125	4	20.531	25.314	.000 ^b
	Residual	1034.912	1276	.811		
	Total	1117.037	1280			

- a. Dependent Variable: Safety of Travel to and from our village
 b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.747	.088		42.427	.000
	PMGSYRoadPresent	.364	.091	.108	3.989	.000
	SpGainTaluka	-.161	.040	-.132	-3.999	.000
	SpGainDistrict	.110	.048	.073	2.315	.021
	SpGainStateHighway	-.237	.039	-.195	-6.095	.000

a. Dependent Variable: Safety of Travel to and from our village

Table i: Economic activity in our village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Economic activity in our village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.046 ^a	.002	.000	.788

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.705	3	.568	.916	.432 ^b
	Residual	793.069	1278	.621		
	Total	794.775	1281			

a. Dependent Variable: Economic activity in our village

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.008	.030		132.553	.000
	SpGainTaluka	-.001	.035	-.001	-.033	.974
	SpGainDistrict	.064	.042	.050	1.534	.125
	SpGainStateHighway	-.031	.034	-.031	-.927	.354

a. Dependent Variable: Economic activity in our village

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Economic activity in our village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.123 ^a	.015	.012	.783

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	12.000	4	3.000	4.894	.001 ^b
	Residual	782.775	1277	.613		
	Total	794.775	1281			

a. Dependent Variable: Economic activity in our village

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.717	.077		48.209	.000
	PMGSYRoadPresent	.327	.080	.115	4.098	.000
	SpGainTaluka	-.011	.034	-.011	-.311	.756
	SpGainDistrict	.054	.041	.042	1.300	.194
	SpGainStateHighway	-.030	.034	-.030	-.900	.368

a. Dependent Variable: Economic activity in our village

Table j: Access to markets_mandis for agriculture produce regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway ^b	.	Enter

a. Dependent Variable: Access to markets_mandis for agriculture produce

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.163 ^a	.026	.020	.825

a. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	13.158	5	2.632	3.866	.002 ^b
	Residual	484.614	712	.681		
	Total	497.772	717			

a. Dependent Variable: Access to markets_mandis for agriculture produce

b. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.914	.049		79.811	.000
	SpGainTaluka	-.035	.074	-.023	-.469	.639
	SpGainDistrict	.297	.094	.142	3.144	.002
	SpGainStateHighway	-.042	.075	-.028	-.554	.579
	SpGainMandi	.023	.069	.016	.329	.742
	SpGainMarket	.091	.068	.068	1.334	.183

a. Dependent Variable: Access to markets_mandis for agriculture produce

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway ^b	.	Enter

a. Dependent Variable: Access to markets_mandis for agriculture produce

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.216 ^a	.047	.039	.817

a. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.259	6	3.877	5.809	.000 ^b
	Residual	474.512	711	.667		
	Total	497.772	717			

a. Dependent Variable: Access to markets_mandis for agriculture produce

b. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.515	.114		30.944	.000
	PMGSYRoadPresent	.450	.116	.144	3.891	.000
	SpGainTaluka	-.051	.073	-.034	-.701	.484
	SpGainDistrict	.275	.094	.132	2.940	.003
	SpGainStateHighway	-.041	.075	-.028	-.543	.587
	SpGainMandi	.014	.068	.010	.203	.839
	SpGainMarket	.098	.068	.073	1.442	.150

a. Dependent Variable: Access to markets_mandis for agriculture produce

Table k: Access to markets _mandis for animal husbandary _dairy _fishing _poultry regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi ^b	.	Enter

- a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.314 ^a	.098	.082	.693

- a. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.917	5	2.983	6.213	.000 ^b
	Residual	136.856	285	.480		
	Total	151.773	290			

- a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry
 b. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.559	.078		45.425	.000
	SpGainTaluka	-.147	.075	-.134	-1.954	.052
	SpGainDistrict	.326	.098	.221	3.320	.001
	SpGainStateHighway	.080	.098	.070	.821	.412
	SpGainMandi	.245	.107	.203	2.298	.022
	SpGainMarket	-.077	.086	-.069	-.894	.372

- a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi ^b	.	Enter

- a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.364 ^a	.132	.114	.681

a. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.067	6	3.344	7.212	.000 ^b
	Residual	131.706	284	.464		
	Total	151.773	290			

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

b. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka, SpGainStateHighway, SpGainMandi

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.335	.102		32.644	.000
	PMGSYRoadPresent	.380	.114	.200	3.332	.001
	SpGainTaluka	-.161	.074	-.146	-2.166	.031
	SpGainDistrict	.272	.098	.184	2.781	.006
	SpGainStateHighway	.094	.096	.082	.981	.327
	SpGainMandi	.190	.106	.157	1.787	.075
	SpGainMarket	-.096	.085	-.086	-1.130	.259

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

Table 1: Price realization of agricultural produce regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway ^b	.	Enter

a. Dependent Variable: Price realization of agricultural produce

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.137 ^a	.019	.012	.794

a. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.220	5	1.644	2.605	.024 ^b
	Residual	430.383	682	.631		
	Total	438.603	687			

a. Dependent Variable: Price realization of agricultural produce

b. Predictors: (Constant), SpGainMarket, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.992	.048		82.876	.000
	SpGainTaluka	-.034	.076	-.023	-.450	.653
	SpGainDistrict	.298	.093	.150	3.200	.001
	SpGainStateHighway	.006	.076	.004	.077	.939
	SpGainMandi	-.053	.069	-.040	-.776	.438
	SpGainMarket	.018	.076	.013	.243	.808

a. Dependent Variable: Price realization of agricultural produce

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway ^b		Enter

a. Dependent Variable: Price realization of agricultural produce

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.231 ^a	.054	.045	.781

a. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.499	6	3.916	6.425	.000 ^b
	Residual	415.104	681	.610		
	Total	438.603	687			

a. Dependent Variable: Price realization of agricultural produce

b. Predictors: (Constant), SpGainMarket, PMGSYRoadPresent, SpGainDistrict, SpGainMandi, SpGainTaluka, SpGainStateHighway

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.499	.109		32.011	.000
	PMGSYRoadPresent	.560	.112	.189	5.007	.000
	SpGainTaluka	-.053	.075	-.035	-.716	.474
	SpGainDistrict	.266	.092	.134	2.895	.004
	SpGainStateHighway	.009	.075	.007	.124	.901
	SpGainMandi	-.065	.068	-.048	-.962	.336
	SpGainMarket	.024	.074	.017	.317	.751

a. Dependent Variable: Price realization of agricultural produce

Table m: Shift in agricultural practices or cropping pattern regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.205 ^a	.042	.035	.749

- a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.448	3	3.483	6.200	.000 ^b
	Residual	239.294	426	.562		
	Total	249.742	429			

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.685	.055		67.233	.000
	SpGainTaluka	-.143	.062	-.127	-2.318	.021
	SpGainDistrict	.312	.083	.213	3.763	.000
	SpGainStateHighway	.035	.050	.038	.700	.484

- a. Dependent Variable: Shift in agricultural practices or cropping pattern

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.257 ^a	.066	.057	.741

- a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.439	4	4.110	7.487	.000 ^b
	Residual	233.302	425	.549		
	Total	249.742	429			

- a. Dependent Variable: Shift in agricultural practices or cropping pattern
b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.479	.083		42.148	.000
	PMGSYRoadPresent	.309	.093	.162	3.304	.001
	SpGainTaluka	-.164	.061	-.145	-2.663	.008
	SpGainDistrict	.277	.083	.189	3.355	.001
	SpGainStateHighway	.018	.050	.019	.356	.722

a. Dependent Variable: Shift in agricultural practices or cropping pattern

Table n: Access to construction and infrastructure related jobs regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Access to construction and infrastructure related jobs

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.146 ^a	.021	.014	.711

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.687	3	1.562	3.092	.027 ^b
	Residual	215.257	426	.505		
	Total	219.944	429			

a. Dependent Variable: Access to construction and infrastructure related jobs

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.777	.052		72.691	.000
	SpGainTaluka	-.123	.058	-.116	-2.096	.037
	SpGainDistrict	.192	.078	.141	2.449	.015
	SpGainStateHighway	.035	.048	.041	.738	.461

a. Dependent Variable: Access to construction and infrastructure related jobs

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Access to construction and infrastructure related jobs

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.196 ^a	.038	.029	.705

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.435	4	2.109	4.237	.002 ^b
	Residual	211.509	425	.498		
	Total	219.944	429			

a. Dependent Variable: Access to construction and infrastructure related jobs

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.614	.079		45.991	.000
	PMGSYRoadPresent	.244	.089	.137	2.744	.006
	SpGainTaluka	-.138	.058	-.131	-2.374	.018
	SpGainDistrict	.165	.079	.121	2.100	.036
	SpGainStateHighway	.021	.048	.025	.449	.654

a. Dependent Variable: Access to construction and infrastructure related jobs

Table p: Number of individuals who travel to a nearby town or city daily jobs regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	.003	.748

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.814	3	1.271	2.272	.079 ^b
	Residual	716.775	1281	.560		
	Total	720.588	1284			

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	4.044	.029		140.917	.000
	SpGainTaluka	.010	.033	.010	.304	.761
	SpGainDistrict	.051	.039	.042	1.306	.192
	SpGainStateHighway	-.080	.032	-.082	-2.480	.013

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b		Enter

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.157 ^a	.025	.021	.741

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.658	4	4.414	8.038	.000 ^b
	Residual	702.931	1280	.549		
	Total	720.588	1284			

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	3.708	.073		51.026	.000
	PMGSYRoadPresent	.377	.075	.140	5.021	.000
	SpGainTaluka	-.001	.033	-.001	-.037	.971
	SpGainDistrict	.039	.039	.033	1.009	.313
	SpGainStateHighway	-.078	.032	-.080	-2.449	.014

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily jobs

Table q: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter
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- a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.174 ^a	.030	.024	.738

- a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.289	3	2.430	4.460	.004 ^b
	Residual	232.605	427	.545		
	Total	239.893	430			

- a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals
b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.779	.054		70.054	.000
	SpGainTaluka	-.152	.061	-.138	-2.506	.013
	SpGainDistrict	.246	.081	.172	3.021	.003
	SpGainStateHighway	.037	.049	.041	.743	.458

- a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

- a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.213 ^a	.045	.036	.733

- a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.905	4	2.726	5.072	.001 ^b
	Residual	228.989	426	.538		
	Total	239.893	430			

- a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals
b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.619	.082		44.318	.000
	PMGSYRoadPresent	.240	.093	.129	2.594	.010
	SpGainTaluka	-.168	.061	-.152	-2.769	.006
	SpGainDistrict	.219	.082	.153	2.686	.008
	SpGainStateHighway	.023	.049	.026	.470	.639

a. Dependent Variable: Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals

Table r: Number of HHs that own a motor vehicle regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Number of motor vehicles owned by our HH

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.097 ^a	.009	.005	.648

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.768	3	.923	2.200	.087 ^b
	Residual	291.820	696	.419		
	Total	294.587	699			

a. Dependent Variable: Number of motor vehicles owned by our HH

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.919	.035		113.283	.000
	SpGainTaluka	.043	.031	.061	1.364	.173
	SpGainDistrict	.025	.037	.031	.679	.497
	SpGainStateHighway	.020	.034	.026	.586	.558

a. Dependent Variable: Number of motor vehicles owned by our HH

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Number of motor vehicles owned by our HH

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.212 ^a	.045	.039	.636

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.199	4	3.300	8.150	.000 ^b
	Residual	281.388	695	.405		
	Total	294.587	699			

a. Dependent Variable: Number of motor vehicles owned by our HH

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.637	.065		55.849	.000
	PMGSYRoadPresent	.355	.070	.192	5.076	.000
	SpGainTaluka	.024	.031	.035	.775	.438
	SpGainDistrict	.013	.037	.015	.342	.732
	SpGainStateHighway	.016	.033	.021	.480	.631

a. Dependent Variable: Number of motor vehicles owned by our HH

Table s: Maintenance cost for motor vehicle regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Maintenance cost for motor vehicle

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.122 ^a	.015	.013	1.215

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.627	3	9.542	6.468	.000 ^b
	Residual	1885.385	1278	1.475		
	Total	1914.012	1281			

a. Dependent Variable: Maintenance cost for motor vehicle

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.348	.047		71.775	.000
	SpGainTaluka	.113	.053	.071	2.116	.035
	SpGainDistrict	.022	.064	.011	.338	.736
	SpGainStateHighway	.100	.052	.063	1.922	.055

a. Dependent Variable: Maintenance cost for motor vehicle

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Maintenance cost for motor vehicle

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.166 ^a	.028	.024	1.207

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.701	4	13.175	9.039	.000 ^b
	Residual	1861.311	1277	1.458		
	Total	1914.012	1281			

a. Dependent Variable: Maintenance cost for motor vehicle

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.905	.118		24.537	.000
	PMGSYRoadPresent	.497	.122	.113	4.064	.000
	SpGainTaluka	.098	.053	.062	1.848	.065
	SpGainDistrict	.006	.064	.003	.090	.928
	SpGainStateHighway	.102	.052	.064	1.974	.049

a. Dependent Variable: Maintenance cost for motor vehicle

Table t: New planned economic activities in the HH regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: New planned economic activities in the HH

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.067 ^a	.004	.002	.889

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.487	3	1.496	1.893	.129 ^b
	Residual	1006.442	1274	.790		
	Total	1010.930	1277			

a. Dependent Variable: New planned economic activities in the HH

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.812	.034		111.680	.000
	SpGainTaluka	-.015	.039	-.013	-.387	.699
	SpGainDistrict	.094	.047	.065	2.008	.045
	SpGainStateHighway	.016	.038	.014	.428	.669

a. Dependent Variable: New planned economic activities in the HH

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: New planned economic activities in the HH

