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Role of Government Employment Generation Schemes to Sahariya Tribe's Economic Development in Rajasthan

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Abstract

The Sahariya tribe is one of the most backward tribes of Rajasthan, it lives mainly in the Kishanganj and Shahabad blocks located in the north-eastern part of the Baran district in the state. Their habitat is located in remote forest areas, barren and rocky land. Even after 74 years of India's independence, this tribe is currently living like a primitive society. The main objective of this paper is to examine the effects of various government employment-oriented schemes operated in connection with the economic development of the tribes in the context of the economic development of the Sahariya tribe. This study is based on primary data of 200 Sahariya families. Random selection of these Sahariya tribe families has been done through Google Forms. This paper examines which of the various schemes of employment generation schemes are doing better for the economic development of the Sahariya tribe. The major findings of this study are that Sahariya tribe of Shahabad and Kishanganj have got the most benefit from MGNREGA out of various employment programs and MGNREGA is contributing to raising their standard of living.

Keywords : Sahariya Tribes, Economic Development, Employment Promotion Schemes, Special Scheme, Employment Training Program

1. Introduction

The word 'tribe' refers to a society or part of a society whose members generally belong to the same lineage in terms of customs, faith and leadership etc. Most of the world's tribes represent the under privileged, they live in forest areas and their livelihood depends on forest products and animal husbandry. Due to its nomadic tendency, most of these tribe's roam from one forest to another. Article-366 (25) of the Constitution of India mentions Scheduled Tribes (ST) as communities that are scheduled under Article-342 of the Constitution. More than seven hundred tribal communities in India have been notified as 'Scheduled Tribes' under Article-342 of the Constitution. Some of these communities are characterized by primitive forms. These primitive groups have characteristics of dwindling or stagnant population, low level of literacy, pre- agricultural level technology and

economic backwardness. All these groups are economically the most vulnerable sections of society. Even after 74 years of independence, most of the people of such primitive communities have not achieved an adequate level of educational, economic and social progress and their health index remains very low. The Ministry of Tribal Affairs, Government of India has identified 75 such primitive communities inhabited by 18 states including Rajasthan and one Union Territory, and categorized them as Particularly Vulnerable Tribal Groups(PVTGs). The Sahariya primitive community is one such particularly vulnerable tribal group (PVTG) which is inhabited in the states of Madhya Pradesh, Rajasthan, Uttar Pradesh and Chhattisgarh. Various Employment Generations Schemes in Sahariya Tribal area's such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA), Special Scheme and Employment Training Programme have been taken in this study.

Dhir (2015) gives a picture of Indian scheduled tribes that a large proportion of tribal communities in India are still dependent on forests, as well as agriculture, for their livelihoods. Across the country, over the period between 2005 and 2011, there was an 8.06 percent increase in scheduled tribe land holdings. Marginal land holdings during this period increased from 49.48 per cent to 53.9 per cent while small land holdings decreased from 25.62 per cent to 23.99 per cent, similarly semi-medium holdings 16.44 per cent to 14.82 per cent, medium holdings 7.38 per cent to 6.32 per cent and also large holdings were decreased from 1.08 per cent to 0.96 per cent.

Employment is the main criterion for the growth of any economy because employment leads to economic growth. The schemes related to employment for the vulnerable group need to be implemented properly. MGNREGA is one such plan by the Government of India which has made a major contribution to the development of the Sahariya tribe. In this study, three major schemes of employment generation are taken and an attempt has been made to know whether Sahariya tribal are aware of these schemes and how much benefit they have received from these schemes. These schemes are Mahatma Gandhi National Rural Employment Guarantee Scheme, Special Plan and Employment Training Programme.

1.1 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

It is clear from the Table-1.1 that the MGNREGA plays an important role to generate employment not only in the country but also is state of Rajasthan. It also explains that the Rajasthan state percentage is more than the India's employment to STs during the period from 2016-17 to 2020-21.

1.2 Special Plan

With a view to providing additional employment in Sahariya tribal areas, a scheme was started to provide employment of 100 additional days i.e. 200 days

for Sahariya's in the MGNREGA scheme from the year 2011-12, which is referred to as special plan.

1.3 Employment Training Programme

The main objective of this program is to create employment through self-employment in Sahariya regions. Under this scheme, the Sahariya's are trained for self-employment by training them in various fields' like- katai, weaving, furniture making and bicycle repair etc. During the training period, in addition to free education, they are provided travel allowance for commuting from home to the training site. The scheme is a family welfare scheme as it targets male and female sections of the Sahariya family. Apart from this, many community based benefit programmes are also run for upliftment of Sahariya tribe.

2. Review of Literature

Many attempts have been made to investigate the relationship between MGNREGA and rural development (Narayana and Das, 2014, Jandu, 2015, Dreze and Oldiges 2007). Pankaj and Tanka (2010) examined the plan in context to women empowerment. Ranjan Puhan (2016) describes that the present policies of Indian government are good but the implementation level is not as it needed. The study suggests that strict implementation of reservation and enhancement of 7.5% of reservation. Mathur and Bhati (2016) examine MGNREGA role for employment generation and finds that no household in tribal of the village completed 100 days' employment programme.

3. Methodology

The objective of the paper is to compare the information and benefit from the schemes in Rajasthan State. In this regard, the Sahariya dominated blocks-Kishanganj and Shahabad are selected. A primary questionnaire has been compiled and through stratified random sampling method, 20 families each from the selected five villages of each block, have been selected. The statistical tools such as percentage method, analysis of variance (ANOVA) have been used to obtain results for the selected 200 families.

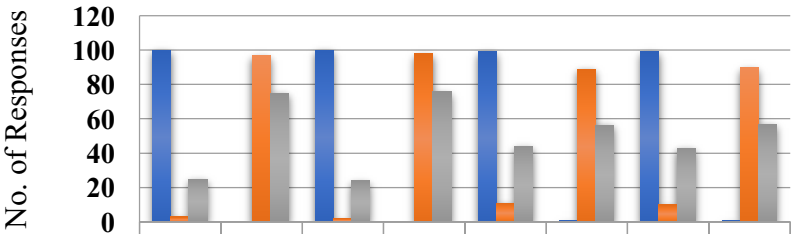
4. Results and Discussion

Various schemes functioned for the socio-economic development of Sahariya primitive community in Rajasthan can be classified into three categories-schemes for MGNREGA, special plan and employment training programme. All these schemes are being supervised by Sahariya Project Officer, Shahabad under the direction of Tribal Area Development Department, Udaipur, Government of Rajasthan. The following results have been obtained by questions about the information and benefits of all these schemes to the targeted respondents.

Information and Benefit from the Schemes:-

It can be drawn from figure 1.1 that information of MGNREGA and its benefits is accessible to Sahariya's of both the blocks of Kishanganj and Shahabad. Shahabad Sahariya tribes have also benefited more than Kishanganj from the Special plan and employment training programme. So it can be concluded that MGNREGA is the most important scheme, which is being benefited by the Sahariya tribe of Kishanganj and Shahabad.

Figure 1.1 Position of Employment Genration Schemes in Sahariya Tribal Area



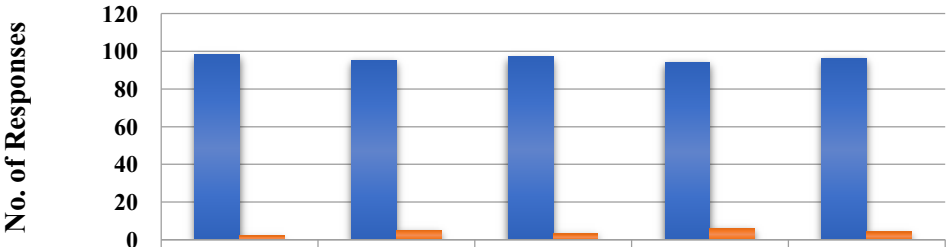
	Kishanganj (100)				Shahabad (100)			
	Information		Benefits		Information		Benefits	
	Yes	No	Yes	No	Yes	No	Yes	No
MGNREGA	100	0	100	0	99	1	99	1
Special Plan	3	97	2	98	11	89	10	90
Employment Training Programme	25	75	24	76	44	56	43	57

Table 1.2 describes one-way variance of analysis and it shows that there is no significantdifference between Shahabad and Kishanganj block regarding MGNREGA information and the benefits to Sahariya tribe. While special plan and employment training programs information and benefits in Shahabad and Kishanganj have significant difference.Shahabad Sahariya tribes are more informative and more benefited from the employment generation schemes than the Kishanganj Sahariya tribes.

5. Impact of the Schemes

According to the information received of the 200 respondents of the Sahariya tribe dominant blocks Kishanganj and Shahabad about employment-related which they were asked such as whether the level of employment from these schemes increased ? Has your economic situation improved ? Have you got a fair wage rate ? Have you got rid of exploitation ? Has your standard of living improved ?

Figure 1.2 Impact of Employment Generation Schemes on Sahariya Tribe in Kishanganj Tehsil



	Availability of Employment	Economic Position	Wage Rate	Security from Exploitation	Life Standard
Improve	98	95	97	94	96
No Change	2	5	3	6	4

According to information received from the tribes of Kishanganj and Shahbad blocks belonging to Sahariya, 95% of the tribal's accepted that employment schemes have great employment utility, their economic condition has improved, wage rate has also improved, they have got security from exploitation and their standard of living has improved. The tribal's of both the blocks have got the benefit of the employment government scheme as clear in figure 1.2 and 1.3.The most important thing is that most of the Sahariya tribe people got benefit from the MGNREGA.

Figure 1.3 Impact of Employment Generation Schemes on Sahariya Tribe in Shahabad Tehsil

	Availability of Employment	Economic Position	Wage Rate	Security from Exploitation	Life Standard
Improve	96	94	94	94	94
No Change	4	6	6	6	6

6. Conclusion

In this paper, three major schemes of the government are taken into consideration. Information about all three schemes and the benefits received from them has been gathered from the blocks dominated by Sahariya tribes. The findings suggest that government employment schemes play a major role in improving the living standard of these tribal's. MGNREGA, out of the three selected schemes, has proven to be the most important scheme as the information and benefits received from it are contributing a lot in the development of these tribal's. The information and benefits regarding the other two schemes are available in a very limited amount. Thus, it would be appropriate to say that the government needs to improve the existing scheme so that they can join the mainstream and contribute in the race of development.

References

Dhir, Rishabh Kumar (2015). Indigenous Peoples in the World of Work in Asia and the Pacific, A Status Report, International Labour Office – Geneva: ILO, 2015.

Dreze, J. and Oldiges, C. 2007. How is NREGA Doing? *Information from Ministry of Rural Development Website (*www.nrega.nic.in *)*, New Delhi.

Jandu, Navjyoti 2008. Employment Guarantee and Women's Empowerment in Rural India, see *http://*www.righttofoodindia.org.

Mathur Meera and Prerna Bhati, 2017. A Study on MGNREGA employment generation for tribal and schedule caste of Rajasthan, International Journal of Current Research, 9, (03), 47731-47735.

Narayanan, Sudha 2008. Employment Guarantee, Women's Work and Childcare, *Economic and Political Weekly*, 1 March 2008:10–13.

Pankaj, Ashok and Rukmini Tankha 2009. Women's Empowerment through Guaranteed Employment, *Institute for Human Development*, Delhi.

Ranjan Puhan, R. (2016). *Impact of Unemployment and Education On Tribal Families and Youth- Policies and Issues on Indian Government*, European Journal of Social Sciences Studies. *1*(1), 21–40.

Appendix

Table 1.1: Employment Generated to ST's in India & Rajasthan to MGNREGA (In Corers)

S. No.	Financial Year	Total person days		Employment generatedto STs		Percentage	
		India	Rajasthan	India	Rajasthan	India	Rajasthan
01.	2016-17	235.64	25.97	41.52	5.79	17.62	22.31
02.	2017-18	233.74	23.98	40.88	5.15	17.49	21.49
03.	2018-19	267.96	29.42	46.68	6.57	17.42	22.32
04.	2019-20	265.35	32.87	49.12	7.27	18.51	22.13
05.	2020-21	389.29	46.06	69.72	10.02	17.91	21.76

Data Source: *MGNREGA, Physical Progress, Ministry of Rural Development, Govt. of India.*

Table 1.2: One Way Analysis of Variance of Information and Benefit from the Schemes

Schemes	Variable	Item	Sum of Squares	df	Mean Square	F	Sig.
MGNREGA	Information	Between Groups	0.005	1	0.005	1	0.319
		Within Groups	0.99	198	0.005		
		Total	0.995	199			
	Benefit	Between Groups	0.005	1	0.005	1	0.319
		Within Groups	0.99	198	0.005		
		Total	0.995	199			
Special Plan	Information	Between Groups	0.32	1	0.32	4.989	0.027
		Within Groups	12.7	198	0.064		
		Total	13.02	199			
	Benefit	Between Groups	0.32	1	0.32	5.781	0.017
		Within Groups	10.96	198	0.055		
		Total	11.28	199			
Employment Training Programme	Information	Between Groups	1.805	1	1.805	8.237	0.005
		Within Groups	43.39	198	0.219		
		Total	45.195	199			
	Benefit	Between Groups	1.805	1	1.805	8.36	0.004
		Within Groups	42.75	198	0.216		
		Total	44.555	199			

Financial Inclusion and Women Empowerment through SHGs in Jaipur District of Rajasthan

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Abstract

The present study aims to examine the impact of micro credit through SHGs on women empowerment. Data was collected from 150 respondents who joined SHGs (beneficiaries) and 50 respondents who did not join the SHGs (non-beneficiaries) through a household survey using structured questionnaires in the Jaipur District of Rajasthan. The information regarding women's participation in decision-making and awareness level on social and political issues were also collected to assess the impact of SHGs membership on their empowerment. A logistic regression analysis has been applied to investigate the factors affecting women's participation in SHGs, access to informal credit, economic status, and political and economic decision-making. The study reveals that the majority of women participated in SHGs for economic independence, income-generation activities, and social contacts. SHGs membership provided a credit supplement for poor people, deprived groups of society, and women. The study concludes that there is a positive change in political, social, and economic terms on women empowerment. They make people economically empowered and reduce their dependency on moneylenders and non-institutional sources.

1. Introduction

In the aftermath of nationalization, the country witnessed an expansion in the banking sector into the under-banked and unbanked regions, albeit, the rural areas did not experience a decline in their dependence on private money lenders for their credit needs. The situation started to become worse as banks turned from rural to urban areas focusing on liquidity and profitability. The relative decline in the commercial banking network and operations in rural areas went counter to the prime objective of financial inclusion and proved a major obstacle to faster and more inclusive growth. The growth of Micro Finance in India is not ad-hoc in nature. It is a reaction to exploitation linked to the informal lending system and the failure of the institutional system. According to an estimate, more than one-third of the credit required in rural areas is met out by informal sources (private money lenders) which charge exorbitant interest rates ranging from 20% to 36% per annum. It is the economic exploitation of the underprivileged countryside people which is a hurtful injustice and a formidable challenge for sustainable growth.

Many flagship schemes have been launched by the government of India to promote financial inclusion in the country (table 1). The number of bank branches in urban, semi-urban, and metropolitan areas has significantly increased in the Indian context of financial inclusion since liberalization (table 2). However, in

India today, a considerable portion of the population lacks access to financial products and services. The availability of basic banking services is a pre-requisite for the growth of the rural economy but there has been low access to credit and financial services in rural areas. The financial system has been weak and unable to reach the underprivileged and needy i.e. formal banking institutions have been unable to provide financial services to these people. Therefore, the formal banking system needs to be supplemented by the informal banking system. That is why the concept of micro credit through SHGs became more popular. The self-help groups are mutually formed groups and the members of the self-help group have the same common financial problems thus the formation of this group takes place to face and solve common financial problems. Self-help groups have a common interest of the members which is to uplift the standard of living and raise the current social and economic conditions of its members.Microfinance has distinguished itself as a key driver of rural development among the many government-sponsored programs and through SHGs it is a powerful tool for generating public awareness eradicating poverty, empowering women, and changing the attitude and perception of society which ultimately leads to the country's sustained growth.

In India, SHGs date back to 1972, when the "Self-Employed Women's Association (SEWA)" was first established. Self-organizational initiatives were made in the past, but they were not significant. For instance, the Textile Labor Association (TLA) of Ahmedabad established a women's wing in 1954 to train the women of the families of mill employees in skills of knitting and sewing, etc. Microfinance came into existence after the establishment of Grameen Bank in Bangladesh in 1983. Under the model of Microfinance promoted by the Grameen Bank, women borrowers were organized into Self-Help Groups (SHGs), and SHGs were provided finance for their activities to empower the women. In India, the beginning of microfinance initiatives started with the Self Help Group (SHG) Bank Linkage Program (SBLP) in 1992 sponsored by NABARD. In this program, SHGs were formed and provided financial assistance. Apart from NABARD, Commercial Banks, Regional Rural Bank (RRB), Cooperative Banks and Non-Banking Financial Companies (NBFCs) also provide financial assistance to the SHGs.

Self-help groups are controlled informal groups of people who have the same social and economic background and aim to collectively perform a particular task to achieve common purposes. "Self Help Groups are informal and voluntary institutions of people who have a common objective to make their members self-reliant, and self-confident, and give them a sense of self-security. Women masses and members are specifically considered. Thus, women members of Self Help Groups are specially taken care of. Self Help Groups can also be rightly called Women's Movements throughout the country. Self Help Groups bring the poor of the rural areas and the women population of India under formal financial

institutions. This promotes and expands financial inclusion in the economy. Thus, Self Help Groups contribute to financial inclusion of rural areas which increases savings and loans capacity of the people." Even though not all members of the self-help groups (SHGs) are direct borrowers of the microcredit, the microfinance program through these groups is successful in bringing about beneficial social change as it covers all the elements like self-employment, organization of the poor masses into self-help groups and building and planning of the activities of the clusters. Self-help groups focus on the activities of the clusters taking into consideration the resources and occupational skills of the masses and the availability of the market. A radical strategy for improving gender equality is women's empowerment, which aims to radically alter power dynamics in favour of the female gender. This gives women the freedom to choose their paths in life, which significantly enhances their well-being. The development of a country depends on gender equality and women's empowerment, which may be accelerated by offering women access to low-cost financial services. More research is required to fully understand the association between "women empowerment and financial inclusion. Some studies (i.e., Fraser, 2011; Karim, 2011; Roodman and Qureshi, 2006)" have intensively discussed this context. Very few empirical studies have been carried out for evaluating the growth, and performance of SHGs, women empowerment, and challenges in microfinance for the state of Rajasthan.

In Rajasthan, microfinance is almost synonymous with Self Help Groups. There is no other scheme of microfinance so popular in the state. Currently, around 2.3 lakh SHGs are at operating in the state and 27.18 lakh rural women are reportedly involved in SHGs, according to the Rajasthan Grameen Aajeevika Vikas Parishad (RGAVP). In addition to ensuring the financial inclusion of underprivileged groups and the provision of job possibilities in the villages, the SHGs have also led to the establishment of community investment funds. The RGAVP has been designing programs to improve livelihoods and combat poverty while assisting SHGs with their income-generating endeavors.