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142 ^a	.020	.017	.882

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.379	4	5.095	6.548	.000 ^b
	Residual	990.550	1273	.778		
	Total	1010.930	1277			

a. Dependent Variable: New planned economic activities in the HH

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		

1	(Constant)	3.452	.087		39.907	.000
	PMGSYRoadPresent	.404	.089	.126	4.519	.000
	SpGainTaluka	-.027	.039	-.024	-.697	.486
	SpGainDistrict	.081	.047	.057	1.744	.081
	SpGainStateHighway	.018	.038	.016	.480	.631

a. Dependent Variable: New planned economic activities in the HH

Table u: Information about actual price of agri goods and milk regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Information about actual price of agri goods and milk
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.246 ^a	.060	.054	.970

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.659	3	8.553	9.090	.000 ^b
	Residual	398.946	424	.941		
	Total	424.605	427			

a. Dependent Variable: Information about actual price of agri goods and milk
b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.211	.071		45.154	.000
	SpGainTaluka	.015	.080	.010	.187	.852
	SpGainDistrict	.396	.106	.210	3.739	.000
	SpGainStateHighway	.069	.065	.057	1.065	.287

a. Dependent Variable: Information about actual price of agri goods and milk

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Information about actual price of agri goods and milk
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296 ^a	.087	.079	.957

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.104	4	9.276	10.126	.000 ^b
	Residual	387.501	423	.916		
	Total	424.605	427			

a. Dependent Variable: Information about actual price of agri goods and milk

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.927	.107		27.453	.000
	PMGSYRoadPresent	.427	.121	.172	3.535	.000
	SpGainTaluka	-.013	.079	-.009	-.161	.872
	SpGainDistrict	.347	.105	.184	3.294	.001
	SpGainStateHighway	.045	.064	.037	.699	.485

a. Dependent Variable: Information about actual price of agri goods and milk

Table v: The cases of HHs which used to migrate temporarily regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: The cases of HHs which used to migrate temporarily

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229 ^a	.052	.046	.722

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.067	3	4.022	7.726	.000 ^b
	Residual	218.150	419	.521		
	Total	230.217	422			

a. Dependent Variable: The cases of HHs which used to migrate temporarily

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.523	.053		66.381	.000
	SpGainTaluka	-.138	.060	-.126	-2.308	.021
	SpGainDistrict	.320	.079	.228	4.045	.000
	SpGainStateHighway	.056	.049	.063	1.155	.249

a. Dependent Variable: The cases of HHs which used to migrate temporarily

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: The cases of HHs which used to migrate temporarily

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271 ^a	.074	.065	.714

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.947	4	4.237	8.304	.000 ^b
	Residual	213.270	418	.510		
	Total	230.217	422			

a. Dependent Variable: The cases of HHs which used to migrate temporarily

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.338	.080		41.916	.000
	PMGSYRoadPresent	.279	.090	.152	3.093	.002
	SpGainTaluka	-.156	.060	-.143	-2.621	.009
	SpGainDistrict	.288	.079	.205	3.643	.000
	SpGainStateHighway	.040	.048	.045	.835	.404

a. Dependent Variable: The cases of HHs which used to migrate temporarily

Table w: Instances of landslides_soil disposal_soil erosion regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.057 ^a	.003	.001	.773

a. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.517	3	.839	1.404	.240 ^b
	Residual	763.914	1278	.598		
	Total	766.431	1281			

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

b. Predictors: (Constant), SpGainStateHighway, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.020	.030		135.212	.000
	SpGainTaluka	-.011	.034	-.011	-.310	.757
	SpGainDistrict	.078	.041	.062	1.911	.056
	SpGainStateHighway	-.039	.033	-.039	-1.185	.236

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka ^b	.	Enter

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142 ^a	.020	.017	.767

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.419	4	3.855	6.554	.000 ^b
	Residual	751.013	1277	.588		
	Total	766.431	1281			

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainDistrict, SpGainTaluka

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.696	.075		49.143	.000

PMGSYRoadPresent	.364	.078	.131	4.684	.000
SpGainTaluka	-.021	.034	-.021	-.627	.531
SpGainDistrict	.066	.040	.053	1.637	.102
SpGainStateHighway	-.038	.033	-.038	-1.154	.249

a. Dependent Variable: Instances of landslides_soil disposal_soil erosion

Table x: Impact on environment through pollution of vehicular movement regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Impact on environment through pollution of vehicular movement

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.252 ^a	.064	.057	.860

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.124	3	7.041	9.514	.000 ^b
	Residual	310.838	420	.740		
	Total	331.962	423			

a. Dependent Variable: Impact on environment through pollution of vehicular movement

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.282	.063		51.838	.000
	SpGainTaluka	-.103	.071	-.079	-1.452	.147
	SpGainDistrict	.395	.095	.233	4.180	.000
	SpGainStateHighway	.092	.058	.085	1.584	.114

a. Dependent Variable: Impact on environment through pollution of vehicular movement

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Impact on environment through pollution of vehicular movement

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.279 ^a	.078	.069	.855

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.851	4	6.463	8.846	.000 ^b
	Residual	306.112	419	.731		
	Total	331.962	423			

a. Dependent Variable: Impact on environment through pollution of vehicular movement

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.100	.095		32.524	.000
	PMGSYRoadPresent	.275	.108	.125	2.543	.011
	SpGainTaluka	-.121	.071	-.092	-1.706	.089
	SpGainDistrict	.364	.095	.215	3.839	.000
	SpGainStateHighway	.076	.058	.071	1.314	.190

a. Dependent Variable: Impact on environment through pollution of vehicular movement

Table y: Safe to use the after PMGSY road has been built regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Safe to use the after PMGSY road has been built

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.178 ^a	.032	.025	.714

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.000	3	2.333	4.574	.004 ^b
	Residual	214.750	421	.510		
	Total	221.751	424			

a. Dependent Variable: Safe to use the after PMGSY road has been built

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.621	.052		68.984	.000
	SpGainTaluka	-.164	.059	-.154	-2.782	.006
	SpGainDistrict	.198	.079	.143	2.499	.013
	SpGainStateHighway	.073	.048	.083	1.516	.130

a. Dependent Variable: Safe to use the after PMGSY road has been built

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Safe to use the after PMGSY road has been built

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.184 ^a	.034	.025	.714

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.477	4	1.869	3.664	.006 ^b
	Residual	214.274	420	.510		
	Total	221.751	424			

a. Dependent Variable: Safe to use the after PMGSY road has been built

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.563	.080		44.741	.000
	PMGSYRoadPresent	.087	.090	.049	.967	.334
	SpGainTaluka	-.170	.059	-.160	-2.865	.004
	SpGainDistrict	.189	.080	.136	2.357	.019
	SpGainStateHighway	.068	.048	.077	1.404	.161

a. Dependent Variable: Safe to use the after PMGSY road has been built

Table z: Law and order situation_crime rate in your and neighbouring village regressed on relevant Speed Gain variables and PMGSYRoadPresent variable (both excluding and including)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.217 ^a	.047	.040	.714

a. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.593	3	3.531	6.934	.000 ^b
	Residual	214.884	422	.509		
	Total	225.477	425			

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

b. Predictors: (Constant), SpGainStateHighway, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.614	.052		68.888	.000
	SpGainTaluka	-.204	.059	-.190	-3.479	.001
	SpGainDistrict	.256	.079	.184	3.243	.001
	SpGainStateHighway	.076	.048	.086	1.580	.115

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict ^b	.	Enter

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.221 ^a	.049	.040	.714

a. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.042	4	2.760	5.420	.000 ^b
	Residual	214.435	421	.509		
	Total	225.477	425			

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

b. Predictors: (Constant), SpGainStateHighway, PMGSYRoadPresent, SpGainTaluka, SpGainDistrict

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	3.557	.080		44.715	.000
	PMGSYRoadPresent	.085	.090	.047	.939	.348
	SpGainTaluka	-.210	.059	-.196	-3.555	.000
	SpGainDistrict	.247	.080	.177	3.094	.002
	SpGainStateHighway	.071	.048	.080	1.471	.142

a. Dependent Variable: Law and order situation_crime rate in your and neighbouring village

Appendix 16: Regression of various access variables as dependents and Time Saved variables and PMGSYRoadPresent variable (both excluding and including) as independent variables (based on HH dataset)

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_01

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277 ^a	.077	.073	.77206

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.863	4	13.966	23.429	.000 ^b
	Residual	674.162	1131	.596		
	Total	730.025	1135			

a. Dependent Variable: RPO28_01

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.353	.036		66.111	.000
	ATimeSavedTalukaPC	.350	.149	.095	2.339	.020
	ATimeSavedDistrictPC	.446	.167	.102	2.670	.008
	ATimeSavedStateHighwayPC	.285	.163	.080	1.747	.081
	ATimeSavedHealthCentrePC	.174	.148	.050	1.173	.241

a. Dependent Variable: RPO28_01

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_01
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.395 ^a	.156	.153	.73823

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.189	5	22.838	41.905	.000 ^b
	Residual	615.836	1130	.545		
	Total	730.025	1135			

a. Dependent Variable: RPO28_01

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.081	.043		48.424	.000
	PMGSYRoadPresent	.728	.070	.398	10.345	.000
	ATimeSavedTalukaPC	.283	.143	.077	1.977	.048
	ATimeSavedDistrictPC	.002	.165	.000	.012	.990
	ATimeSavedStateHighwayPC	-.115	.161	-.032	-.715	.475
	ATimeSavedHealthCentrePC	-.154	.145	-.045	-1.059	.290

a. Dependent Variable: RPO28_01

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b		Enter

a. Dependent Variable: RPO28_02
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.240 ^a	.057	.054	.85432

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.065	4	12.516	17.149	.000 ^b
	Residual	822.546	1127	.730		
	Total	872.610	1131			

a. Dependent Variable: RPO28_02

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.277	.039		57.737	.000
	ATimeSavedTalukaPC	.371	.166	.092	2.239	.025
	ATimeSavedDistrictPC	.446	.185	.093	2.407	.016
	ATimeSavedStateHighwayPC	.134	.181	.034	.743	.458
	ATimeSavedHealthCentrePC	.242	.165	.064	1.469	.142

a. Dependent Variable: RPO28_02

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_02

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.329 ^a	.108	.104	.83142

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.250	5	18.850	27.269	.000 ^b
	Residual	778.360	1126	.691		
	Total	872.610	1131			

a. Dependent Variable: RPO28_02

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.041	.048		42.156	.000
	PMGSYRoadPresent	.635	.079	.317	7.995	.000
	ATimeSavedTalukaPC	.314	.161	.078	1.946	.052
	ATimeSavedDistrictPC	.059	.187	.012	.318	.751
	ATimeSavedStateHighwayPC	-.215	.181	-.055	-1.185	.236
	ATimeSavedHealthCentrePC	-.047	.164	-.012	-.284	.776

a. Dependent Variable: RPO28_02

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter
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a. Dependent Variable: RPO28_03

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.264 ^a	.070	.066	.81919

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	56.289	4	14.072	20.970	.000 ^b
Residual	753.611	1123	.671		
Total	809.901	1127			

a. Dependent Variable: RPO28_03

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.307	.038		60.770	.000
	ATimeSavedTalukaPC	.438	.159	.113	2.758	.006
	ATimeSavedDistrictPC	.581	.178	.126	3.269	.001
	ATimeSavedStateHighwayPC	.076	.174	.020	.440	.660
	ATimeSavedHealthCentrePC	.187	.158	.051	1.181	.238

a. Dependent Variable: RPO28_03

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_03

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357 ^a	.127	.123	.79376

a. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	102.970	5	20.594	32.686	.000 ^b
Residual	706.930	1122	.630		
Total	809.901	1127			

a. Dependent Variable: RPO28_03

b. Predictors: (Constant), ATimeSavedHealthCentrePC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.062	.047		44.311	.000
	PMGSYRoadPresent	.654	.076	.338	8.608	.000
	ATimeSavedTalukaPC	.381	.154	.098	2.473	.014
	ATimeSavedDistrictPC	.184	.178	.040	1.032	.302
	ATimeSavedStateHighwayPC	-.282	.173	-.074	-1.625	.104
	ATimeSavedHealthCentrePC	-.109	.157	-.030	-.692	.489

a. Dependent Variable: RPO28_03

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_04

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.211 ^a	.044	.042	.87776

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.597	3	17.532	22.755	.000 ^b
	Residual	1134.132	1472	.770		
	Total	1186.729	1475			

a. Dependent Variable: RPO28_04

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.267	.037		61.318	.000
	ATimeSavedTalukaPC	.240	.142	.057	1.693	.091
	ATimeSavedDistrictPC	.824	.166	.168	4.979	.000
	ATimeSavedStateHighwayPC	.033	.146	.008	.229	.819

a. Dependent Variable: RPO28_04

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_04

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.286 ^a	.082	.079	.86069

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	97.043	4	24.261	32.750	.000 ^b
	Residual	1089.686	1471	.741		
	Total	1186.729	1475			

a. Dependent Variable: RPO28_04

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.997	.050		39.640	.000
	PMGSYRoadPresent	.562	.073	.250	7.746	.000
	ATimeSavedTalukaPC	.130	.140	.031	.932	.351
	ATimeSavedDistrictPC	.523	.167	.106	3.136	.002
	ATimeSavedStateHighwayPC	-.342	.151	-.085	-2.264	.024

a. Dependent Variable: RPO28_04

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.184 ^a	.034	.032	.88878

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	40.764	3	13.588	17.202	.000 ^b
	Residual	1161.986	1471	.790		
	Total	1202.750	1474			

a. Dependent Variable: RPO28_05

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.303	.037		61.455	.000
	ATimeSavedTalukaPC	.167	.144	.040	1.161	.246
	ATimeSavedDistrictPC	.707	.168	.143	4.210	.000

ATimeSavedStateHighwayPC	.095	.149	.023	.636	.525
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a. Dependent Variable: RPO28_05

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHig hwayPC, PMGSYRoadPresent, ATimeSavedTalukaP C, ATimeSavedDistrictP C ^b	.	Enter

a. Dependent Variable: RPO28_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.247 ^a	.061	.058	.87653

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.346	4	18.337	23.866	.000 ^b
	Residual	1129.403	1470	.768		
	Total	1202.750	1474			

a. Dependent Variable: RPO28_05

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.072	.051		40.457	.000
	PMGSYRoadPresent	.482	.074	.213	6.512	.000
	ATimeSavedTalukaPC	.073	.142	.017	.510	.610
	ATimeSavedDistrictPC	.449	.170	.091	2.635	.008
	ATimeSavedStateHighwayPC	-.231	.155	-.056	-1.491	.136

a. Dependent Variable: RPO28_05

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedSchoolP C, ATimeSavedTalukaP C, ATimeSavedDistrictP C, ATimeSavedStateHig hwayPC ^b	.	Enter

a. Dependent Variable: RPO28_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.233 ^a	.054	.051	.83758

a. Predictors: (Constant), ATimeSavedSchoolPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.767	4	12.442	17.735	.000 ^b
	Residual	863.601	1231	.702		
	Total	913.368	1235			

a. Dependent Variable: RPO28_06

b. Predictors: (Constant), ATimeSavedSchoolPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.323	.038		60.720	.000
	ATimeSavedTalukaPC	.266	.147	.067	1.804	.071
	ATimeSavedDistrictPC	.771	.174	.165	4.421	.000
	ATimeSavedStateHighwayPC	.186	.155	.048	1.201	.230
	ATimeSavedSchoolPC	-.246	.168	-.044	-1.466	.143

a. Dependent Variable: RPO28_06

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedSchoolPC, C, ATimeSavedTalukaPC, C, PMGSYRoadPresent, ATimeSavedDistrictPC, C, ATimeSavedStateHighwayPC ^b		Enter

a. Dependent Variable: RPO28_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.304 ^a	.092	.089	.82097

a. Predictors: (Constant), ATimeSavedSchoolPC, ATimeSavedTalukaPC, PMGSYRoadPresent, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.348	5	16.870	25.029	.000 ^b
	Residual	829.020	1230	.674		
	Total	913.368	1235			

a. Dependent Variable: RPO28_06

b. Predictors: (Constant), ATimeSavedSchoolPC, ATimeSavedTalukaPC, PMGSYRoadPresent, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.104	.048		43.496	.000
	PMGSYRoadPresent	.548	.077	.270	7.163	.000
	ATimeSavedTalukaPC	.155	.145	.039	1.066	.287
	ATimeSavedDistrictPC	.433	.177	.093	2.443	.015
	ATimeSavedStateHighwayPC	-.213	.162	-.055	-1.313	.190
	ATimeSavedSchoolPC	-.366	.165	-.065	-2.215	.027

a. Dependent Variable: RPO28_06

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedCollegePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_07
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.297 ^a	.088	.085	.88847

a. Predictors: (Constant), ATimeSavedCollegePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.128	4	24.782	31.394	.000 ^b
	Residual	1024.622	1298	.789		
	Total	1123.750	1302			

a. Dependent Variable: RPO28_07
b. Predictors: (Constant), ATimeSavedCollegePC, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.183	.039		56.286	.000
	ATimeSavedTalukaPC	.463	.178	.106	2.595	.010
	ATimeSavedDistrictPC	.556	.184	.111	3.015	.003
	ATimeSavedStateHighwayPC	.107	.174	.025	.615	.539
	ATimeSavedCollegePC	.418	.151	.106	2.770	.006

a. Dependent Variable: RPO28_07

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedCollegePC, PMGSYRoadPresent, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_07
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.336 ^a	.113	.109	.87679

a. Predictors: (Constant), ATimeSavedCollegePC, PMGSYRoadPresent, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	126.670	5	25.334	32.954	.000 ^b

Residual	997.080	1297	.769		
Total	1123.750	1302			

a. Dependent Variable: RPO28_07

b. Predictors: (Constant), ATimeSavedCollegePC, PMGSYRoadPresent, ATimeSavedDistrictPC, ATimeSavedTalukaPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.980	.051		38.646	.000
	PMGSYRoadPresent	.461	.077	.207	5.986	.000
	ATimeSavedTalukaPC	.408	.176	.093	2.315	.021
	ATimeSavedDistrictPC	.328	.186	.066	1.767	.077
	ATimeSavedStateHighwayPC	-.220	.180	-.052	-1.220	.223
	ATimeSavedCollegePC	.338	.150	.085	2.260	.024

a. Dependent Variable: RPO28_07

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b		Enter

a. Dependent Variable: RPO28_08

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.041 ^a	.002	-.003	1.02678

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.052	3	.351	.333	.802 ^b
	Residual	623.076	591	1.054		
	Total	624.128	594			

a. Dependent Variable: RPO28_08

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.051	.059		35.042	.000
	ATimeSavedTalukaPC	-.109	.267	-.024	-.407	.684
	ATimeSavedDistrictPC	.234	.349	.047	.670	.503
	ATimeSavedStateHighwayPC	.031	.323	.007	.096	.923

a. Dependent Variable: RPO28_08

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter
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a. Dependent Variable: RPO28_08

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.156 ^a	.024	.018	1.01590

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.211	4	3.803	3.685	.006 ^b
	Residual	608.917	590	1.032		
	Total	624.128	594			

a. Dependent Variable: RPO28_08

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.948	.064		30.318	.000
	PMGSYRoadPresent	.549	.148	.265	3.704	.000
	ATimeSavedTalukaPC	-.214	.266	-.047	-.806	.420
	ATimeSavedDistrictPC	.002	.351	.000	.004	.996
	ATimeSavedStateHighwayPC	-.660	.370	-.154	-1.783	.075

a. Dependent Variable: RPO28_08

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.144 ^a	.021	.019	1.10695

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.367	3	12.789	10.437	.000 ^b
	Residual	1806.134	1474	1.225		
	Total	1844.501	1477			

a. Dependent Variable: RPO28_09

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	2.151	.047		46.121	.000
	ATimeSavedTalukaPC	-.345	.180	-.066	-1.919	.055
	ATimeSavedDistrictPC	1.097	.208	.179	5.271	.000
	ATimeSavedStateHighwayPC	-.112	.184	-.022	-.608	.543

a. Dependent Variable: RPO28_09

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.308 ^a	.095	.092	1.06476

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	174.548	4	43.637	38.490	.000 ^b
	Residual	1669.954	1473	1.134		
	Total	1844.501	1477			

a. Dependent Variable: RPO28_09

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.679	.062		26.995	.000
	PMGSYRoadPresent	.984	.090	.351	10.960	.000
	ATimeSavedTalukaPC	-.538	.174	-.103	-3.096	.002
	ATimeSavedDistrictPC	.562	.206	.092	2.728	.006
	ATimeSavedStateHighwayPC	-.768	.187	-.153	-4.113	.000

a. Dependent Variable: RPO28_09

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.206 ^a	.042	.040	.92212

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.419	3	18.473	21.725	.000 ^b
	Residual	1253.344	1474	.850		
	Total	1308.763	1477			

a. Dependent Variable: RPO28_10

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.260	.039		58.136	.000
	ATimeSavedTalukaPC	.335	.149	.076	2.240	.025
	ATimeSavedDistrictPC	.851	.174	.164	4.894	.000
	ATimeSavedStateHighwayPC	-.063	.153	-.015	-.413	.680

a. Dependent Variable: RPO28_10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b		Enter

a. Dependent Variable: RPO28_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.260 ^a	.067	.065	.91030

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	88.164	4	22.041	26.599	.000 ^b
	Residual	1220.600	1473	.829		
	Total	1308.763	1477			

a. Dependent Variable: RPO28_10

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.027	.053		38.058	.000
	PMGSYRoadPresent	.483	.077	.204	6.286	.000
	ATimeSavedTalukaPC	.240	.148	.055	1.617	.106
	ATimeSavedDistrictPC	.591	.176	.114	3.350	.001
	ATimeSavedStateHighwayPC	-.386	.160	-.091	-2.416	.016

a. Dependent Variable: RPO28_10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method

1	ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC ^b	.	Enter
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a. Dependent Variable: RPO28_11
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.264 ^a	.070	.065	.91778

a. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.238	5	12.448	14.778	.000 ^b
	Residual	829.689	985	.842		
	Total	891.927	990			

a. Dependent Variable: RPO28_11
b. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.206	.043		51.042	.000
	ATimeSavedTalukaPC	.452	.212	.096	2.128	.034
	ATimeSavedDistrictPC	.920	.254	.174	3.629	.000
	ATimeSavedStateHighwayPC	-.090	.231	-.021	-.388	.698
	ATimeSavedMandiPC	-.038	.223	-.009	-.171	.864
	ATimeSavedMarketPC	.230	.201	.055	1.144	.253

a. Dependent Variable: RPO28_11

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_11
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.294 ^a	.087	.081	.90988

a. Predictors: (Constant), ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.289	6	12.881	15.560	.000 ^b
	Residual	814.639	984	.828		
	Total	891.927	990			

a. Dependent Variable: RPO28_11

b. Predictors: (Constant), ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.072	.053		38.974	.000
	PMGSYRoadPresent	.383	.090	.184	4.264	.000
	ATimeSavedTalukaPC	.408	.211	.087	1.937	.053
	ATimeSavedDistrictPC	.707	.256	.134	2.757	.006
	ATimeSavedStateHighwayPC	-.350	.237	-.080	-1.475	.140
	ATimeSavedMandiPC	-.140	.223	-.033	-.630	.529
	ATimeSavedMarketPC	.171	.199	.041	.857	.392

a. Dependent Variable: RPO28_11

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC, ATimeSavedMandiPC ^b		Enter

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.331 ^a	.109	.100	.661

a. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC, ATimeSavedMandiPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.120	5	5.224	11.942	.000 ^b
	Residual	212.611	486	.437		
	Total	238.732	491			

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

b. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedStateHighwayPC, ATimeSavedMandiPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.567	.040		88.894	.000
	ATimeSavedTalukaPC	-.435	.205	-.140	-2.124	.034
	ATimeSavedDistrictPC	.538	.267	.160	2.013	.045
	ATimeSavedStateHighwayPC	.719	.350	.250	2.057	.040

ATimeSavedMandiPC	.337	.369	.121	.913	.362
ATimeSavedMarketPC	-.266	.306	-.095	-.871	.384

a. Dependent Variable: Access to markets _mandis for animal husbandary_dairy_fishing_poultry

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedStateHighwayPC, ATimeSavedMandiPC ^b	.	Enter

a. Dependent Variable: RPO28_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.272 ^a	.074	.063	.95231

a. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedStateHighwayPC, ATimeSavedMandiPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.201	6	5.867	6.469	.000 ^b
	Residual	439.846	485	.907		
	Total	475.047	491			

a. Dependent Variable: RPO28_12

b. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent, ATimeSavedStateHighwayPC, ATimeSavedMandiPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.000	.060		33.206	.000
	PMGSYRoadPresent	.150	.213	.076	.704	.482
	ATimeSavedTalukaPC	-.126	.295	-.029	-.428	.669
	ATimeSavedDistrictPC	.612	.394	.129	1.551	.122
	ATimeSavedStateHighwayPC	.802	.510	.198	1.572	.117
	ATimeSavedMandiPC	.200	.554	.051	.360	.719
	ATimeSavedMarketPC	-.640	.452	-.162	-1.415	.158

a. Dependent Variable: RPO28_12

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC ^b	.	Enter

a. Dependent Variable: RPO28_13

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.281 ^a	.079	.074	.90153

a. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.484	5	12.897	15.868	.000 ^b
	Residual	755.052	929	.813		
	Total	819.536	934			

a. Dependent Variable: RPO28_13

b. Predictors: (Constant), ATimeSavedMarketPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.185	.044		49.902	.000
	ATimeSavedTalukaPC	.373	.216	.080	1.726	.085
	ATimeSavedDistrictPC	1.122	.260	.217	4.314	.000
	ATimeSavedStateHighwayPC	.129	.243	.030	.529	.597
	ATimeSavedMandiPC	-.230	.226	-.055	-1.015	.310
	ATimeSavedMarketPC	.126	.210	.030	.600	.549

a. Dependent Variable: RPO28_13

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC ^b		Enter

a. Dependent Variable: RPO28_13

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328 ^a	.108	.102	.88776

a. Predictors: (Constant), ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	88.165	6	14.694	18.645	.000 ^b
	Residual	731.371	928	.788		
	Total	819.536	934			

a. Dependent Variable: RPO28_13

b. Predictors: (Constant), ATimeSavedMarketPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC, ATimeSavedMandiPC, ATimeSavedStateHighwayPC

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
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		B	Std. Error	Beta		
1	(Constant)	2.007	.054		37.224	.000
	PMGSYRoadPresent	.492	.090	.238	5.482	.000
	ATimeSavedTalukaPC	.309	.213	.066	1.448	.148
	ATimeSavedDistrictPC	.841	.261	.163	3.220	.001
	ATimeSavedStateHighwayPC	-.173	.246	-.040	-.704	.481
	ATimeSavedMandiPC	-.358	.224	-.086	-1.600	.110
	ATimeSavedMarketPC	.042	.207	.010	.205	.838

a. Dependent Variable: RPO28_13

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, C, ATimeSavedDistrictPC ^b		Enter

a. Dependent Variable: Shift in agricultural practices or cropping pattern

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.272 ^a	.074	.069	.702

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.314	3	7.771	15.763	.000 ^b
	Residual	290.881	590	.493		
	Total	314.195	593			

a. Dependent Variable: Shift in agricultural practices or cropping pattern

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.540	.040		88.434	.000
	ATimeSavedTalukaPC	-.468	.183	-.144	-2.551	.011
	ATimeSavedDistrictPC	.493	.239	.139	2.061	.040
	ATimeSavedStateHighwayPC	.714	.221	.235	3.224	.001

a. Dependent Variable: Shift in agricultural practices or cropping pattern

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, C, ATimeSavedDistrictPC, C, PMGSYRoadPresent ^b		Enter

a. Dependent Variable: RPO28_14

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.216 ^a	.047	.040	.97585

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.446	4	6.862	7.205	.000 ^b
	Residual	560.891	589	.952		
	Total	588.337	593			

a. Dependent Variable: RPO28_14

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.864	.062		30.202	.000
	PMGSYRoadPresent	.277	.143	.138	1.945	.052
	ATimeSavedTalukaPC	-.389	.256	-.088	-1.520	.129
	ATimeSavedDistrictPC	.285	.338	.059	.845	.398
	ATimeSavedStateHighwayPC	.387	.356	.093	1.088	.277

a. Dependent Variable: RPO28_14

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b		Enter

a. Dependent Variable: RPO28_15

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.168 ^a	.028	.023	.98087

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.480	3	5.493	5.710	.001 ^b
	Residual	567.641	590	.962		
	Total	584.121	593			

a. Dependent Variable: RPO28_15

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.050	.056		36.664	.000
	ATimeSavedTalukaPC	-.420	.255	-.095	-1.643	.101
	ATimeSavedDistrictPC	.373	.333	.077	1.120	.263
	ATimeSavedStateHighwayPC	.644	.309	.155	2.086	.037

a. Dependent Variable: RPO28_15

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter
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a. Dependent Variable: RPO28_15
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.228 ^a	.052	.046	.96960