2. Objective of the Study

The present study aims to evaluate the impact of financial inclusionthrough SHGs on women empowerment in terms of social, political, and economic indicators. The objectives of the study are:

1. To examine the factors promoting financial inclusion through SHGs formation in the study area.
2. To assess and compare the economic status of SHG member households with non-SHG members.
3. To examine the impact of SHGs membership on woman empowerment in the study area.

3. Hypothesis

The study presumes that financial inclusion through SHGs has a positive impact on social, political, and economic dimensions of woman empowerment.

4. Methodology

To examine the financial inclusion and empowerment of women through micro-credit (SHGs) the study selected female respondent households in rural areas of the Jaipur district of Rajasthan. Data were collected from 150 women who joined SHGs (members) and 50 women not joining the SHGs (non-members) through a household survey using structured questionnaires in two blocks namely, Amber and Chomu. The survey questionnaire was administered to households from November 2020 to January 2021. The household survey data included household information such as age, education level, agriculture income, non-agriculture income, migration, landholding, family size, etc., which were hypothesized to impact SHG membership. The information regarding women's participation in decision-making and awareness level on social and political issues were also collected to assess the impact of SHGs membership on their empowerment.

A logistic regression analysis has been applied to investigate the factors affecting women's participation in SHGs, access to informal credit, economic status, and political and economic decision-making. The value "1" for High Economic Status (HES) households and "0" for Low Economic Status (LES) households are assigned. In HES, odds ratios greater than one indicate 'more likely,' while odds ratios less than one indicate 'less likely.' Several intriguing findings have been made based on the logistic regression results. Table 4 presents the variables which affect the status (HES or LES) of households.

5. Discussion and Results

Financial inclusion aims to ensure the availability of timely banking services and adequate credit at an affordable cost to a sizable segment of the underprivileged, weaker section, and low-income group. The concept of microfinance developed from the failures of formal financial systems. Microfinance provides financial services targeted to individuals or a group of individuals who lack access to finance i.e. financial assistance to marginalized sections and disadvantaged communities of society through a way to different channels. Microfinance products consist of credit, savings, insurance, and other non-financial services such as training, etc. Its special features like a small amount, higher frequency of repayment, no collateral, etc. make it an effective tool for reducing barriers to accessing financial facilities for the marginalized section of society. Microfinance is hypothesized to promote financial inclusion and employment opportunities by supporting micro-entrepreneurs and small businesses through easy and cheaper finances.

Table 3 identifies the factors which attract women to the formation and joining of SHGs. The presence of migrating members in the family reduces the possibility of

women joining SHGs. However, other variables like the education level of the house head, gender of the house head, source of debt, sources of income, number of working members, the distance of the bank, location of the village, and number of migrating members have a significant impact on women's participation in SHGs. While the factors like family size, number of working members in the family, and ownership of land have not been found statistically significant. Due to the absence of monthly meetings at regular intervals, a majority of members are unaware of group activities like rules, objectives, and the saving of the group. The likelihood of SHG disbandment increased due to a lack of cooperation among members and involvement in group activities. However, the multifaceted impact of SHGs reveals that members' income, employment, mobility, saving, awareness of saving, and other areas have risen as a result of participation with the SHGs.

Table 4 depicts the determinants of the economic status of respondents. A logistic regression has been used to determine the factors likely to affect the HES with the help of the maximum likelihood estimation technique. Of the total households, 56.5 per cent were categorized as HES and 43.5 per cent of households fall under the LES category. The proportion of households securing HES was observed to be less for non-members as compared to SHG members.Borrowers' high economic level is correlated with the increase in the number of loans. The increased loan amount makes possible a good return on investment which improves the income level, standard of living, and economic status. Furthermore, if a household's economic situation improves, its access to microcredit goes also up. This is due to the favourable effect of past financing secured by households in collaboration with SHGs. It is also possible that higher levels of credit contribute to increased income; the household can save more and possess more assets; this could also frequently compel the households to demand more credit, implying that at higher income levels the household is more likely to demand loans frequently and in bigger volumes. Women have become more economically empowered after joining SHG. The rural women of Jaipur districts are empowered economically with the help of these groups as their income level has gone up due to increased employment opportunities. The odds ratio indicates that the presence of SHG members helps the households in moving toward the HES and supports our research hypothesis.

It is discernible from the results presented in table 4 that respondents residing more than 5 km away from the bank were less in favour of enjoying high economic status than the reference category because the odd ratio is 0.284 ($p<0.05$). Due to the non-availability of formal financial services the households are forced to borrow from informal sources at higher interest rates thereby weakening their financial situation. The women-headed houses are 0.427 times less likely to move towards HES thana male-headed houses. In India, women as head of the family spend less time in earning activities due to domestic responsibilities and restricted work opportunities, particularly in rural areas.

Further more, the male-dominated society and strong patriarchal feelings in rural areas limit women's ability to work like men, which weakens the household's economic position.

Table 5 presents the analysis showing the impact of various factors on access to informal credit. The factors such as marital status, caste, age of the head of the household, sources of income, distance to the bank, size of land holdings, migration, and participation in SHGs have a significant impact on a household's access to an informal source of credit. While the factors like the education level of the head of household, gender, family size, and the number of working members had a negligible impact on borrowing from informal sources. The ease and speed with which credit was made available to households headed by young SHG members prompted them to borrow from informal sources. However, the distance from the household to the branch of banks providing credit facilities encouraged informal borrowing. SHG membership reduced the chances of households borrowing from private moneylenders, particularly in rural areas. In comparison to non-members, SHG member households are less likely to borrow from moneylenders. The availability of credit from SHGs reduces the amount and chances of informal debts and liberates poor households from the catches of moneylenders.

The SHGs members revealed that SHGs credit enables them to complete the various tasks related to agriculture operation and attract them to join SHGs to obtain loans. Households who rely mostly on non-agricultural sources are less likely to borrow from SHGs. A woman-headed household is more likely to borrow from SHGs. Thus, woman-headed families rely heavily on microcredit to meet their family's needs in case non-availability of alternative sources of credit, particularly in rural areas. Irregularities in loan repayment owing to business losses may be the major source of concern, particularly for households who rely primarily on business and service activities. The physical distance between the village and the bank affects a household's access to microcredit. Consequently, as the distance between the bank and the village increases, so does the possibility of women participating in SHGs. Owing to the unavailability of formal financial institutions in rural areas, women are forced to get financing through the formation of SHGs. Self-help groups have strengthened the economic and social condition of their members by backing them with social and economic security and support.

Women's empowerment as shown in various dimensions is positively and significantly impacted by SHG participation.The study reveals that SHGs have a favorable impact on four aspects (political and economic participation, awareness, and attitude factor) of women's empowerment (Tables 6 and 7). Women who participated in SHGs were more economically empowered i.e. they had greater access to ownership and control over resources than non-members. However, the disparity in power relations between males and females, when the

latter has limited control over assets, particularly on land and houses that may be used as collateral for obtaining bank loans. Members were also more mobile and socially positioned than non-members. The members were able to exert influence over household decision-making regarding family size, education of children, and family consumption expenditure (table 6). SHG members were also better able to participate in community decision-making (political participation). A self-help group's functioning has helped in increasing the self-financing capacity of its members. Self-help groups instill a feeling of confidence and provide the members with employment which increases their income that helps them in increasing their self-financing capacity.

One-way ANOVA has been used to examine whether there is a significant mean difference in the financial inclusion levels of women's, political, economic, and social empowerment through SHGs. It is evident from the result presented in table 8 that there are significant differences between the indicators of overall financial inclusion and women empowerment. The Games-Howell post-hoc test has been used to identify the difference in financial inclusion. The difference between the group means has been found statistically significant as the p-values for economic, social, and political empowerment are 0.015, 0.027, and 0.037 respectively which are significant at a 5% level of significance (table 8). It is discernible from table 8 that there difference in the empowerment of the SHGs members. In comparison to new members, experienced members have more freedom to operate independently. However, new members were more conscious of social concerns than veteran members. There is no discernible difference between the existing and new members in terms of decision-making and attitude variables. The study reveals that association with SHGs does change the attitude of husbands toward their wives. The earning capacities of members due to credit have changed their attitudes considerably and do inculcate the ideas of gender equality within the society. Another advantage of SHG participation discovered in the study is a lower degree of marital control by the husband over various activities of the wife. The frequent movement of members to the bank, to attend meetings and talk with other members, contributes to women's independence in rural regions.

6. Conclusion

The findings concur with the stated hypothesis and show that joining financial services through SHGs makes the empowerment factors statistically significant. Every empowerment indicator supports the proposed hypothesis. The study also reveals that women using financial services more frequently, such as opening bank accounts and saving regularly, and investing in assets are more empowered in terms of social, political, and economic factors. It has heightened women's role in society bringing more freedom in political decision-making, the ability to make financial decisions at work, and decision-making within the family. It has been noted that the development and emergence of the microfinance industry have been extremely beneficial for women who have stepped up to mobilize their

funds, finally resulting in equality and parity with their males. Households' access to microfinance is greatly impacted by variables like marital status, caste, age of head of household, proximity to the bank, and membership of SHGs. Other factors, such as gender, background and education of the head of household, sources of income, family size, number of employed family members, economic conditions, migration patterns, village location, and land ownership status, have a negligible impact on the decision to obtain credit from informal sources.