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.389	4	7.597	8.081	.000 ^b
	Residual	553.732	589	.940		
	Total	584.121	593			

a. Dependent Variable: RPO28_15
b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.948	.061		31.766	.000
	PMGSYRoadPresent	.545	.142	.271	3.846	.000
	ATimeSavedTalukaPC	-.525	.254	-.119	-2.068	.039
	ATimeSavedDistrictPC	.142	.335	.029	.425	.671
	ATimeSavedStateHighwayPC	-.040	.353	-.010	-.114	.909

a. Dependent Variable: RPO28_15

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_16
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.192 ^a	.037	.035	.89778

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.643	3	15.214	18.876	.000 ^b
	Residual	1190.465	1477	.806		
	Total	1236.108	1480			

a. Dependent Variable: RPO28_16
b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.294	.038		60.696	.000
	ATimeSavedTalukaPC	.304	.145	.071	2.096	.036
	ATimeSavedDistrictPC	.780	.168	.156	4.628	.000
	ATimeSavedStateHighwayPC	-.071	.149	-.017	-.479	.632

a. Dependent Variable: RPO28_16

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_16

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.289 ^a	.084	.081	.87605

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	103.321	4	25.830	33.656	.000 ^b
	Residual	1132.787	1476	.767		
	Total	1236.108	1480			

a. Dependent Variable: RPO28_16

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.986	.051		38.811	.000
	PMGSYRoadPresent	.640	.074	.279	8.669	.000
	ATimeSavedTalukaPC	.177	.142	.042	1.245	.213
	ATimeSavedDistrictPC	.437	.169	.087	2.587	.010
	ATimeSavedStateHighwayPC	-.499	.154	-.121	-3.246	.001

a. Dependent Variable: RPO28_16

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.149 ^a	.022	.017	.98502
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a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	13.091	3	4.364	4.497	.004 ^b
	Residual	573.423	591	.970		
	Total	586.514	594			

a. Dependent Variable: RPO28_17

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.053	.056		36.559	.000
	ATimeSavedTalukaPC	-.410	.256	-.093	-1.598	.111
	ATimeSavedDistrictPC	.553	.334	.114	1.654	.099
	ATimeSavedStateHighwayPC	.397	.310	.096	1.282	.200

a. Dependent Variable: RPO28_17

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, C, ATimeSavedDistrictPC, C, PMGSYRoadPresent ^b		Enter

a. Dependent Variable: RPO28_17

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.217 ^a	.047	.041	.97318

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	27.739	4	6.935	7.322	.000 ^b
	Residual	558.776	590	.947		
	Total	586.514	594			

a. Dependent Variable: RPO28_17

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.948	.062		31.649	.000
	PMGSYRoadPresent	.559	.142	.278	3.933	.000
	ATimeSavedTalukaPC	-.517	.255	-.117	-2.031	.043
	ATimeSavedDistrictPC	.317	.336	.066	.944	.345
	ATimeSavedStateHighwayPC	-.305	.355	-.074	-.861	.390

a. Dependent Variable: RPO28_17

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter
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a. Dependent Variable: RPO28_18
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.294 ^a	.087	.084	.88396

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.696	3	21.899	28.026	.000 ^b
	Residual	692.300	886	.781		
	Total	757.996	889			

a. Dependent Variable: RPO28_18
b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.106	.045		47.204	.000
	ATimeSavedTalukaPC	.584	.183	.149	3.188	.001
	ATimeSavedDistrictPC	.417	.223	.090	1.870	.062
	ATimeSavedStateHighwayPC	.347	.208	.090	1.670	.095

a. Dependent Variable: RPO28_18

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter

a. Dependent Variable: RPO28_18
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371 ^a	.138	.134	.85926

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	104.582	4	26.145	35.412	.000 ^b
	Residual	653.414	885	.738		
	Total	757.996	889			

a. Dependent Variable: RPO28_18
b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.912	.051		37.499	.000
	PMGSYRoadPresent	.704	.097	.356	7.257	.000
	ATimeSavedTalukaPC	.401	.180	.103	2.232	.026
	ATimeSavedDistrictPC	.092	.221	.020	.418	.676
	ATimeSavedStateHighwayPC	-.351	.224	-.091	-1.572	.116

a. Dependent Variable: RPO28_18

DATASET ACTIVATE DataSet1.
REGRESSION

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, C, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_19

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.161 ^a	.026	.024	1.29314

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.996	3	21.665	12.956	.000 ^b
	Residual	2456.482	1469	1.672		
	Total	2521.479	1472			

a. Dependent Variable: RPO28_19

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.646	.055		30.182	.000
	ATimeSavedTalukaPC	.411	.209	.067	1.965	.050
	ATimeSavedDistrictPC	-.116	.244	-.016	-.477	.634
	ATimeSavedStateHighwayPC	.712	.216	.120	3.301	.001

a. Dependent Variable: RPO28_19

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, C, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_19

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.186 ^a	.035	.032	1.28775

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.080	4	21.770	13.128	.000 ^b
	Residual	2434.398	1468	1.658		
	Total	2521.479	1472			

a. Dependent Variable: RPO28_19

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.455	.075		19.314	.000
	PMGSYRoadPresent	.397	.109	.121	3.649	.000
	ATimeSavedTalukaPC	.331	.209	.054	1.581	.114
	ATimeSavedDistrictPC	-.328	.250	-.046	-1.315	.189
	ATimeSavedStateHighwayPC	.447	.227	.076	1.971	.049

a. Dependent Variable: RPO28_19

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b		Enter

a. Dependent Variable: RPO28_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.214 ^a	.046	.044	1.03499

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.481	3	25.160	23.488	.000 ^b
	Residual	1567.169	1463	1.071		
	Total	1642.650	1466			

a. Dependent Variable: RPO28_20

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.930	.044		44.256	.000
	ATimeSavedTalukaPC	.327	.169	.066	1.941	.052
	ATimeSavedDistrictPC	.824	.197	.142	4.194	.000
	ATimeSavedStateHighwayPC	.176	.174	.037	1.010	.313

a. Dependent Variable: RPO28_20

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_20

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.280 ^a	.078	.076	1.01753

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	128.947	4	32.237	31.136	.000 ^b
	Residual	1513.703	1462	1.035		
	Total	1642.650	1466			

a. Dependent Variable: RPO28_20

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.634	.060		27.433	.000
	PMGSYRoadPresent	.617	.086	.233	7.186	.000
	ATimeSavedTalukaPC	.203	.167	.041	1.221	.222
	ATimeSavedDistrictPC	.493	.199	.085	2.481	.013
	ATimeSavedStateHighwayPC	-.234	.180	-.049	-1.299	.194

a. Dependent Variable: RPO28_20

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_21

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.220 ^a	.048	.043	1.12122

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.465	3	12.488	9.934	.000 ^b
	Residual	739.196	588	1.257		
	Total	776.660	591			

a. Dependent Variable: RPO28_21

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.577	.064		24.647	.000
	ATimeSavedTalukaPC	-.189	.293	-.037	-.644	.520
	ATimeSavedDistrictPC	.856	.379	.154	2.256	.024
	ATimeSavedStateHighwayPC	.492	.352	.103	1.396	.163

a. Dependent Variable: RPO28_21

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter

a. Dependent Variable: RPO28_21

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.223 ^a	.050	.043	1.12117

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.789	4	9.697	7.715	.000 ^b
	Residual	737.871	587	1.257		
	Total	776.660	591			

a. Dependent Variable: RPO28_21

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.608	.071		22.677	.000
	PMGSYRoadPresent	-.169	.164	-.073	-1.027	.305
	ATimeSavedTalukaPC	-.155	.295	-.030	-.525	.600
	ATimeSavedDistrictPC	.930	.386	.167	2.407	.016
	ATimeSavedStateHighwayPC	.702	.407	.147	1.723	.085

a. Dependent Variable: RPO28_21

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.217 ^a	.047	.042	.98630

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.940	3	9.313	9.574	.000 ^b
	Residual	566.157	582	.973		
	Total	594.097	585			

a. Dependent Variable: RPO28_22

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.771	.056		31.398	.000
	ATimeSavedTalukaPC	-.411	.259	-.091	-1.587	.113
	ATimeSavedDistrictPC	.694	.337	.141	2.060	.040
	ATimeSavedStateHighwayPC	.611	.312	.145	1.957	.051

a. Dependent Variable: RPO28_22

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b		Enter

a. Dependent Variable: RPO28_22

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.222 ^a	.049	.043	.98594

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.325	4	7.331	7.542	.000 ^b
	Residual	564.772	581	.972		
	Total	594.097	585			

a. Dependent Variable: RPO28_22

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.739	.062		27.832	.000
	PMGSYRoadPresent	.173	.145	.085	1.194	.233
	ATimeSavedTalukaPC	-.447	.261	-.099	-1.714	.087
	ATimeSavedDistrictPC	.617	.343	.125	1.800	.072
	ATimeSavedStateHighwayPC	.396	.361	.094	1.097	.273

a. Dependent Variable: RPO28_22

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC ^b	.	Enter

a. Dependent Variable: RPO28_23
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.030	.028	.90832

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.401	3	12.467	15.110	.000 ^b
	Residual	1215.299	1473	.825		
	Total	1252.700	1476			

a. Dependent Variable: RPO28_23
b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedDistrictPC, ATimeSavedTalukaPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.284	.038		59.594	.000
	ATimeSavedTalukaPC	.283	.147	.066	1.929	.054
	ATimeSavedDistrictPC	.465	.171	.092	2.723	.007
	ATimeSavedStateHighwayPC	.180	.151	.043	1.198	.231

a. Dependent Variable: RPO28_23

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_23
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.253 ^a	.064	.061	.89258

a. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.955	4	19.989	25.089	.000 ^b
	Residual	1172.745	1472	.797		
	Total	1252.700	1476			

a. Dependent Variable: RPO28_23

b. Predictors: (Constant), ATimeSavedStateHighwayPC, PMGSYRoadPresent, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.020	.052		38.747	.000
	PMGSYRoadPresent	.551	.075	.239	7.308	.000
	ATimeSavedTalukaPC	.174	.145	.040	1.200	.230
	ATimeSavedDistrictPC	.168	.173	.033	.976	.329
	ATimeSavedStateHighwayPC	-.190	.156	-.046	-1.215	.224

a. Dependent Variable: RPO28_23

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b		Enter

a. Dependent Variable: RPO28_24

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.298 ^a	.089	.084	.98629

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.338	3	18.446	18.962	.000 ^b
	Residual	568.096	584	.973		
	Total	623.434	587			

a. Dependent Variable: RPO28_24

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.370	.056		24.316	.000
	ATimeSavedTalukaPC	-.727	.258	-.157	-2.814	.005
	ATimeSavedDistrictPC	.952	.335	.188	2.840	.005
	ATimeSavedStateHighwayPC	.948	.311	.219	3.051	.002

a. Dependent Variable: RPO28_24

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
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1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter
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a. Dependent Variable: RPO28_24

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.305 ^a	.093	.087	.98466

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.178	4	14.545	15.001	.000 ^b
	Residual	565.255	583	.970		
	Total	623.434	587			

a. Dependent Variable: RPO28_24

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.324	.062		21.260	.000
	PMGSYRoadPresent	.248	.145	.119	1.712	.087
	ATimeSavedTalukaPC	-.778	.260	-.168	-2.998	.003
	ATimeSavedDistrictPC	.840	.341	.166	2.464	.014
	ATimeSavedStateHighwayPC	.640	.359	.148	1.783	.075

a. Dependent Variable: RPO28_24

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.223 ^a	.050	.045	.97326

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.070	3	9.690	10.230	.000 ^b
	Residual	554.129	585	.947		
	Total	583.199	588			

a. Dependent Variable: RPO28_25

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.721	.056		30.973	.000
	ATimeSavedTalukaPC	-.879	.256	-.198	-3.436	.001
	ATimeSavedDistrictPC	.321	.333	.066	.964	.335
	ATimeSavedStateHighwayPC	1.091	.309	.261	3.534	.000

a. Dependent Variable: RPO28_25

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b	.	Enter

a. Dependent Variable: RPO28_25

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265 ^a	.070	.064	.96371

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.818	4	10.204	10.988	.000 ^b
	Residual	542.381	584	.929		
	Total	583.199	588			

a. Dependent Variable: RPO28_25

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.628	.061		26.710	.000
	PMGSYRoadPresent	.504	.142	.250	3.557	.000
	ATimeSavedTalukaPC	-.976	.255	-.220	-3.833	.000
	ATimeSavedDistrictPC	.101	.336	.021	.299	.765
	ATimeSavedStateHighwayPC	.457	.354	.109	1.291	.197

a. Dependent Variable: RPO28_25

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC ^b	.	Enter

a. Dependent Variable: RPO28_26

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.222 ^a	.049	.044	.97189

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.646	3	9.549	10.109	.000 ^b
	Residual	553.517	586	.945		
	Total	582.163	589			

a. Dependent Variable: RPO28_26

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.732	.055		31.214	.000
	ATimeSavedTalukaPC	-.885	.254	-.200	-3.490	.001
	ATimeSavedDistrictPC	.366	.332	.075	1.103	.271
	ATimeSavedStateHighwayPC	1.040	.307	.250	3.388	.001

a. Dependent Variable: RPO28_26

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent ^b		Enter

a. Dependent Variable: RPO28_26

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.262 ^a	.069	.062	.96263

a. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.073	4	10.018	10.811	.000 ^b
	Residual	542.089	585	.927		
	Total	582.163	589			

a. Dependent Variable: RPO28_26

b. Predictors: (Constant), ATimeSavedStateHighwayPC, ATimeSavedTalukaPC, ATimeSavedDistrictPC, PMGSYRoadPresent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.640	.061		26.937	.000
	PMGSYRoadPresent	.497	.141	.247	3.512	.000
	ATimeSavedTalukaPC	-.985	.253	-.222	-3.896	.000
	ATimeSavedDistrictPC	.147	.334	.030	.441	.660
	ATimeSavedStateHighwayPC	.419	.352	.101	1.192	.234

a. Dependent Variable: RPO28_26

Appendix 17: Analysis of the Outcome and Impact by Type of Connectivity and Road Characteristic Variables (based on HH data)

Table 5.4.12: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by States)

(%)

State	PMGSY Road	Market	Habitatio n	Villag e	Taluka	District	State Highwa y	Theatre or Mall	Health Centre	School	College	Vocation al	Industri es	
Bihar	Absent	Mean	0.40	0.49	0.01	0.13	0.28	0.30	0.20	0.58	0.22	0.42	0.48	0.38
		N Std. Deviation	125.00	43.00	158.00	168.00	169.00	29.00	30.00	51.00	31.00	13.00	14.00	51.00
	Present	Mean	0.94	1.31	0.44	0.61	0.45	0.83	0.99	1.02	0.27	0.81	0.99	1.04
		N Std. Deviation	340.00	213.00	400.00	400.00	399.00	175.00	122.00	208.00	185.00	120.00	96.00	226.00
	Total	Mean	0.79	1.18	0.32	0.47	0.40	0.76	0.83	0.93	0.27	0.77	0.92	0.92
		N Std. Deviation	465.00	256.00	558.00	568.00	568.00	204.00	152.00	259.00	216.00	133.00	110.00	277.00
Himachal Pradesh	Absent	Mean	0.80	1.83	0.00	0.30	0.07			1.81	1.27	2.33	2.26	
		N Std. Deviation	57.00	12.00	57.00	57.00	57.00			43.00	30.00	11.00	37.00	
	Present	Mean	1.26	1.48	0.53	0.37	0.33	0.83	0.52	1.85	0.93	1.32	0.13	1.48
		N Std. Deviation	234.00	145.00	234.00	157.00	234.00	69.00	15.00	140.00	132.00	39.00	16.00	114.00
	Total	Mean	1.17	1.51	0.42	0.35	0.28	0.83	0.52	1.84	0.99	1.55	0.13	1.67
		N Std. Deviation	291.00	157.00	291.00	214.00	291.00	69.00	15.00	183.00	162.00	50.00	16.00	151.00
Jharkhand	Mean	0.54	0.54	0.35	0.41	0.48	0.61	0.90	0.57	0.18	0.91	1.06	0.61	

	Absent	N Std. Deviation	107.00 0.54	83.00 0.57	107.00 0.52	107.00 0.56	107.00 0.69	82.00 0.62	71.00 0.64	101.00 0.57	77.00 0.30	66.00 0.64	30.00 0.55	89.00 0.53
	Present	Mean N Std. Deviation	0.88 243.00 0.60	0.94 224.00 0.66	0.61 244.00 0.66	0.54 243.00 0.65	0.44 244.00 0.50	1.13 99.00 0.51	1.34 108.00 1.99	0.90 202.00 0.68	0.19 165.00 0.34	1.08 116.00 0.38	0.96 102.00 0.44	0.99 194.00 0.57
	Total	Mean N Std. Deviation	0.78 350.00 0.60	0.84 307.00 0.66	0.53 351.00 0.63	0.50 350.00 0.63	0.46 351.00 0.56	0.89 181.00 0.62	1.16 179.00 1.61	0.79 303.00 0.66	0.19 242.00 0.32	1.02 182.00 0.49	0.99 132.00 0.47	0.87 283.00 0.58
Meghalaya	Absent	Mean N Std. Deviation	0.59 80.00 0.89	0.00 37.00 0.00	0.40 80.00 0.60	0.59 79.00 0.89	0.23 80.00 0.39	0.30 5.00 0.27	0.25 4.00 0.17	0.36 44.00 0.47	0.59 44.00 0.57	0.10 14.00 0.36	0.00 1.00 .	0.71 40.00 0.73
	Present	Mean N Std. Deviation	0.51 139.00 0.33	0.95 27.00 0.87	0.53 29.00 0.54	0.37 139.00 0.24	0.30 130.00 0.25	0.75 54.00 0.52	0.42 97.00 0.15	0.45 122.00 0.28	0.48 125.00 0.31	0.36 114.00 0.21	0.42 97.00 0.15	0.43 120.00 0.26
	Total	Mean N Std. Deviation	0.54 219.00 0.60	0.40 64.00 0.73	0.44 109.00 0.58	0.45 218.00 0.58	0.27 210.00 0.31	0.71 59.00 0.52	0.41 101.00 0.16	0.43 166.00 0.34	0.50 169.00 0.40	0.33 128.00 0.24	0.42 98.00 0.16	0.50 160.00 0.44
Not entered	Present	Mean N Std. Deviation	5.00 1.00 .		5.00 1.00 .	5.00 1.00 .	0.14 1.00 .	0.50 1.00 .	0.14 1.00 .	1.00 1.00 .		5.00 1.00 .		
	Total	Mean N Std. Deviation	5.00 1.00 .		5.00 1.00 .	5.00 1.00 .	0.14 1.00 .	0.50 1.00 .	0.14 1.00 .	1.00 1.00 .		5.00 1.00 .		
Punjab	Present	Mean N	0.04 198.00	0.20 68.00	0.13 198.00	0.06 160.00	0.16 146.00	0.07 33.00	0.07 30.00	0.02 147.00	0.02 185.00	0.01 148.00	0.04 1.00	0.03 157.00

		Std. Deviation	0.42	0.41	0.82	0.14	0.19	0.35	0.25	0.13	0.17	0.08	.	0.26	
	Total	Mean	0.04	0.20	0.13	0.06	0.16	0.07	0.07	0.02	0.02	0.01	0.04	0.03	
		N	198.00	68.00	198.00	160.00	146.00	33.00	30.00	147.00	185.00	148.00	1.00	157.00	
		Std. Deviation	0.42	0.41	0.82	0.14	0.19	0.35	0.25	0.13	0.17	0.08	.	0.26	
Rajasthan	Absent	Mean	0.39	0.70	0.23	0.12	0.21	0.36	0.25	0.17	0.35	0.27	0.00	0.20	
		N	36.00	28.00	40.00	42.00	42.00	30.00	13.00	13.00	23.00	28.00	1.00	16.00	
		Std. Deviation	0.29	0.49	0.26	0.15	0.10	0.25	0.17	0.29	0.45	0.27	.	0.12	
	Present	Mean	0.95	0.83	0.71	0.75	0.44	0.89	0.68	1.00	0.17	0.76		0.64	
		N	343.00	63.00	368.00	364.00	368.00	257.00	198.00	226.00	294.00	287.00		64.00	
			Std. Deviation	0.93	0.46	1.03	0.95	0.72	0.97	1.06	1.13	0.35	0.94		0.71
	Total	Mean	0.89	0.79	0.66	0.69	0.42	0.84	0.65	0.96	0.18	0.72	0.00	0.55	
		N	379.00	91.00	408.00	406.00	410.00	287.00	211.00	239.00	317.00	315.00	1.00	80.00	
		Std. Deviation	0.90	0.47	1.00	0.93	0.68	0.94	1.03	1.12	0.36	0.91	.	0.66	
Uttar Pradesh	Absent	Mean	0.08	0.00	0.06	0.27	0.24	0.28	0.00	0.04	0.16	0.10	0.19	0.05	
		N	203.00	32.00	255.00	259.00	258.00	124.00	3.00	50.00	77.00	108.00	31.00	15.00	
			Std. Deviation	0.23	0.00	0.20	0.31	0.45	0.41	0.00	0.20	0.25	0.44	0.19	0.21
	Present	Mean	0.36	0.25	0.28	0.32	0.29	0.45	0.33	0.43	0.15	0.68	0.29	0.39	
		N	579.00	192.00	682.00	684.00	684.00	573.00	405.00	420.00	411.00	523.00	274.00	447.00	
			Std. Deviation	0.41	0.37	0.37	0.37	0.28	0.58	0.38	0.47	0.23	1.87	0.31	0.46
	Total	Mean	0.28	0.22	0.22	0.31	0.27	0.42	0.33	0.39	0.15	0.58	0.28	0.38	
		N	782.00	224.00	937.00	943.00	942.00	697.00	408.00	470.00	488.00	631.00	305.00	462.00	
		Std. Deviation	0.39	0.35	0.35	0.35	0.33	0.56	0.38	0.46	0.23	1.72	0.31	0.45	
Uttarakhand	Absent	Mean	0.16		0.11	0.73	0.21	1.30	0.43	0.50	0.19	0.24	0.30	0.18	
		N	76.00		86.00	86.00	86.00	15.00	9.00	2.00	36.00	29.00	16.00	7.00	

	Std. Deviation	0.31		0.22	1.20	0.13	0.89		0.16	0.00	0.17	0.83	0.14	0.08
Present	Mean	0.31		0.15	0.77	0.65	1.00		0.21	0.61	0.08	0.58	0.99	0.85
	N	74.00		100.00	101.00	101.00	79.00		10.00	22.00	70.00	92.00	34.00	19.00
	Std. Deviation	0.38		0.25	1.36	1.37	1.20		0.14	0.56	0.15	0.79	1.15	0.83
Total	Mean	0.23		0.13	0.76	0.45	1.05		0.32	0.60	0.11	0.49	0.77	0.67
	N	150.00		186.00	187.00	187.00	94.00		19.00	24.00	106.00	121.00	50.00	26.00
	Std. Deviation	0.35		0.24	1.29	1.03	1.16		0.18	0.53	0.16	0.81	1.00	0.77
Total	Mean	0.35	0.46	0.13	0.34	0.26	0.44		0.60	0.61	0.35	0.44	0.53	0.75
	N	684.00	235.00	783.00	798.00	799.00	285.00		130.00	304.00	318.00	269.00	93.00	255.00
	Std. Deviation	0.58	0.65	0.34	0.61	0.40	0.55		0.60	0.88	0.58	0.73	0.52	1.02
Present	Mean	0.68	0.91	0.43	0.48	0.37	0.69		0.60	0.76	0.24	0.66	0.56	0.66
	N	2151.00	932.00	2256.00	2249.00	2307.00	1340.00		986.00	1488.00	1567.00	1440.00	620.00	1341.00
	Std. Deviation	0.78	0.96	1.01	0.73	0.55	0.80		0.97	0.91	0.48	1.30	0.62	0.72
Total	Mean	0.60	0.82	0.35	0.44	0.34	0.64		0.60	0.74	0.26	0.62	0.56	0.67
	N	2835.00	1167.00	3039.00	3047.00	3106.00	1625.00		1116.00	1792.00	1885.00	1709.00	713.00	1596.00
	Std. Deviation	0.75	0.92	0.90	0.70	0.52	0.76		0.94	0.91	0.50	1.23	0.61	0.78

Table 5.4.13: Time Saved (in minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by States)

Study State	PMGSY Road	Market	Habitat ion	Villag e	Taluka	District	State Highway	Theatr e	Health Centre	School	Colleg e	Vocational	Industrie s
Bihar	Mean	0.20	0.00	0.10	0.21	0.18	0.13	0.30	0.14	0.27	0.31		0.21
	N	136.00	169.00	168.00	169.00	29.00	30.00	51.00	31.00	13.00	14.00		51.00
	Std. Deviation	0.21	0.04	0.12	0.10	0.20	0.16	0.23	0.15	0.12	0.11		0.22
	Present	Mean	0.42	0.17	0.26	0.24	0.36	0.41	0.45	0.17	0.38	0.41	0.42	0.46
	N	340.00	400.00	400.00	399.00	175.00	122.00	209.00	186.00	120.00	96.00	11.00	227.00