The microfinance program is an initiative to extend financial help to the rural poor and uplift them by empowering them with employment opportunities. Self-help groups allow easy borrowing for their members which fulfills their consumption needs. Women's participation and empowerment have increased after SHG membership.The most significant contribution of the self-help group is the increase in income and employment opportunities for its members which in turn increases the investment in revenue-generating assets. SHGs provide credit supplements for poor people, deprived groups of society, and women. It has been observed that the SHGs enabled their members to meet the credit requirement for farming and non-farm activities. This provided good returns in farm and non-farm activities raising the economic status of SHG members as compared to non-SHG members. A comprehensive action plan is needed for the branding, quality management, packaging, and marketing of women's products and to enable them to offer the items needed to satisfy market demand, the cluster-level groupings should be reinforced. The study concludes that the economic and social effects of SHGs are beneficial for its members and make them economically empowered reducing their dependency on money-lenders and non-institutional sources.

References

Arora Sukhwinder Singh, Leach Jermy (2005). Towards Building an Inclusive Financial Sector: Lessons from South Africa. Economic and Political Weekly, 40 (17).

Banerjee (Chatterjee), T (2009). Economic Impact of Self-Help Groups - A Case Study. Journal of Rural Development, 20 (4): 451-467

Bolnick, Bruce R. & Eric R. Nelson, (1990). Evaluating the Economic Impact of a Special Credit Programme: KIK/KMKP in Indonesia, The Journal of Development Studies 26: 299-312.

Burra, Ranadive & Murthy (2005). Micro-Credit, Poverty, and Empowerment: Linking the Triad. New Delhi, India: Sage Publications.

Basu, P. & Srivastava, P. (2004). Scaling up Access to finance for India's Rural Poor. World Bank Policy Research Working Paper 3646 Retrieved from http://www.wds.worldbank.org.

Basu, P. & Srivastava, P. (2005). Exploring Possibilities: Microfinance and Rural Credit Access for the Poor in India. Economic and Political Weekly, 40(17): 1747-1756.

Burgess, R. & R. Pande (2005). 'Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment', American Economic Review, 95(3): 780-795 DOI: 10.1257/0002828054201242

Chen, M.A. & Snodgrass, D. (2001). Managing resources, activities, and risk in urban India: the impact of SEWA Bank. Washington D.C. AIMS, Retrieved from

http://pdf.usaid.gov/pdf_docsPNACN571.pdf.

Coleman, B.E. (1999). The impact of group lending in Northeast Thailand. Journal ofDevelopment Economics, 60 (1): 105-41.

Coleman, B.E (2006). Microfinance in Northeast Thailand: Who Benefits and How Much? World Development, 34 (9): 1612-1638.

Dev, S. Mahendra (2006). Financial Inclusion: Issues and Challenges. Economic and Political Weekly, 41 (41), 4310-13

EDA Rural Systems (2006). Self Help Groups in India: A Study of the Lights and Shades Gurgaon, India: EDA Rural Systems Pvt. Ltd. for CRS, USAID, CARE, GTZ/NABARD.

Fisher, Thomas & Sriram M. (2008). Beyond Microcredit: Putting Development Back into Microfinance. New Delhi, India: Vistar,

Gaiha, R. & Nandhi, M. (2005). Microfinance, Self-Help Groups, and Empowerment in Maharashtra. ASARC working paper 2007 (15).

Ghatak, M., (1999). Group Lending, Local Information, and Peer Selection, Journal of Development Economics 60: 229-248.

Ghate, Prabhu (2007). Microfinance: The Challenges of Rapid Growth. New Delhi, India: Sage Publications.

Goetz, A.M. & Sen Gupta, R. (1996). Who takes the credit? Gender, power, and control over loan use in rural credit programs in Bangladesh. World Development, 24 (1): 45–63.

Hashemi, Syed M., Sidney R. Schuler, & Riley, P. (1996). Rural Credit Programs and Women's Empowerment in Bangladesh. World Development 24(4): 635–53.

Hermes Niels & Lensink Robert (2007). Impact of Microfinance: A Critical Survey, Economic and Political Weekly, 42 (6): 462-465.

Hossain, Mahabub. (1988). Credit for Alleviation of Rural Poverty: The Grameen Bank in Bangladesh. IFPRI Research Report (65). International Food Policy Research Institute, Washington, D.C.

Montgomery, R., (1996). Disciplining or Protecting the Poor? Avoiding the Social Costs of Peer Pressure in Micro-Credit Schemes, Journal of International Development 8: 289-305.

Mosley, P. (2001). Microfinance and Poverty in Bolivia. Journal of Development Studies, 37 (4): 101-132.

Morduch, Jonathan and Armendariz Beatriz (2005). The Economics of Microfinance Cambridge, Massachusetts, London, England: The MIT Press.

Morduch, Jonathan. (1998). Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh. Draft Paper presented Retrieved from http://www.financialaccess.org

Nair Tara S. (2005). The Transforming World of Indian Microfinance. Economic and Political Weekly, 40 (17): 1695-1698.

Oommen M.A. (2007). Kudumbashree of Kerala: An Appraisal. Institute of Social Sciences, Article retrieved from the website: http://www.kudumbashree.org

Oommen M.A. (2008). Micro Finance and Poverty Alleviation: The case of Kerala's Kudumbashree. Working Paper No. 17. Retrieved from Centre for Socio-Economic and Environmental Studies, Kochi, Article retrieved from the website:http://www.kudumbashree.org.

Painter, Judith & MkNelly, Barbara (1999). Village Banking Dynamics Study: Evidence from Seven Programs. Journal of Microfinance 1(1) : 91-116.

Pitt, Mark M. (1999). Reply to Jonathan Morduch's 'Does Microfinance Really Help the Poor?

New Evidence from Flagship Programs in Bangladesh.' Retrieved from http://www.pstc.brown.edu/mp.

Pitt, Mark M., & Shahidur R. Khandker. (1996). Household and Intra-household Impact of the Grameen Bank and Similar Targeted Credit Programs in Bangladesh. Discussion Paper 320. World Bank. Washington, D.C

Appendix

Table 1: Financial Inclusion Schemes Launched by the Government of India

Bank Type	Beneficiaries at Rural/Semi-urban Centre bank branches	Beneficiaries at urban Metro Centre bank branches	Rural-urban Female Beneficiaries	Total Beneficiaries	Deposits in Accounts	Ru pay Debit Cards issued to Beneficiaries
PSB	153.4	129.7	149	283.1	781,556.7	223.7
RRP	51.2	9.8	34	61	172,782.7	38.5
PRB	6.9	5.5	6.7	12.4	29,806.1	11.6
Total	211.5	145.1	189.7	356.5	984,145.5	2774

Table 2: PMJDY Progress Report (in Rs. million)

Program	Benefits	Eligibility
PMJDY launched in 2014	• Accidental insurance cover of Rs. 0.2 million • Life cover of Rs.30,000 • Overdraft facility upto Rs.10000 to preferably lady of the household. RuPay ATM-cum-Debit Card	• All citizens of India with valid proofs • Preference is given to females in the household
PMJJBY launched in 2015	• The pay premium is Rs. 330 per annum • Risk coverage under this scheme is Rs. 0.2 million in case of death	• People in the age group of 18–50 years • Having a bank account under PMJDY
PMSBY launched in 2015	• The pay premium is Rs. 12 per annum • The risk coverage under the scheme is Rs. 0.2 million for accidental death and full disability and Rs. 0.1 million for partial disability	• People in the age group of 18–70 years • Having a bank account under PMJDY
APY launched in 2015	• Fixed pension for the subscriber ranging between Rs. 1000 to 5000	• The minimum age for joining APY is 18 years and the maximum age is 40 years • Having a bank account under PMJDY
Note: PMJDY: Pradhan Mantri Jan Dhan Yojana APY: Atal Pension Yojana PMJJBY: Pradhan Mantri Jivan Jyoti Bima Yojana		

Source: PMJDY Progress Report, GOI, May 2019. Retrieved from https://www.pmjdy.gov.in

Table 3: Determinants of Women's Participation in SHGs

Independent Variables		Estimated Coefficients	Standard Error	Wald Statistics	Odds Ratio
Male-headed house	(Ref. category)	1.752	1.29	2.578	4.244*
Female-headed house					
No migrated members	(Ref. category)	-1.191	.542	4.436	0.387*
Any migration in households					
Sources of income (Agriculture)	(Ref. category)	-2.509	.566	16.732	0.134*
Non Agriculture					
No Informal debt	(Ref. category)	-2.444	.668	18.723	0.086*
Any Informal debt					
Bank distance (<5Km)	(Ref. category)	1.263	.645	3.721	3.367*
More than 5 Km					
Low Economic Status	(Ref. category)	1.677	.688	8.384	6.107*
High Economic Status					
Respondent education (Illiterate)	(Ref. category)	-1.454	.519	7.435	0.171*
Primary or higher					
Size of family 1-4	(Ref. category)	.326	.593	.463	1.366
5-8					
Employed	(Ref. category)	.024	.629	.003	1.042
Unemployed or housewife					
Households have no Land	(Ref. category)	-.255	.578	.285	.724
Any Land					
No. of working members (1 to 3)	(Ref. category)	-.189	.655	.036	.857
No. of working members (4 to 6)	Constant	3.493	1.732	3.805	23.601

*Note: * and ** represent the 5% and 10% significance levels, respectively.*
Dependent variable = 1 if a household has borrowed credit through SHGs and 0= Otherwise. R= Reference category. The reference category is dropped in each group to avoid a multicollinearity problem. Odds Ratio= Values more than 1 are more likely and less than 1 are less likely influences on a dependent variable.