		Std. Deviation	0.21	0.25	0.25	0.18	0.22	0.22	0.19	0.17	0.18	0.21	0.03	0.16
	Total	Mean N Std. Deviation	0.36 476.00 0.23	0.12 569.00 0.23	0.21 568.00 0.23	0.23 568.00 0.16	0.34 204.00 0.22	0.36 152.00 0.24	0.42 260.00 0.20	0.17 217.00 0.17	0.37 133.00 0.18	0.39 110.00 0.20	0.42 11.00 0.03	0.42 278.00 0.20
Himachal Pradesh	Absent	Mean N Std. Deviation	0.30 57.00 0.30	0.00 57.00 0.00	0.14 57.00 0.21	0.05 57.00 0.10			0.52 43.00 0.28	0.43 30.00 0.31	0.70 11.00 0.00			0.61 37.00 0.20
	Present	Mean N Std. Deviation	0.42 234.00 0.30	0.08 234.00 0.23	0.16 157.00 0.24	0.21 234.00 0.15	0.35 69.00 0.27	0.22 15.00 0.27	0.53 140.00 0.28	0.30 132.00 0.33	0.37 39.00 0.36	0.00 16.00 0.33	0.08 35.00 0.16	0.49 115.00 0.29
	Total	Mean N Std. Deviation	0.40 291.00 0.31	0.07 291.00 0.21	0.15 214.00 0.24	0.18 291.00 0.16	0.35 69.00 0.27	0.22 15.00 0.27	0.53 183.00 0.28	0.33 162.00 0.33	0.44 50.00 0.35	0.00 16.00 0.33	0.08 35.00 0.16	0.52 152.00 0.28
Jharkhand	Absent	Mean N Std. Deviation	0.27 107.00 0.23	0.17 107.00 0.23	0.21 107.00 0.21	0.22 107.00 0.24	0.26 89.00 0.26	0.40 72.00 0.23	0.27 102.00 0.25	0.12 77.00 0.16	0.40 66.00 0.24	0.48 30.00 0.14	0.25 4.00 0.00	0.31 89.00 0.22
	Present	Mean N Std. Deviation	0.41 243.00 0.21	0.27 244.00 0.27	0.26 243.00 0.23	0.24 244.00 0.20	0.50 99.00 0.15	0.52 108.00 0.11	0.40 203.00 0.22	0.10 165.00 0.21	0.50 116.00 0.15	0.46 102.00 0.14	0.30 16.00 0.21	0.45 194.00 0.18
	Total	Mean N Std. Deviation	0.36 350.00 0.23	0.24 351.00 0.26	0.25 350.00 0.23	0.24 351.00 0.21	0.38 188.00 0.24	0.47 180.00 0.18	0.36 305.00 0.24	0.11 242.00 0.19	0.46 182.00 0.19	0.46 132.00 0.14	0.29 20.00 0.19	0.40 283.00 0.21
Meghalaya	Absent	Mean N	0.22 80.00	0.19 80.00	0.21 79.00	0.13 80.00	0.20 5.00	0.19 4.00	0.20 44.00	0.28 45.00	0.04 14.00	0.00 1.00	0.00 1.00	0.31 40.00

		Std. Deviation	0.29	0.25	0.30	0.19	0.18	0.13	0.21	0.26	0.15	.	.	0.27
	Present	Mean	0.31	0.06	0.25	0.20	0.39	0.29	0.29	0.30	0.24	0.29		0.28
		N	139.00	140.00	139.00	140.00	54.00	97.00	122.00	125.00	114.00	97.00		120.00
		Std. Deviation	0.14	0.15	0.14	0.14	0.14	0.08	0.13	0.14	0.13	0.08		0.13
	Total	Mean	0.28	0.10	0.23	0.17	0.37	0.28	0.26	0.29	0.22	0.28	0.00	0.29
		N	219.00	220.00	218.00	220.00	59.00	101.00	166.00	170.00	128.00	98.00	1.00	160.00
		Std. Deviation	0.21	0.20	0.21	0.16	0.15	0.08	0.16	0.18	0.14	0.08	.	0.17
Not entered	Present	Mean	0.42	0.42	0.83	0.19	0.33	0.13	0.50		0.83			
		N	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00		1.00		
		Std. Deviation	0.59	0.59	.	0.09	.	.	.		.
	Total	Mean	0.42	0.42	0.83	0.19	0.33	0.13	0.50		0.83			
		N	2.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00		1.00		
		Std. Deviation	0.59	0.59	.	0.09	.	.	.		.
Punjab	Present	Mean	0.00	0.04	0.06	0.13	0.02	0.04	0.02	0.01	0.00	0.04	0.02	0.01
		N	198.00	198.00	194.00	198.00	33.00	31.00	156.00	185.00	148.00	1.00	61.00	165.00
		Std. Deviation	0.12	0.14	0.08	0.11	0.13	0.13	0.10	0.07	0.04	.	0.05	0.12
	Total	Mean	0.00	0.04	0.06	0.13	0.02	0.04	0.02	0.01	0.00	0.04	0.02	0.01
		N	198.00	198.00	194.00	198.00	33.00	31.00	156.00	185.00	148.00	1.00	61.00	165.00
		Std. Deviation	0.12	0.14	0.08	0.11	0.13	0.13	0.10	0.07	0.04	.	0.05	0.12
Rajasthan	Absent	Mean	0.22	0.14	0.09	0.17	0.24	0.19	0.11	0.19	0.18	0.00	0.17	0.16
		N	42.00	42.00	42.00	42.00	30.00	13.00	13.00	23.00	28.00	1.00	11.00	16.00
		Std. Deviation	0.16	0.16	0.11	0.07	0.14	0.10	0.16	0.22	0.13	.	0.00	0.08
	Present	Mean	0.38	0.29	0.32	0.24	0.38	0.30	0.41	0.09	0.34			0.33
		N	366.00	368.00	367.00	368.00	257.00	207.00	232.00	294.00	288.00			64.00

		Std. Deviation	0.21	0.25	0.23	0.17	0.20	0.24	0.19	0.18	0.20			0.17
	Total	Mean N Std. Deviation	0.37 408.00 0.21	0.27 410.00 0.24	0.30 409.00 0.23	0.24 410.00 0.16	0.37 287.00 0.20	0.29 220.00 0.24	0.39 245.00 0.20	0.10 317.00 0.18	0.33 316.00 0.20	0.00 1.00 .	0.17 11.00 0.00	0.29 80.00 0.17
Uttar Pradesh	Absent	Mean N Std. Deviation	0.04 256.00 0.11	0.03 259.00 0.10	0.17 259.00 0.22	0.13 259.00 0.16	0.13 127.00 0.34	0.00 5.00 0.00	0.02 51.00 0.10	0.11 77.00 0.12	0.03 108.00 0.20	0.14 31.00 0.13		0.02 18.00 0.10
	Present	Mean N Std. Deviation	0.18 684.00 0.18	0.17 688.00 0.17	0.21 684.00 0.15	0.19 688.00 0.14	0.26 573.00 0.16	0.21 406.00 0.15	0.22 465.00 0.18	0.10 411.00 0.14	0.22 575.00 0.23	0.19 274.00 0.15	0.18 174.00 0.15	0.23 447.00 0.17
	Total	Mean N Std. Deviation	0.14 940.00 0.18	0.13 947.00 0.17	0.20 943.00 0.17	0.18 947.00 0.15	0.24 700.00 0.21	0.21 411.00 0.15	0.20 516.00 0.19	0.10 488.00 0.14	0.19 683.00 0.24	0.18 305.00 0.15	0.18 174.00 0.15	0.23 465.00 0.17
Uttarakhand	Absent	Mean N Std. Deviation	0.08 85.00 0.17	0.07 86.00 0.14	0.21 86.00 0.36	0.16 86.00 0.09	0.31 24.00 0.30	0.29 9.00 0.08	0.33 2.00 0.00	0.14 36.00 0.13	-0.01 29.00 0.39	0.20 18.00 0.10	0.17 9.00 0.05	0.15 7.00 0.06
	Present	Mean N Std. Deviation	0.14 101.00 0.18	0.10 101.00 0.16	0.28 101.00 0.23	0.23 101.00 0.22	0.38 79.00 0.23	0.17 10.00 0.09	0.31 23.00 0.19	0.06 70.00 0.11	0.27 92.00 0.20	0.29 42.00 0.27	0.80 9.00 0.00	0.40 19.00 0.15
	Total	Mean N Std. Deviation	0.11 186.00 0.18	0.09 187.00 0.15	0.25 187.00 0.30	0.20 187.00 0.17	0.36 103.00 0.25	0.23 19.00 0.11	0.31 25.00 0.18	0.08 106.00 0.12	0.20 121.00 0.28	0.26 60.00 0.24	0.49 18.00 0.33	0.34 26.00 0.18
Total	Absent	Mean N	0.15 763.00	0.07 800.00	0.16 798.00	0.16 800.00	0.20 304.00	0.29 133.00	0.25 306.00	0.18 319.00	0.17 269.00	0.28 95.00	0.17 25.00	0.30 258.00

	Std. Deviation	0.22	0.16	0.23	0.16	0.29	0.23	0.27	0.21	0.30	0.19	0.06	0.26
Present	Mean	0.29	0.17	0.23	0.21	0.33	0.29	0.32	0.13	0.26	0.28	0.17	0.31
	N	2307.00	2375.00	2286.00	2374.00	1340.00	997.00	1551.00	1568.00	1493.00	628.00	306.00	1351.00
	Std. Deviation	0.24	0.23	0.21	0.16	0.20	0.21	0.24	0.20	0.23	0.20	0.20	0.23
Total	Mean	0.25	0.14	0.21	0.20	0.30	0.29	0.31	0.14	0.25	0.28	0.17	0.31
	N	3070.00	3175.00	3084.00	3174.00	1644.00	1130.00	1857.00	1887.00	1762.00	723.00	331.00	1609.00
	Std. Deviation	0.25	0.22	0.22	0.17	0.23	0.21	0.24	0.20	0.25	0.20	0.19	0.23

Table 5.4.14: Speed Gains by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by Agro-Climatic Zones)

(%)

AgroClimaticZone	PMGSY Road	Market	Habitation	Village	Taluka	District	State Highway	Theatre	Health Centre	School	College	Vocational	Industries
0.00	Mean	0.75	1.00	1.00	0.17	0.00				0.71			1.00
	Present N	6.00	6.00	6.00	6.00	6.00				6.00			2.00
	Std. Deviation	0.27	0.00	0.00	0.41	0.00				0.46			0.00
	Mean	0.75	1.00	1.00	0.17	0.00				0.71			1.00
	Total N	6.00	6.00	6.00	6.00	6.00				6.00			2.00
	Std. Deviation	0.27	0.00	0.00	0.41	0.00				0.46			0.00
1.00	Mean	0.17	0.39	0.07	0.20	0.15	0.19	0.09	0.17	0.15	0.25	0.11	0.24
	Absent N	293.00	118.00	361.00	367.00	366.00	147.00	53.00	133.00	124.00	158.00	25.00	103.00
	Std. Deviation	0.35	0.74	0.22	0.30	0.16	0.39	0.15	0.42	0.32	0.61	0.14	0.43
	Mean	0.57	0.75	0.36	0.46	0.34	0.61	0.52	0.61	0.14	0.66	0.52	0.52
	Present N	1301.00	529.00	1444.00	1407.00	1410.00	954.00	706.00	923.00	960.00	980.00	369.00	810.00
	Std. Deviation	0.72	0.95	0.72	0.67	0.51	0.78	0.75	0.79	0.27	1.49	0.64	0.61
Total	Mean	0.50	0.69	0.30	0.41	0.30	0.55	0.49	0.56	0.14	0.60	0.50	0.49
	N	1594.00	647.00	1805.00	1774.00	1776.00	1101.00	759.00	1056.00	1084.00	1138.00	394.00	913.00
	Std. Deviation	0.68	0.92	0.66	0.62	0.47	0.76	0.74	0.77	0.27	1.41	0.63	0.60

	Mean	0.99	0.50	0.80	0.68	0.76	0.65	0.97	0.97	0.16	0.77		0.66
	Present N	58.00	12.00	59.00	55.00	59.00	39.00	26.00	31.00	53.00	53.00		18.00
2.00	Std. Deviation	0.68	0.00	0.79	0.65	0.68	0.61	0.84	0.52	0.34	0.75		0.30
	Mean	0.99	0.50	0.80	0.68	0.76	0.65	0.97	0.97	0.16	0.77		0.66
	Total N	58.00	12.00	59.00	55.00	59.00	39.00	26.00	31.00	53.00	53.00		18.00
	Std. Deviation	0.68	0.00	0.79	0.65	0.68	0.61	0.84	0.52	0.34	0.75		0.30
	Mean	0.00	0.00	0.01	0.09	0.46	0.04	-0.04	0.00	0.00	0.00	0.04	0.00
	Present N	42.00	10.00	42.00	42.00	25.00	1.00	4.00	41.00	41.00	27.00	1.00	40.00
3.00	Std. Deviation	0.02	0.01	0.04	0.08	0.24	.	0.08	0.01	0.00	0.00	.	0.01
	Mean	0.00	0.00	0.01	0.09	0.46	0.04	-0.04	0.00	0.00	0.00	0.04	0.00
	Total N	42.00	10.00	42.00	42.00	25.00	1.00	4.00	41.00	41.00	27.00	1.00	40.00
	Std. Deviation	0.02	0.01	0.04	0.08	0.24	.	0.08	0.01	0.00	0.00	.	0.01
	Mean	0.43	0.00	0.19	0.43	0.30	0.61	0.38	1.03	0.65	0.30	0.28	1.36
	Absent N	205.00	37.00	216.00	215.00	216.00	62.00	13.00	77.00	102.00	46.00	20.00	72.00
	Std. Deviation	0.75	0.00	0.42	0.64	0.52	0.61	0.18	1.38	0.84	0.63	0.17	1.58
	Mean	0.89	1.40	0.43	0.48	0.39	0.88	0.41	1.15	0.58	0.62	0.52	0.93
4.00	Present N	440.00	172.00	370.00	404.00	472.00	203.00	123.00	285.00	325.00	247.00	147.00	253.00
	Std. Deviation	0.96	1.17	1.76	0.87	0.71	0.93	0.32	1.29	0.81	0.86	0.65	0.94
	Mean	0.75	1.15	0.34	0.46	0.36	0.81	0.41	1.13	0.59	0.57	0.49	1.03
	Total N	645.00	209.00	586.00	619.00	688.00	265.00	136.00	362.00	427.00	293.00	167.00	325.00
	Std. Deviation	0.93	1.19	1.43	0.79	0.66	0.87	0.31	1.30	0.82	0.84	0.61	1.12
	Mean	0.13		0.10	1.04	0.24				0.30	0.27	0.38	
	Absent N	52.00		52.00	52.00	52.00				20.00	11.00	9.00	
	Std. Deviation	0.33		0.22	1.45	0.10				0.10	1.35	0.15	
	Mean	0.00		0.00	0.13	0.33				0.00			
5.00	Present N	8.00		8.00	8.00	8.00				2.00			
	Std. Deviation	0.00		0.00	0.10	0.00				0.00			
	Mean	0.11		0.08	0.92	0.25				0.27	0.27	0.38	
	Total N	60.00		60.00	60.00	60.00				22.00	11.00	9.00	
	Std. Deviation	0.31		0.21	1.39	0.10				0.13	1.35	0.15	
	Mean	0.73	0.78	0.21	0.31	0.47	0.77	1.07	0.90	0.29	1.15	0.96	0.86
6.00	Absent N	134.00	80.00	154.00	164.00	165.00	76.00	64.00	94.00	72.00	54.00	39.00	80.00

	Std. Deviation	0.54	0.48	0.46	0.46	0.55	0.55	0.51	0.44	0.34	0.47	0.53	0.43	
	Mean	0.91	0.97	0.69	0.58	0.41	0.96	1.12	0.99	0.29	0.84	0.77	0.99	
Present	N	296.00	203.00	327.00	327.00	327.00	143.00	127.00	208.00	180.00	133.00	103.00	218.00	
	Std. Deviation	0.61	0.67	1.00	0.82	0.40	0.59	1.89	0.63	0.38	0.46	0.50	0.67	
	Mean	0.85	0.91	0.53	0.49	0.43	0.89	1.10	0.96	0.29	0.93	0.82	0.95	
Total	N	430.00	283.00	481.00	491.00	492.00	219.00	191.00	302.00	252.00	187.00	142.00	298.00	
	Std. Deviation	0.60	0.62	0.89	0.73	0.46	0.58	1.57	0.57	0.36	0.49	0.51	0.61	
	Mean	0.35	0.46	0.13	0.34	0.26	0.44	0.60	0.61	0.35	0.44	0.53	0.75	
Absent	N	684.00	235.00	783.00	798.00	799.00	285.00	130.00	304.00	318.00	269.00	93.00	255.00	
	Std. Deviation	0.58	0.65	0.34	0.61	0.40	0.55	0.60	0.88	0.58	0.73	0.52	1.02	
	Mean	0.68	0.91	0.43	0.48	0.37	0.69	0.60	0.76	0.24	0.66	0.56	0.66	
Total	Present	N	2151.00	932.00	2256.00	2249.00	2307.00	1340.00	986.00	1488.00	1567.00	1440.00	620.00	1341.00
	Std. Deviation	0.78	0.96	1.01	0.73	0.55	0.80	0.97	0.91	0.48	1.30	0.62	0.72	
	Mean	0.60	0.82	0.35	0.44	0.34	0.64	0.60	0.74	0.26	0.62	0.56	0.67	
Total	N	2835.00	1167.00	3039.00	3047.00	3106.00	1625.00	1116.00	1792.00	1885.00	1709.00	713.00	1596.00	
	Std. Deviation	0.75	0.92	0.90	0.70	0.52	0.76	0.94	0.91	0.50	1.23	0.61	0.78	

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

Table 5.4.15: Time saved (in minutes) by Type of Connectivity due to Presence of PMGSY and non-PMGSY Roads (by Agro-Climatic Zones)

AgroClimaticZone	PMGSY Road	Market	Habitation	Village	Taluka	District	State	Theatre	Health	School	College	Vocational	Industries	
0.00	Mean	0.42	0.50	0.08	0.00				0.37				0.50	
	Present	N	6.00	6.00	6.00	6.00			6.00				2.00	
	Std. Deviation	0.09	0.00	0.20	0.00				0.22				0.00	
	Mean	0.42	0.50	0.08	0.00				0.37				0.50	
	Total	N	6.00	6.00	6.00	6.00			6.00				2.00	
	Std. Deviation	0.09	0.00	0.20	0.00				0.22				0.00	
1.00	Mean	0.08	0.04	0.12	0.11	0.08	0.07	0.08	0.09	0.10	0.09	0.19	0.13	
	Absent	N	352.00	367.00	367.00	367.00	157.00	55.00	135.00	124.00	158.00	25.00	15.00	106.00
	Std. Deviation	0.16	0.12	0.20	0.11	0.31	0.11	0.18	0.16	0.24	0.10	0.04	0.18	
	Mean	0.25	0.17	0.23	0.20	0.30	0.26	0.27	0.09	0.24	0.27	0.13	0.26	
	Present	N	1414.00	1450.00	1441.00	1449.00	954.00	709.00	979.00	961.00	1033.00	369.00	236.00	819.00
	Std. Deviation	0.23	0.21	0.20	0.16	0.20	0.21	0.23	0.15	0.24	0.20	0.15	0.22	

	Mean	0.22	0.15	0.21	0.18	0.27	0.25	0.25	0.09	0.22	0.25	0.14	0.25
Total	N	1766.00	1817.00	1808.00	1816.00	1111.00	764.00	1114.00	1085.00	1191.00	394.00	251.00	925.00
	Std. Deviation	0.23	0.20	0.20	0.16	0.23	0.21	0.23	0.15	0.24	0.20	0.14	0.22
	Mean	0.43	0.34	0.30	0.36	0.32	0.40	0.47	0.10	0.35			0.38
Present	N	59.00	59.00	58.00	59.00	39.00	34.00	36.00	53.00	53.00			18.00
2.00	Std. Deviation	0.19	0.25	0.28	0.19	0.24	0.17	0.13	0.16	0.21			0.12
	Mean	0.43	0.34	0.30	0.36	0.32	0.40	0.47	0.10	0.35			0.38
Total	N	59.00	59.00	58.00	59.00	39.00	34.00	36.00	53.00	53.00			18.00
	Std. Deviation	0.19	0.25	0.28	0.19	0.24	0.17	0.13	0.16	0.21			0.12
	Mean	0.00	0.01	0.08	0.24	0.04	-0.05	0.00	0.00	0.00	0.04		0.00
Present	N	42.00	42.00	42.00	42.00	1.00	4.00	41.00	41.00	27.00	1.00		40.00
3.00	Std. Deviation	0.02	0.03	0.07	0.11	.	0.10	0.01	0.00	0.00	.		0.01
	Mean	0.00	0.01	0.08	0.24	0.04	-0.05	0.00	0.00	0.00	0.04		0.00
Total	N	42.00	42.00	42.00	42.00	1.00	4.00	41.00	41.00	27.00	1.00		40.00
	Std. Deviation	0.02	0.03	0.07	0.11	.	0.10	0.01	0.00	0.00	.		0.01
	Mean	0.17	0.10	0.21	0.16	0.32	0.26	0.33	0.27	0.15	0.19	0.00	0.41
Absent	N	214.00	216.00	215.00	216.00	62.00	13.00	77.00	103.00	46.00	22.00	1.00	72.00
	Std. Deviation	0.25	0.18	0.21	0.20	0.18	0.10	0.30	0.27	0.19	0.11	.	0.30
	Mean	0.33	0.08	0.22	0.21	0.37	0.27	0.41	0.25	0.28	0.26	0.23	0.38
4.00 Present	N	482.00	483.00	404.00	483.00	203.00	123.00	286.00	325.00	247.00	155.00	44.00	254.00
	Std. Deviation	0.27	0.20	0.22	0.16	0.22	0.12	0.25	0.25	0.22	0.20	0.33	0.24
	Mean	0.28	0.09	0.21	0.19	0.36	0.27	0.39	0.25	0.26	0.25	0.22	0.39
Total	N	696.00	699.00	619.00	699.00	265.00	136.00	363.00	428.00	293.00	177.00	45.00	326.00
	Std. Deviation	0.27	0.19	0.22	0.18	0.22	0.12	0.26	0.26	0.22	0.20	0.32	0.25
	Mean	0.06	0.06	0.22	0.19	0.04			0.23	-0.27	0.27	0.17	
Absent	N	52.00	52.00	52.00	52.00	9.00			20.00	11.00	9.00	9.00	
	Std. Deviation	0.18	0.14	0.45	0.06	0.13			0.08	0.51	0.08	0.05	
	Mean	0.00	0.00	0.10	0.25				0.00				
5.00 Present	N	8.00	8.00	8.00	8.00				2.00				
	Std. Deviation	0.00	0.00	0.09	0.00				0.00				
	Mean	0.05	0.05	0.20	0.20	0.04			0.20	-0.27	0.27	0.17	
Total	N	60.00	60.00	60.00	60.00	9.00			22.00	11.00	9.00	9.00	
	Std. Deviation	0.17	0.13	0.42	0.06	0.13			0.10	0.51	0.08	0.05	
	Mean	0.33	0.09	0.18	0.26	0.37	0.49	0.44	0.18	0.50	0.45		0.43
6.00 Absent	N	145.00	165.00	164.00	165.00	76.00	65.00	94.00	72.00	54.00	39.00		80.00
	Std. Deviation	0.22	0.20	0.18	0.17	0.23	0.13	0.17	0.17	0.15	0.14		0.16
Present	Mean	0.42	0.28	0.25	0.24	0.45	0.45	0.45	0.17	0.41	0.39	0.36	0.45

	N	296.00	327.00	327.00	327.00	143.00	127.00	209.00	180.00	133.00	103.00	26.00	218.00
	Std. Deviation	0.19	0.27	0.25	0.17	0.15	0.18	0.17	0.22	0.17	0.17	0.17	0.16
	Mean	0.39	0.22	0.22	0.25	0.42	0.46	0.45	0.17	0.44	0.41	0.36	0.44
Total	N	441.00	492.00	491.00	492.00	219.00	192.00	303.00	252.00	187.00	142.00	26.00	298.00
	Std. Deviation	0.21	0.26	0.23	0.17	0.18	0.16	0.17	0.21	0.17	0.16	0.17	0.16
	Mean	0.15	0.07	0.16	0.16	0.20	0.29	0.25	0.18	0.17	0.28	0.17	0.30
Absent	N	763.00	800.00	798.00	800.00	304.00	133.00	306.00	319.00	269.00	95.00	25.00	258.00
	Std. Deviation	0.22	0.16	0.23	0.16	0.29	0.23	0.27	0.21	0.30	0.19	0.06	0.26
	Mean	0.29	0.17	0.23	0.21	0.33	0.29	0.32	0.13	0.26	0.28	0.17	0.31
Total	N	2307.00	2375.00	2286.00	2374.00	1340.00	997.00	1551.00	1568.00	1493.00	628.00	306.00	1351.00
	Std. Deviation	0.24	0.23	0.21	0.16	0.20	0.21	0.24	0.20	0.23	0.20	0.20	0.23
	Mean	0.25	0.14	0.21	0.20	0.30	0.29	0.31	0.14	0.25	0.28	0.17	0.31
Total	N	3070.00	3175.00	3084.00	3174.00	1644.00	1130.00	1857.00	1887.00	1762.00	723.00	331.00	1609.00
	Std. Deviation	0.25	0.22	0.22	0.17	0.23	0.21	0.24	0.20	0.25	0.20	0.19	0.23

(Note: 0- Not known, 1-Plains, 2 – Arid, 3 -Undulating Plains, 4- Hills, 5 – Terai, 6 – Plateau)

Appendix 18: Perception of Improvement in Access to Facilities for PMGSY and non-PMGSY based on HH Data

a. Access to health facilities * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Access to health facilities	Decreased_deteriorated significantly	0	11	11
	Decreased somewhat	1	41	42
	No change	134	379	513
	Improved or increased somewhat	84	757	841
	Improved or increased statistically significantly	76	708	784
Total		295	1896	2191

b. Visits to the villages by ANMS_Nurses_Doctors * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Visits to the villages by ANMS_Nurses_Doctors	Decreased_deteriorated significantly	0	11	11
	Decreased somewhat	1	58	59
	No change	140	425	565
	Improved or increased somewhat	99	932	1031
	Improved or increased statistically significantly	55	473	528
Total		295	1899	2194

c. Availability of Emergency services like 108_Police * PMGSYRoadPresent

Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Availability of Emergency services like 108_Police	Decreased_deteriorated significantly	0	16	16
	Decreased somewhat	1	43	44
	No change	135	403	538
	Improved or increased somewhat	88	842	930
	Improved or increased statistically significantly	67	600	667
Total		291	1904	2195

d. Visits by teachers and government officials * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Visits by teachers and government officials	Decreased_deteriorated significantly	0	26	26
	Decreased somewhat	1	48	49
	No change	145	473	618
	Improved or increased somewhat	94	790	884
	Improved or increased statistically significantly	52	556	608
Total		292	1893	2185

e. Visits by our friends and relatives * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Visits by our friends and relatives	Decreased_deteriorated significantly	0	20	20
	Decreased somewhat	2	57	59
	No change	133	502	635
	Improved or increased somewhat	99	787	886
	Improved or increased statistically significantly	59	525	584
Total		293	1891	2184

f. Regularity of children attending schools located nearby * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Regularity of children attending schools located nearby	Decreased_deteriorated significantly	0	28	28
	Decreased somewhat	0	73	73
	No change	129	395	524
	Improved or increased somewhat	110	820	930
	Improved or increased statistically significantly	49	580	629
Total		288	1896	2184

g. Regularity of children attending colleges located nearby * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	

Regularity of children attending colleges located nearby	Decreased_deteriorated significantly	4	52	56
	Decreased somewhat	3	78	81
	No change	139	435	574
	Improved or increased somewhat	111	802	913
	Improved or increased statistically significantly	36	524	560
Total		293	1891	2184

h. Traffic from and to our village * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Traffic from and to our village	Decreased_deteriorated significantly	5	26	31
	Decreased somewhat	2	7	9
	No change	121	479	600
	Improved or increased somewhat	102	253	355
	Improved or increased statistically significantly	20	73	93
Total		250	838	1088

i. Safety of Travel to and from our village * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Safety of Travel to and from our village	Decreased_deteriorated significantly	5	39	44
	Decreased somewhat	28	186	214
	No change	144	455	599
	Improved or increased somewhat	81	745	826
	Improved or increased statistically significantly	35	467	502
Total		293	1892	2185

j. Economic activity in our village * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Economic activity in our village	Decreased_deteriorated significantly	1	23	24
	Decreased somewhat	5	83	88
	No change	133	446	579
	Improved or increased somewhat	115	867	982