Table 4: Determinants of Higher Economic Status
Factors influence Higher Economic Status in Odds Ratio

Independent Variables	Estimated Coefficients	Standard Error	Wald Statistics	Odds Ratio
Male-headedhouse (Ref. category)				
Female-headed house	-.784	.421	6.324	0.427*
Age of House Head in yrs.(35-40)(Ref. category)				
41-50	.376	.389	2.876	1.583*
51-60	.450	.385	2.645	1.639*
Marital status of house head-unmarried (Ref. category)				
Married	.541	.338	2.904	1.582*
Non-Member of SHGs ` (Ref. category)				
New Member (< 5 years)	1.133	.498	5.203	2.553*
Old Member (> 5 years)	1.326	.486	5.477	2.544*
Bankdistance(<5Km) (Ref. category)				
More than 5 Km	-.742	.341	6.127	0.284*
Any Informal debt (Ref. category)				
No Informal debt	-.304	.281	.429	.823
Non-Migration (Ref. category)				
Migration	-.441	.259	2.863	.616
No. of working members (1to3) (Ref. category)				
Agriculture landholding- landless (Ref. category)				
Marginal landholding	1.369	.434	5.765	2.288*
Number of working members (4 to 6)	.366	.214	2.488	1.509**
Education level of Head of household -Illiterate				
(Ref. category)				
Primary or higher	-.124	.245	.118	.794
Sources of income– (Agriculture) (Ref. category)				
Non-Agriculture	-.244	.268	.455	.686
Constant	-.633	.534	1.721	0.388
LR statistic 68.45*, Log likelihood -268.234, Cox & Snell R Square .173, Nagelkerke R Square .236, Pseudo R2=.17				

*Note: 1. * and ** represent the 5% and 10% significance levels, respectively.*

2. Dependent variable =1 if a beneficiary household has high economic status and 0 = Low economic status. The reference category is dropped in each group. Odds Ratio = Value more than 1 is more likely and less than 1 is less likely influences the dependent variable.

Table 5: Factors affecting Access to Informal Credit
Factors influence access to Informal credit in Odds Ratio

Independent Variables	Estimated Coefficients	Standard Error	Wald Statistics	Odds Ratio
Male headed house (Ref. category)				
Female-headed house	0.204	.0.343	.117	1.335
Age of Household Head in yrs(35-40) (Ref. category)				
41-50	-.064	0.351	.049	0.827
51-60	0.455	0.394	1.816	1.564*
Low Economic Status (Ref. category)				
High Economic Status	-0.283	0.262	0.914	3.739*
Marital status of house head (Unmarried) (Ref. category)				
Married	0.916	0.456	4.513	2.455*
Caste of Households (SCs/STs) (Ref. category)				
OBCs and Others	0.713	0.326	6.411	2.321*
Bank distance (<5Km) (Ref. category)				
More than 5 Km	1.866	0.261	20.145	6.132*
Non Member (Ref. category)				
New Member of SHGs (<5 years)	-2.543	0.369	24.127	0.076*
Old Member (>5 years)	-0.721	0.361	3.889	0.425*
No. of working members (1 to 4) (Ref. category)				
Number of working members (4 to 6)	0.607	0.335	3.482	1.766**
Education of Household head Illiterate(Ref. category)				
Primary or higher	0.166	0.385	0.342	1.321
No migrated members (Ref. category)				
Migration in households	-0.394	0.299	1.144	0.634
Agriculture landholding landless (Ref. category)				
Marginal landholding	1.433	0.487	5.467	2.355*
Sources of income Agriculture (Ref. category)				
Non Agriculture	-.033	0.349	0.027	2.136*
Constant	-0.344	.573	.339	0.739
Log likelihood -211.32, Cox & Snell R Square 0.247, Nagelkerke R Square 0.436, LR statistic 120.24*, Pseudo R2=0.38				

*Note: Note: * and ** represent the 5% and 10% significance level, respectively.*
Dependent variable = 1 if a household has any informal debt and 0= otherwise. The reference category is dropped in each group. Odds Ratio= Value more than 1 is more likely and less than 1 is less likely influences the dependent variable.

Table 6: Participation in Decision Making in percentage

Women make decisions alone or jointly with their husband on the following outcomes	Members	Non Members	Total
Freedom to take a loan for the family	66.5	45.9	59.4
Use of borrowed money	72.4	51.7	68.9
Utilization of self-earned money	71.6	49.2	64.6
Personal health matters*	74.3	50.0	68.2
Visit of family/relatives*	75.2	51.4	68.8
Purchase of daily need items*	71.9	48.7	69.7
Expenditure on the education of children*	73.8	42.0	62.3
Exercising the vote to the candidate of own choice	74.8	49.1	67.9
Freedom to participate in social functions	75.3	50.5	69.4
Freedom to decide on marriage & education of children	75.6	46.5	68.8
Frequency of participating in SHGs meeting	82.7	48.8	75.3
Use of husbands income*	74.9	48.3	67.4

**Mann Whitney test of Significance <0.05*

Table 7: Participation in Decision Making (in %)

Dependent Variable	Parameter	Coefficient	Std. Error	t-statistic	P-values
Political Participation	Intercept	0.245	0.095	2.578947	.026
	Non-Member	-0.633	0.146	-4.33562	.003
	Member	-0.167	0.159	-1.05031	.050*
Economic Participation	Intercept	0.335	0.08	4.1875	.117
	Non-Member	-0.478	0.146	-3.27397	.064
	Member	-0.519	0.123	-4.21951	.010**
Awareness Factor	Intercept	-0.051	0.074	-0.68919	.620
	Non-Member	-0.149	0.177	-0.84181	.405
	Member	0.329	0.168	1.958333	.004**
Attitude Factor	Intercept	0.417	0.086	4.848837	.007
	Non-Member	-0.723	0.159	-4.54717	.040
	Member	-0.29	0.188	-1.54255	.054*

Table 8: Results of One-Way ANOVA and Post-hoc Test

Characteristics	***Factor***		***Categories***			
Economic empowerment	Financial Inclusion		1	2	F-value	P-value
		Mean	11.32	13.8	43.753	0.015
		SD	2.9	2.6		
Post-hoc test						
Financial Inclusion (i)	Financial Inclusion (j)		Mean difference (i-j)			
	1		1.3452			0.016
	2		−1.69743			0.255
Social empowerment	Financial inclusion	Mean	13.4	15.9	36.334	0. 027
		SD	2.5	2.8		
Post-hoc test						
Financial Inclusion (i)	Financial Inclusion (j)		Mean difference (i-j)			
	1		1.44781			0.024
	2		-0.76543			0.221
Political empowerment	Financial inclusion	Mean	10.4	14.7	54.655	0.037
		SD	3.6	2.3		
Post-hoc test						
Financial Inclusion (i)	Financial Inclusion (j)		Mean difference (i-j)			
	1		1.29702			0.006
	2		−1.16795			0.125

Does Monetary Policy Effective During the Covid Pandemic

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Abstract

The present paper is an attempt to investigate the role of monetary easing policy in the form of interest rates during the pandemic outbreak. This article empirically tests the changes in the policy rate by the monetary policy for the five major economies of the world viz- United States, United Kingdom, China, Japan, and India using the event study analysis. The result based on the T-test for Abnormal changes in interest rate is statistically significant for all the countries during the event window which suggest that policy rates in these countries are not significantly affected by the changes in the real GDP during the Covid-19 pandemic. For India and Japan result is highly significant as compared to other countries which indicate that apart from the real GDP other guiding factors are responsible for the change in the policy rates. Implicitly, Monetary policy is not effective in combating the economic fluctuations during the Covid pandemic. Overall, the coronavirus pandemic is an unprecedented event that has drastically shaken almost all the economies of the world. Lowering the policy interest rates by the monetary authorities by major economies for stimulating economic development is not sufficient, is rather sporadic to perform against the theoretical models based on the past observations of the macroeconomic variables like inflation and output. Monetary or fiscal policy measures can mitigate the short-term impact of the pandemic while comprehensive reforms would be required to minimize the long-term impact of the pandemic on the growth of the economy.

1. Introduction

In a general sense, monetary policy is the central bank's action to influence the money stock. Broadly speaking, the monetary policy represents the central bank's action to influence and target short-term interest rates. The biggest challenge facing the conduct of Monetary policy in India is to continue the accelerated growth process while maintaining price and financial stability (Rakesh Mohan 2008). Thus, Monetary policy aims to maintain a judicious balance between price stability and financial stability. There are several conventional and unconventional tools which endeavored to bring out price stability in the economy with economic growth and development. Among these tools, the policy interest rate is relatively

considered an effective tool for controlling the business cycles or the occurrence of any unprecedented events in the economy. By raising the interest rates, monetary authorities control the inflationary situation and bring out stability. Figure1 depicts the trend of the actual rate of interest for the selected countries.

There are factors other than the Money supply or prices that affect the aggregate

demand and aggregate supply are regarded as sudden shocks or natural occurrences. Sudden stops are economic fluctuations characterized by sudden contraction or loss of capital inflows and associated irregularities at international markets. The word sudden stops were first coined during the Mexican crisis of 1994 for the abrupt drying up of the capital inflows. Thereafter, this phrase was used several times such as Argentina Crisis(1995), the Russian crisis(1996), Brazillian Crisis(1998), Global Financial crisis(2008). Another example of a sudden stop is the 'Taper Tantrum' of 2013 in which the Federal Reserve was expected to taper its purchased securities which resulted in US interest rates leading to the capital outflow from emerging economies. Recent covid-19 pandemic which was considered a Global pandemic by WHO is also such a sudden stop.Thus sudden stops are unanticipated fluctuations in the economy which are often associated with currency crashes and loss of capital flows in the economy.

However, the normal business cycle is abrupt due to the sudden unanticipated shocks in the economy which adversely affect the aggregate supply and aggregate demand, consequently, bringing disequilibrium and widening the output gap in the economy. These sudden shocks have several implications forthe real sector and financial sector. Its leading effect is on the financial sector in form of a fall in equity prices, depreciation in the exchange rate, and fall in the reserves. Thereafter, it poses an adverse impact on real variables like output, investment,and employment.

As a policy response to these sudden shocks, countries adopted measures in the form of changing the exchange rate or changing the monetary policy or may approach IMF as a last resort for getting aid in the form of fiscal tightening and trade reforms.The impact of the exchange rate works little on monetary stringency due to lowering mismatches in foreign currency. Similarly, resorting to IMF also reduced as countries switched from fixed to flexible exchange rate systems. Thus most economies rely on monetary and fiscal packages to offset the sudden stops. However monetary and fiscal policies could not significantly control the sudden stops emerging from different countries. Studies conducted by Sander and Kleimerier(2006) found that there exists a greater response to the anticipated monetary policy changes measures rather than the unanticipated changes. The progress on the monetary and fiscal policies also not reduced the implications of the stops in a significant manner (Cavallo and Leon, 2020).

2. Related Literature

There has always been a difference of opinion regarding the effectiveness of Monetary policy in controlling economic fluctuations. Taking about the great depression of the 1930s and even afterward throughout the 1960s i.e. the Keynesian period is based on the legacy of the ineffectiveness of monetary policy

but after the work of Friedman(1963) and other monetarists contended on the phenomenon that money matters so they believe that monetary policy playsa significant role in combating the cyclic fluctuations in an economy.

The introduction of the rational expectations hypothesis by a new classical macro economist (Sargeant, Wallace1975) who follows the path of classical economists and as such believes in the notion of the ineffectiveness of monetary policy due to the assumption of perfect flexibility in prices/wages. Hence, they also believe that there is no role of monetary policy in output stabilization. This proposition was further fueled by New Keynesian economists as a result of which the role of monetary policy more or less disappeared from the discussion and much attention was paid to 'policy rule' and attaining price stability.

The advent of the Taylor rule (1993) specifies the norms for assessing the impact of monetary policy by specifying the relation between short-term interest rates, deviation of the inflation rate from the targeted inflation rate, and deviation of real output from the potential output. Thus, over two decades many economies adopted the framework of the Taylor rule to assess the effectiveness of Central banking policy in the form of interest rates to hit inflation targets. To be specific, we can say that the effectiveness of the monetary policy of any economy depends on the extent to which changes in the policy rates are affected by the real output or aggregate demand and supply. The ability of monetary policy to reduce income losses during recession differs from country to country and it is generally lower in low-income countries as their domestic investment comes to a halt during uncertainty like pandemics, and the outputs worsen.

The present study conducts an event study approach which was initially proposed by Fama et al. (1969) with the following critical three assumptions: (i) the event is unexpected, (ii) there are no confounding factors impacting the asset prices being studied, and (iii) that markets are efficient. This approach generally attempts to measure the abnormal change in any variable during an event period by subtracting the predicted value based on a pre-event window regression from the actual value.

The available literature on COVID-19 largely focuses on the Federal and the ECB actions. Many papers focus on Quantitative Easing programs targeting new asset classes–for example, Haddad, Moreira, and Muir (2020), Gilchrist et al. (2020), and Barbon and Gianinazzi (2019). Similarly, Cortes, Gao, Silva, and Song (2020), compare the impact of the Great Recession during COVID-19 on several advanced and emerging countries. The outcome variable is a measure of disaster risk extracted from option pricing of asset-specific ETFs and their result suggest that the international transmission of the Fed QE has changed during COVID-19, especially in 6 emerging markets. This study provides evidence that the importance to control for common factors and spillovers. Greenwood, Hanson,

Stein, and Sunderam (2020) assessed exchange rate impacts from 50 pre-COVID-19 Quantitative easing announcements by the Federal, the Bank of Japan, and the UK, reporting exchange rate impacts of the same magnitude based on an event study.

There is a scarcity of literature work available on identifying the effectiveness of the monetary policy on covid 19 pandemic. We broaden the set of countries considered during COVID-19 by considering five major economies of the world viz U.K, USA, China, Japan, and India. The present research work is an attempt to assess the effectiveness of the Monetary policy easing policy during the covid pandemic.

3. Research Methodology

This section entails the research methodology adopted for analyzing the data and variables used to carry out the research work.

3.1 Data Description

The present study aims to find out the relation between the central bank's policy rate (interest rate) and real GDP based on the premise of the Taylor rule. It explains that interest rates prevailing in an economy are a result of the real income estimate intruded on by the monetary policy. The study is based on a secondary study carried out for five major economies of the world U.K, the USA, China, Japan, and India. The time for the estimation window ranges from 2000 to 2019 while the period for the event window is the onset of the event i.e. beginning of the coronavirus which ranges from the first quarter of 2020 to the third quarter of 2021. The required dataset has been collected from the Federal Reserve Bank.

3.2 Event Study Methodology

The present article applies the event study analysis to evaluate the impact of monetary easing policies in times of pandemic for the five major selected economies. An event study is an empirical analysis that examined the impact of the occurrence of any event on any financial performance of any variables of interest. Thus, it reveals information about how a variable is likely to react in a given event. Event analysis is also known as event history analysis. This particular methodology has been used in many studies to decipher the impact of the announcement of an event on the economy. It compares trends before and after an event to assess the impact of a particular event on the economy to see if the implementation of particular policy measures is effective or not. Event studies are especially employed in the insurance industry to compute the life table and ascertain the financial return or value of securities.

The present study examines the impact of the Covid-19 pandemic on the monetary interest rates and the real GDP using the event study methodology. The Covid-19 pandemic struck the global landscape around November and December 2019. Novel Coronavirus has worldwide devasting

and long-lasting impact on the macroeconomic indicators of economic activities through a decline in the aggregate demand and aggregate output in the economy

3.3 The estimation window and the event window can thus be illustrated as :

The estimation window has been constructed quarterly from 01 January 2000 till 31 December 2019 while the period for the event window is the onset of the event ie. the beginning of the coronavirus which ranges from 1 January 2020 to September 2021.

Under event study methodology assessment of the abnormal changes (increase or decrease) of performance variables upon the announcement of a particular event is assessed empirically. The abnormal changes in the policy interest rates during the event window have been estimated as;

$$AC_{it} = OC_{it} - Tc_{it}$$

Where in,

Ac_{it} represents the abnormal changes in the policy interest rate "i" in the quarter"t;"

$OC_{i,t}$ represents the observed changes in the policy interest rate "i" in the quarter "t," over the length of the event window;

$TC_{i,t}$ represents the theoretical changes in the policy interest rate "i" in the quarter"t," over the length of the estimation window.

The theoretical variations in the policy interest rates of each of the countries have been estimated as a consequence of the regression equation comprising the policy interest rate as the dependent variable and the real GDP as the independent variable.

$$Changes\ in\ Interest\ Rates_{it} = \alpha + \beta(Changes\ in\ Real\ GDP_{i,t})$$

After deriving a slope and the intercept values of the above regression equation, the theoretical value for the changes in the interest rates is estimated as instigated by the changes in the real GDP in the economy. Once the observed changes and theoretical changes in the policy interest rates are categorized, then assessment of the observed abnormalities in the policy interest rate is assessed by calculating the difference between both values. Thereafter, to find out the significance level of abnormal change, the student T-test is applied. The estimation formula used for the same has been presented below:

$$T\text{-}Test = \frac{Cumulative\ Abnormal\ Change}{Standard\ error\ of\ the\ TC}$$

Wherein, the cumulative abnormal changes refer to the abnormal changes in the policy interest rates for every quarter passed during the event window. The formula can also be presented as;

$$\textbf{Cumulative Abnormal Change} = \sum_{(i=1)}^{N} = \frac{\mathbf{AC}}{\mathbf{N}}$$

The estimated values for the t-test have then been used to examine the statistical significance of the abnormal changes observed in the policy interest rates for each of the five countries being examined.

4. Data Analysis and Interpretation

The result of the event study carried out for the five countries viz- U.S., U.K., China, Japan, and India over the period of the event window is presented in Table1. Our estimated result suggests that the abnormal changes in the interest are positive for U.S., U.K., and China which implies that the actual change in interest is more as compared to the change expected in the interest rate. However, for India and Japan abnormal changes in interest rates are negative which is mainly due to the constant deceleration in the interest rates even the interest rate for Japan becomes negative as a response to the covid-19 outbreak. In contrast to it, peculiar observations for China's interest rate exhibit no relaxation in the interest rate despite being the epicenter of coronavirus. Similarly, the Cumulative abnormal change shows a positive rising trend for the U.K., U.S., and China. However, the intensity for china is less as compared to these two countries. For India and Japan cumulative abnormal change is rising but it shows a negative trend. It can be witnessed from the result that its intensity for India is very high.

The result based on the T test for Abnormal changes in interest rate is statistically significant for all the countries during the event window which suggest that policy rates in these countries are not significantly affected by the changes in the real GDP during the Covid-19 pandemic. For India and Japan result is highly significant as compared to other countries which indicate that other guiding factors are responsible for the change in the policy rates apart from the real GDP in these countries. To corroborate the result, we that monetary policy is not effective in combating the economic fluctuations during the pandemic situation for all the selected countries and it is highly ineffective for low-income countries like India.