	Improved or increased statistically significantly	38	476	514
	Total	292	1895	2187

k. Access to markets_mandis for agriculture produce * PMGSYRoadPresent

Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Access to markets_mandis for agriculture produce	Decreased_deteriorated significantly	0	26	26
	Decreased somewhat	2	70	72
	No change	133	411	544
	Improved or increased somewhat	116	904	1020
	Improved or increased statistically significantly	42	476	518
	Total	293	1887	2180

l. Access to markets _mandis for animal husbandary_dairy_fishing_poultry *

PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Access to markets _mandis for animal husbandary_dairy_fishing_poultry	Decreased somewhat	2	4	6
	No change	122	466	588
	Improved or increased somewhat	108	263	371
	Improved or increased statistically significantly	18	90	108
	Total	250	823	1073

m. Price realization of agricultural produce * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Price realization of agricultural produce	Decreased_deteriorated significantly	0	14	14
	Decreased somewhat	1	52	53
	No change	133	424	557
	Improved or increased somewhat	96	699	795
	Improved or increased statistically significantly	41	472	513
	Total	271	1661	1932

n. Shift in agricultural practices or cropping pattern * PMGSYRoadPresent

Crosstabulation

		Count		Total
		PMGSYRoadPresent Absent	Present	
Shift in agricultural practices or cropping pattern	Decreased somewhat	0	3	3
	No change	142	478	620
	Improved or increased somewhat	89	243	332
	Improved or increased statistically significantly	19	98	117
Total		250	822	1072

o. Access to construction and infrastructure related jobs * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent Absent	Present	
Access to construction and infrastructure related jobs	Decreased somewhat	3	5	8
	No change	127	460	587
	Improved or increased somewhat	106	273	379
	Improved or increased statistically significantly	14	86	100
Total		250	824	1074

p. Number of individuals who travel to a nearby town or city daily jobs * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent Absent	Present	
Number of individuals who travel to a nearby town or city daily jobs	Decreased_deteriorated significantly	0	24	24
	Decreased somewhat	3	68	71
	No change	144	466	610
	Improved or increased somewhat	110	871	981
	Improved or increased statistically significantly	36	465	501
Total		293	1894	2187

q. Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals * PMGSYRoadPresent Crosstabulation

		Count		Total
		PMGSYRoadPresent Absent	Present	
Number of individuals who travel to a nearby town or city daily recreation_social functions_festivals	Decreased somewhat	3	0	3
	No change	127	473	600
	Improved or increased somewhat	104	254	358

	Improved or increased statistically significantly	16	96	112
	Total	250	823	1073

r. Number of motor vehicles owned by our HH * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Number of motor vehicles owned by our HH	Decreased_deteriorated significantly	0	9	9
	Decreased somewhat	3	30	33
	No change	150	375	525
	Improved or increased somewhat	107	558	665
	Improved or increased statistically significantly	24	212	236
	Total	284	1184	1468

s. Maintenance cost for motor vehicle * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Maintenance cost for motor vehicle	Decreased_deteriorated significantly	11	130	141
	Decreased somewhat	44	263	307
	No change	143	420	563
	Improved or increased somewhat	63	661	724
	Improved or increased statistically significantly	31	410	441
	Total	292	1884	2176

t. New planned economic activities in the HH * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
New planned economic activities in the HH	Decreased_deteriorated significantly	7	43	50
	Decreased somewhat	6	92	98
	No change	180	565	745
	Improved or increased somewhat	69	727	796
	Improved or increased statistically significantly	30	441	471
	Total	292	1868	2160

u. Information about actual price of agri goods and milk * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Information about actual price of agri goods and milk	Decreased_deteriorated significantly	5	8	13
	Decreased somewhat	23	39	62
	No change	132	478	610
	Improved or increased somewhat	80	216	296
	Improved or increased statistically significantly	10	78	88
Total		250	819	1069

v. The cases of HHs which used to migrate temporarily * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
The cases of HHs which used to migrate temporarily	Decreased_deteriorated significantly	0	1	1
	Decreased somewhat	2	5	7
	No change	154	503	657
	Improved or increased somewhat	79	239	318
	Improved or increased statistically significantly	14	65	79
Total		249	813	1062

w. Instances of landslides_soil disposal_soil erosion * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Instances of landslides_soil disposal_soil erosion	Decreased_deteriorated significantly	0	24	24
	Decreased somewhat	1	68	69
	No change	142	507	649
	Improved or increased somewhat	115	829	944
	Improved or increased statistically significantly	35	450	485
Total		293	1878	2171

x. Impact on environment through pollution of vehicular movement * PMGSYRoadPresent Crosstabulation

Count

		PMGSYRoadPresent		Total
		Absent	Present	
Impact on environment through pollution of vehicular movement	Decreased_deteriorated significantly	4	4	8
	Decreased somewhat	21	15	36
	No change	172	597	769
	Improved or increased somewhat	41	126	167
	Improved or increased statistically significantly	12	74	86
Total		250	816	1066

y. Safe to use the after PMGSY road has been built * PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Safe to use the after PMGSY road has been built	Decreased somewhat	1	3	4
	No change	170	584	754
	Improved or increased somewhat	70	154	224
	Improved or increased statistically significantly	9	76	85
Total		250	817	1067

z. Law and order situation_crime rate in your and neighbouring village *
PMGSYRoadPresent Crosstabulation
Count

		PMGSYRoadPresent		Total
		Absent	Present	
Law and order situation_crime rate in your and neighbouring village	Decreased somewhat	0	3	3
	No change	170	585	755
	Improved or increased somewhat	69	149	218
	Improved or increased statistically significantly	11	83	94
Total		250	820	1070

Appendix 19: HH Questionnaire including Perceptions and Opinions about Access and Other Variables

PMGSY House Hold Questionnaire

Investigator Email id	Interview starting time	Questionnaire ID
Name of Investigator: _____ Signature: _____		
Time of starting interview :	Hours -----	Minutes -----

Background Information

Sr. No	Identification	Response	
1.	Name of the respondent		
2.	Gender	Male	Female
3.	Age in completed years		
4.	Highest education level in the family		
5.	State		
6.	District		
7.	Block		
8.	Village		
9.	Contact No., If any		
10.	Building Name and No.		
11.	Street Name/Society Name/ Landmark		

12.	Area				
13.	Type of Family				
14.	List of Family Members	Gender	Age	Education	Current Occupation

15.	What are the major occupation of your HH ?	Tick the Valid Option	Annual Family Income
	Own Cultivation		
	Agriculture wage labor		
	Non Agriculture wage labor		
	Dairy Business		
	Trade/ Business		
	Salaried Employment		
	Pension		
	Rent		
	Dividend		
	Student		
	Home Maker		

16.	If own cultivation, How much land is own by your house hold?	Number	Unit
17.	If Animal husbandary/Dairy business, how much liter milk is sold by your house hold?	_____ Ltr / Week	
18.	If Poultry/Fishing business, how much income is generated	_____ Rs/Month	
19.	What is the religion of the head of the HH? (Tick The valid Option)		
	Hindu		Jain
	Muslim		Jewish
	Christin		Parsi/ Zorostrian
	Sikh		No religion
	Buddhist/ Neo Buddhist		Don't Know
	Declined to respond		Other Specify
20.	What is the caste or tribe of the head of the HH?		
	Scheduled Caste		Scheduled Tribe
	OBC		General
	Don't Know		Declined to respond
21.	Q 20 Type of House	Kutcha House	Semi Pucca Pucca House
22.	What is the total size of the house? (In acres)	Approx current value of the house (In Rs.)	
23.	Q 21 Does this HH have a BPL card?	Yes	No DK/CS

Vehicle Ownership

24.	Which of the following vehicles does your HH own?		
	Types Of Vehicle	Tick The Vehicle you own	No. of vehicle How many years back was it purchased? (In case of multiple units, mention the last purchase)
	Bicycle		
	2 Wheeler		

Car					
Jeep					
SUV					
Tractor					
3 Wheeler (Passenger)					
3 Wheeler (Goods)					
Light motor Vehicle (Goods)					
None					
25.	Which of the following assets does your HH own?				
Assets	Tick	Quantity	Assets	Tick	Quantity
Television			Tractor		
Computer/Laptop			Tillers/Hand Tillers		
Hand pump			Irrigation Pump Sets		
Radio			Threshers		
Refrigerator			Winnowers		
piped water supply			Bailing Machines		
Gas connection			Machinery used for other economic activity (HHs)		
farm animals			Any other Heavy Equipment		
milch animals			Other,Specify		

Agricultural Profile

26.	Now we will try to understand your agricultural activities.		
Details	Crop 1	Crop 2	Crop 3
Mention the crops that you cultivate.			
Area under cultivation	Number _____	Number _____	Number _____
	Acres/ Hectare/ Sq Yard	Acres/ Hectare/ Sq Yard	Acres/ Hectare/ Sq Yard
Annual Income from this crop in Rs.			
27.	Is there any other economic activity other than agriculture is include in your HH		

Yes		No	
27 (a) If the answer to Q27 is yes, please select the economic activities from below :-			
Income from handicraft		Wages earned by working outside village (Wages and salaries to faraway village or Block HQ, District Hq)	
Income from animal husbandary/poultry/fishing		Income earned by migrant	
Income from agricultural wages within the village or nearby villages		Income from other income, transfer money orders, remittances, pensions	
Any Other (Please Specify)			

28. Now we will try to understand about your access to various facilities														
Tick the facilities available	Markets	Habitat ion of higher order	Village of higher order	District head quarter	Taluka head quarter	State highway at its nearest point	The atre /Ma ll	Health Centre	School	College	Vocational Training Centre	Industrial Cluster	Mandi / AP MC	Other ,S pecify:
Tick the facilities available														
Village/ Town/City														
Distance in km														
PMGSY road service is available														
Mode of Transport used to reach at Bus stand/Pic														

k up Stand Walk/Bi ke/Scoot er/Bicycl e/Tractor 3 wheeler/ Pickups Van/Car/ Bus/ Auto- rickshaw /Other,S pecify														
Mode of Transpor t used to reach at Facility Walk/Bi ke/Scoot er/Bicycl e/Tractor 3 wheeler/ Pickups Van/Car/ Bus/ Auto- rickshaw /Other,S pecify														
Number of person used this facility in your house hold														
Number of time this facility used by person in your house hold														
Time it used to take earlier														
Time is used to														

take currently														
Cost of travel before PMGSY road (per Person)														
Cost of travel Currentl y PMGSY road (per Person)														
Has there been better accessibi lity to the access points because of PMGSY road														

Perceptions and Opinions

29.	<p>Describe the PMGSY Road that has been built and also the year in which it has been built. Now ask the following questions with respect to the PMGSY Road described.</p> <p>Answer should be in terms in terms of Improved or decreased</p>				
Statement	Improved or increased statistically significantly	Improved/increased somewhat	No change	Decreased somewhat	Decreased/deteriorated statistically significantly may be used
The access to health facilities for our village due to the PMGSY Road has < Tick the applicable option >					
Visits to the village by ANMs/Nurses/Doctors due to the PMGSY Road has < Tick the applicable option >					
Availability of Emergency Services like 108, Police etc. due to the PMGSY Road < Tick the applicable option >					
Visits by Teachers and government officials to our village due to the PMGSY Road					

has < Tick the applicable option>					
Visits by our friends and relatives to our village/house due to the PMGSY Road has < Tick the applicable option >					
Regularity of the children of our village/house attending schools (Secondary/Higher Secondary) located in nearby locations due to the PMGSY Road has < Tick the applicable option >					
Regularity of the children of our village/house are attending Colleges located in nearby locations due to the PMGSY Road has < Tick the applicable option >					
The traffic from and to our house has increased due to the PMGSY Road					
After the PMGSY road has been built, Safety of Travel (ie Less Accidents) to and from					

our village has < Tick the applicable option >.					
After the PMGSY Road has been built, economic activity in our house/village has < Tick the applicable option >					
The access to markets / mandi for selling the agricultural produce from our village has < Tick the applicable option >					
The access to markets / mandi for selling the animal husbandary/dairying/fishing/poultry from our house/village has < Tick the applicable option>					
After the PMGSY road has been built price realization of the agricultural produce has <Tick the applicable option>					
After the PMGSY road has been built shift in agricultural practices or cropping pattern has <Tick the applicable option>					

Access to construction and infrastructure related jobs for our house has <Tick the applicable option>					
After the PMGSY road has been built the number of individuals from our house who travel to a nearby town or city daily for a job has <Tick the applicable option >					
After the PMGSY road has been built the number of individuals from our house who travel to a nearby town or city daily recreation, social functions and festivals has <Tick the applicable option>					
After the PMGSY road has been built the the number of motor vehicles owned in our HH has <Tick the applicable option>					
After the PMGSY road has been built the maintenance cost for motor vehicle has <Tick the applicable option>					

After the PMGSY road has been built, the new planned economic activities in the HH has					
After the PMGSY road has been built, information about know the actual price of agricultural goods and milk has					
After PMGSY road has been built, the cases of members in HHs, who used to <i>migrate</i> temporarily has <Tick the applicable option>					
After PMGSY road has been built, instances of landslides/soil disposal/soil erosion has <Tick the applicable option>					
After PMGSY road has been built, do you think that there is impact on environment through pollution of the vehicular movement <Tick the applicable option>					

Do you think that it is safe to use the road after PMGSY road has been built.<Tick the applicable option>						
After the PMGSY road has been built, do you think that the law and order situation/crime rate in your and neighbouring village has <Tick the applicable option>						
After the PMGSY road has been built, feeling of connectivity to nearby villages has <Tick the applicable option>						
After the PMGSY road has been built, feeling of connectivity to nearby major centre has <Tick the applicable option>						
30.	If the answer is No change or Decrease somewhat or Decreased/deteriorated statistically significantly may be used of above statement (Are you think that it is safe to use the road after PMGSY	Road quality is not good		There is more traffic on that road		
		Road is not well maintained		The road is conjusted		
		There is no street light		There is no footpath		

	road has been built) than cite the reason for the same				
31.	What % of the village people are actually benefited from this PMGSY road?				
32.	What is the overall cost of travel for your HH?				
33.	What do you think can help improve the connectivity further	Improve type of road of other roads from the village		Better design for monsoon (All weather usage)	
		Maintenance of roads		Wider roads	
		Diversion of Traffic		Material of Road Construction	
		Create other roads for through		Specify (Others)	
		Reduce congestion			
		Provide footpath			