To conclude, the coronavirus pandemic is an unprecedented event that has drastically shaken almost all the economies of the world Lowering the policy interest rates by the monetary authorities by major economies for stimulating economic development is not sufficient and is rather sporadic to perform against the theoretical models constructed based on the historical observations of the macroeconomic variables like inflation and output. Monetary or fiscal policy measures can mitigate the short-term impact of the pandemic on the economy while comprehensive reforms would be required to minimize the long-term impact of the pandemic on the growth of the economy. Hence there is a need to implement various supplement policies for the Government in a coordinated manner to bring back the economy on track.

References

Bernanke BS. (2020) The new tools of monetary policy. Am Econ Rev. (2020) 110:943–83. DOI: 10.1257/aer.110.4.943.

Braggion F, Christiano LJ, Roldos J. (2009) Optimal monetary policy in a 'sudden stop'. J Monetary Econ. (2009) 56:582–95. doi: 10.1016/j.jmoneco.2009. 03.010.

Campbell JR, Evans CL, Fisher JD, Justiniano A, Calomiris CW, Woodford M. (2012) Macroeconomic effects of federal reserve forward guidance. In: Brookings Papers on Economic Activity. U.S. (2012). p. 1–80. DOI: 10.1353/eca.201 2.0004

Chen WY.(2017) Demographic structure and monetary policy effectiveness: Evidence from Taiwan. Qual Quant. (2017) 51:2521–44. DOI: 10.1007/s11135-016-0407-1.

Cortes, Gustavo, George Gao, Felipe Bastos G Silva, and Zhaogang Song, "Unconventional Monetary Policy and Disaster Risk: Evidence from the Subprime and COVID-19 Crises," Available at SSRN 3642970, 2020.

D'Amico S, King TB. (2015) What Does Anticipated Monetary Policy Do? Working Paper Series.

Efremidze L, Kim S, Sula O, Willett TD.(2021) The relationships among capital flow surges, reversals, and sudden stops. J Financial Econ Policy. (2017) 9:393–413. doi: 10.1108/JFEP-03-2017-0021.

Fama, Eugene F, Lawrence Fisher, Michael C Jensen, and Richard Roll, "The adjustment of stock prices to new information," International economic review, 1969, 10 (1), 1–21.

FRED. Economic Data. (2020). Available online at: https://fred.stlouisfed.org/ (accessed July 20, 2020).

Gertler M, Karadi P. (2015) Monetary policy surprises, credit costs, economic activity. Am Econ J Macroecon. 7:44–76. DOI: 10.1257/mac.20130329.

Greenwood, Robin, Samuel G Hanson, Jeremy C Stein, and Adi Sunderam, "A Quantity Driven Theory of Term Premia and Exchange Rates," Technical Report, National Bureau of Economic Research 2020

Guerrieri V, Lorenzoni G, Straub L, Werning I. (2020) Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages? NBER Working Paper No. w26918, 1–37. (2020). DOI: 10.2139/ssrn.3570096.

Haddad, Valentin, Alan Moreira, and Tyler Muir, "When selling becomes viral:

Disruptions in debt markets in the covid-19 crisis and the fed's response," Technical Report, National Bureau of Economic Research 2020.

Imam PA. (2015) Shock from graying: is the demographic shift weakening monetary policy effectiveness[J]. Int J Finance Econ. (2015) 20:138–54.

Lee KS, Werner RA.(2018) Reconsidering monetary policy: an empirical examination of the relationship between interest rates and nominal GDP growth in the US, UK, Germany, and Japan. Ecol Econ. 146:26– 34. doi: 10.1016/j.ecolecon.2017.08.013.

Yoshino N, Miyamoto H. (2017) Declined effectiveness of fiscal and monetary policies faced with aging population in Japan[J]. Japan World Econ. (2017) 42:32–44. DOI 10.1016/j.japwor.2017.06.002.

Zhang R. News Shocks and the Effects of Monetary Policy (2019). DOI 10.2139/ssrn.3348466

APPENDIX

Figure1: Rate of Interest for the selected countries

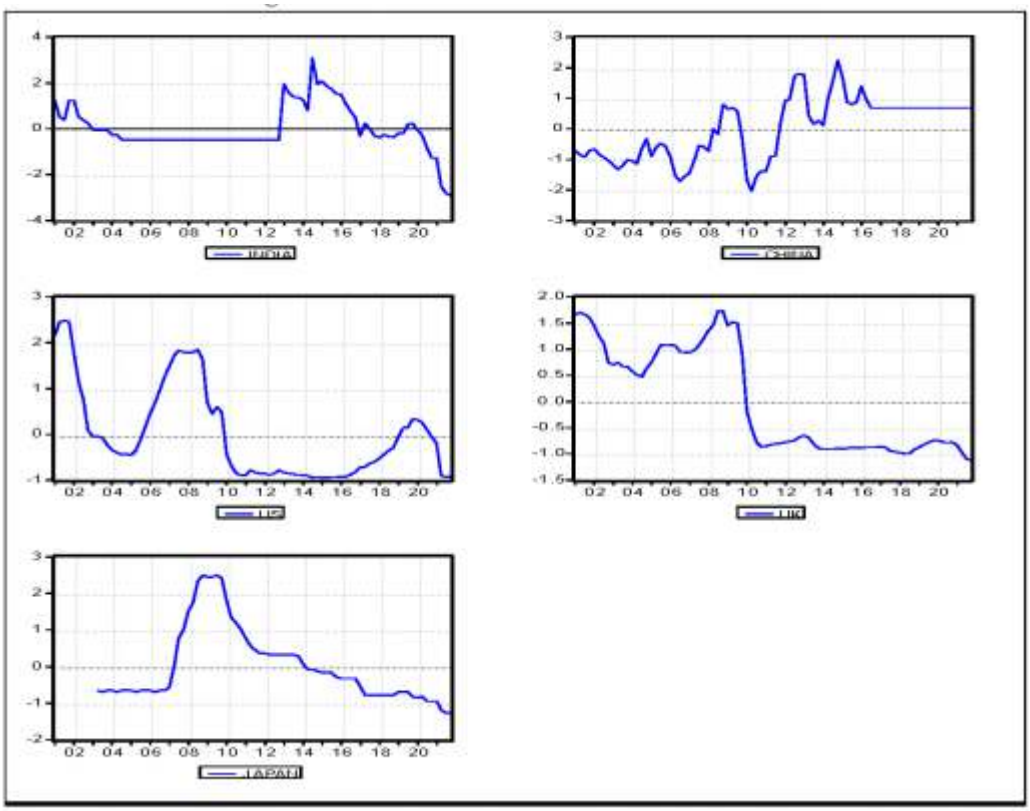

Table1: Estimation changes during the Event window (Covid period) for the selected countries

UK						US				
Year	Actual	Expe-cted Change	Abnor-mal Change	Cumm-ulative Abnor-mal Change	ART-Test	Actual	Expe-cted Change	Abnor-mal Change	Cumm-ulative Abnor-mal Change	ART-Test
2020-01-01	0.67	-1.87	2.54	2.54	1.15	1.53	-1.85	3.38	3.38	1.78
2020-04-01	0.39	4.00	-3.61	-1.07	-0.48	0.19	-1.04	1.23	4.61	2.43
2020-07-01	0.08	-7.72	7.80	6.73	3.04	0.15	-2.71	2.86	7.47	3.94
2020-10-01	0.04	-3.16	3.20	9.93	4.49	0.15	-2.09	2.24	9.71	5.12
2021-01-01	0.05	-2.31	2.36	12.29	5.55	0.12	-2.13	2.25	11.96	6.31
2021-04-01	0.08	-4.34	4.42	16.71	7.55	0.10	-2.14	2.24	14.20	7.49
2021-07-01	0.07	-3.03	3.10	21.26	9.61	0.10	-2.04	2.14	16.34	8.62
2021-10-01	0.09	-3.04	3.13	21.47	9.70	0.12	-2.04	2.16	18.50	9.76

JAPAN					
Year	Actual	Expected Change	Abnormal Change	Cumm-ulative Abnormal Change	ART-Test
2020-01-01	0.016	0.27519	-0.25919	-0.25919	-1.08130
2020-04-01	-0.041	0.27808	-0.31908	-0.57827	-2.41246
2020-07-01	-0.062	0.27913	-0.34079	-0.91906	-3.83421
2020-10-01	-0.055	0.27879	-0.33379	-1.25285	-5.22674
2021-01-01	-0.058	0.27896	-0.33729	-1.59014	-6.63388
2021-04-01	-0.067	0.27941	-0.34675	-1.93689	-8.08046
2021-07-01	-0.072	0.27965	-0.35165	-2.28854	-9.54751
2021-10-01	-0.100	0.2811	-0.3811	-2.6696	-11.1373

	INDIA					CHINA				
Year	Actual	Expe-cted Change	Abnor-mal Change	Cumm-ulative Abnor-mal Change	ART-Test	Actual	Expe-cted Change	Abnor-mal Change	Cumm-ulative Abnor-mal Change	ART-Test
2020-01-01	5.05	6.30	-1.25	-1.25	-1.25	4.35	3.63	0.72	0.72	0.60
2020-04-01	3.62	6.46	-2.84	-4.09	-4.07	4.35	3.46	0.89	1.61	1.33
2020-07-01	3.25	6.50	-3.26	-7.35	-7.31	4.35	3.50	0.85	2.46	2.03
2020-10-01	3.14	6.51	-3.37	-10.72	-10.67	4.35	3.49	0.86	3.32	2.75
2021-01-01	3.25	6.50	-3.26	-13.98	-13.91	4.35	3.59	0.76	4.09	3.38
2021-04-01	3.38	6.49	-3.10	-17.08	-17.00	4.35	3.48	0.87	4.96	4.10
2021-07-01	3.36	6.49	-3.13	-20.21	-20.11	4.35	3.51	0.84	5.79	4.79
2021-10-01	3.36	6.86	-3.50	--23.71	-23.59	4.35	3.51	0.84	6.64	5.48

MGNREGA in Employment Generation in the Northern States of India: An Evaluation of Punjab, Haryana & Rajasthan

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Abstract

The majority of the Indian population lives in rural areas, but the country has been facing many challenges, specifically poverty and unemployment for a long period in the way of rural development. It is also true that the number of poor people has declined in India from 2004-05 to 2011-12 (as per Tendulkar methodology) but the extent of poverty has remained more in rural areas in contrast to urban areas. Many employment schemes have been started in India from time to time but these couldn't achieve the desired results. Since, the National Rural Employment Guarantee Act (NREGA) started in 2005, to provide 100 days of guaranteed work to every household in rural areas, marginalized groups have been able to attain employment to some extent. The main objective of the paper is to evaluate the role of MGNREGA in the employment generation among the Scheduled Caste, Scheduled Tribe, and Women or we can say the deprived groups of the society in three northern states of India namely Haryana, Punjab, and Rajasthan. To explore this, average person days per household and average wage rate have been also found under these states. For this purpose, the data is extracted from the official website of MGNREGA for the years 2008-09, 2012-13, and 2016-17. It is found that MGNREGA performs better in Rajasthan as compared to the other two states studied for the northern region viz. Haryana and Punjab as well as in India in terms of Scheduled Tribe participation, women participation, and average person days per household.No doubt, MGNREGA has positively affected food security, and economic conditions and created many employment opportunities on the other side, various problems like poor implementation, corruption, wrong selection of work, lack of optimum utilization of funds, delay in wage payments, lack of worksite facilities and shortage of working days have also been found that hinder its performance.

1. Introduction

The majority of the Indian population lives in rural areas, but the country has been facing many challenges, specifically poverty and unemployment for a long period in the way of rural development. However, since the Fifth Plan, of which the main objective was to achieve growth with social justice, the efforts of rural development with special emphasis on poverty alleviation along with employment generation have been made (Sumitra & Bhodiakhera, 2015). It is also true that the number of poor people has declined in India from 2004-05 to 2011-12 (as per Tendulkar methodology) but the extent of poverty has remained more in rural areas in contrast to urban areas. In 2004-05, 40.7 crore people were

living Below the Poverty Line (BPL) in India out of which 32.5 crore (79.85 per cent of total poverty) belonged to rural areas and in 2011-12, out of 26.9 crore such people, 21.6 crores (80.89 per cent of total poverty) belonged to rural areas. However, during that period rural-urban poverty gap declined, for example, it was 16.50 percentage points in 2004-05 and declined to 12 percentage points in 2011-12 (Reserve Bank of India, 2015). Reduction in land holdings (Jodhka, 2014), slow growth of agricultural productivity, caste system, low level of literacy and skills, the decline in the cottage and small-scale industries, inadequate rural infrastructure, irrigation facilities, etc. are the various reasons for poverty and unemployment in rural areas (Mehta et. al 2004). For the absorption of the excess unemployed labour and to remove poverty from rural areas, different rural development schemes have been launched in India after Independence once and again. For rural employment, from the 1960s to 2000's schemes like Rural Manpower-1960-61, Crash Scheme for Rural Employment-1971-72, Pilot Intensive Rural Employment Programme-1972, National Rural Employment Programme-1980, Rural Landless Employment Guarantee Programme-1983, Jawahar Rozgar Yojana Employment Assurance Scheme 1993-94 were implemented. No doubt, all these schemes increased the opportunity for rural employment but could not achieve the optimum results. Likewise in the first year of the 21st century, Sampoorna Grameen Rozgar Yojana- 2001 was launched for providing gainful employment to rural poor by Panchayati Raj Institution and National Food for Work was launched in 2004 to provide supplementary wage employment (Kumar et. al 2010). In 2005, National Rural Employment Guarantee Act (NREGA) was started to provide 100 days of guaranteed employment to every household in rural areas.

MGNREGA has covered the whole of India in three phases. Earlier this scheme was named NREGA, and it was implemented only in 200 backward districts from 2nd Feb 2006 in the first phase and 130 additional districts were involved from 2007-08 in the second phase. From 1st April 2008, all remaining rural districts are covered in the third phase. Since 2nd October 2009, NREGA has been renamed MGNREGA (Ministry of Rural Development, 2012).

As per the Report of the Ministry of Rural Development (2013) MGNREGA is a powerful instrument for ensuring inclusive growth in rural India through its impact on social protection, livelihood security, and democratic empowerment. The main objectives of this scheme are: (i) Social protection for the most vulnerable people living in rural India by providing employment opportunities ; (ii) Livelihood security for the poor through the creation of durable assets, improved water security, soil conservation, and higher land productivity; (iii) Drought-proofing and flood management in rural India; (iv) Empowerment of the socially disadvantaged, especially women, Scheduled Castes (SCs) and Schedules Tribes (Sts), through the process of rights-based legislation; (v) Strengthening decentralized, participatory planning through the convergence of various anti-poverty and livelihood initiatives; (vi) Deepening democracy at the

grass-roots by strengthening Panchayati Raj Institutions; and (vii) Effecting greater transparency and accountability in governance. Various states are differing in attaining the objectives of this scheme.

2. Objectives & Methodology

The main objective of the paper is to evaluate the role of MGNREGA in the employment generation among the Scheduled Caste, Scheduled Tribe, and Women or we can say the deprived groups of the society in three northern states of India namely Haryana, Punjab, and Rajasthan. To explore this, average person days per household and average wage rate have been also found under these states. For this purpose, the data is extracted from the official website of MGNREGA for the years 2008-09, 2012-13, and 2016-17.

3. Brief Profile of the Selected States of the Northern Region

The Northern Region comprises Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, and Rajasthan, for the paper three states Haryana, Punjab and Rajasthan are selected. As per the Census 2011, from among the selected states, Rajasthan (5.66 per cent of the total population) is the largest state, followed by Haryana (2.9 per cent of the total population) and Punjab (2.29 per cent of the total population) in terms of population. More than 60 per cent (ranging from 62 per cent to 75 per cent) of the population is residing in rural areas in all the selected states of the northern region as well as in India. At the national level, the sex ratio is 943 but as compared to all of these three northern states; the sex ratio is lesser than the national level average figure of 943 and it is lowest in Rajasthan (928), followed by Punjab (895) and Haryana (879).

As we consider the literacy rate, in Punjab and Haryana literacy rate is more in contrast to Rajasthan and the national average literacy rate (72.99 per cent). Apart from this, Punjab (75.84 per cent) and Haryana (75.55 per cent) are the two states where more than ¾th population is literate and on the other side, comparatively a lesser share of literates is in Rajasthan (66.11 per cent). In India, approximately 1/5th share of the population is in pitiable conditions or we can say has been leading a life under BPL. Moreover, in Rajasthan (14.71 per cent) the highest, and in Haryana (11.16 per cent), a large chunk of the population is under BPL while it is comparatively less in Punjab (8.26 per cent). In the case of rural poverty, the ratio is such that more than 10 per cent belonged to BPL in Rajasthan (16.05 per cent) and Haryana (11.64 per cent) and on the other side, in Punjab (7.66 per cent) less than 10 per cent belonged to the BPL. Moreover, in all these three states Haryana, Punjab, and Rajasthan, the extent of poverty is less as compared to the national average figures of total poverty as well as rural poverty rate. Rural unemployment is the highest in Haryana (2.8 per cent), followed by Punjab (2.6 per cent), and Rajasthan (1.0 per cent). In Haryana and Punjab,the rural unemployment rate is more as compared to the national rural unemployment rate (2.3 per cent) but on the other side in Rajasthan, the unemployment rate is comparatively less.

Table:1 Selected Social and Economic Indicators of the Northern Region (2011)

Particulars	Haryana	Punjab	Rajasthan	India
Total Population (in thousands)	25351 (2.9)	27743 (2.29)	68548 (5.66)	1210855
Rural population (in thousands)	16509 (65.12)	17344 (62.51)	51500 (75.12)	833463 (68.83)
Sex Ratio	879	895	928	943
Literacy Rate	75.55	75.84	66.11	72.99
Poverty Rate (Total)	11.16	8.26	14.71	21.91
Rural Poverty	11.64	7.66	16.05	25.7
*Rural Unemployment	2.8	2.6	1	2.3
*Rural unemployment Gender Gap (M-F)	-1.6	-3.8	0.5	-0.8
*Rural Gender Gap in workforce Participation Rate (M-F)	29.3	40.6	9	23

Source:-Reserve Bank of India, 2017-18

Note:-* 68th round of NSSO, 2011-12

Note: - figures in parentheses of the total population show the share of the population out of total India's population.

Note: - figures in parentheses of the rural population show percentage of the rural population.

Apart from this, the rural gender gap in the workforce participation rate and the unemployment rate is more in Punjab (40.6 per cent, -3.8 per cent) and Haryana (29.3 per cent, -1.6 per cent) as compared to the national gender gap in the workforce participation rate and unemployment rate (23 per cent, -0.8 per cent), but mercifully in Rajasthan women are comparatively more hardworking and willing to do work for their subsistence earning, therefore their unemployment gap is higher and the gender gap in the workforce participation rate is also comparatively less than that is 9 per cent. Rajasthan has the largest number and share of the rural population, sex ratio, total poverty rate, and rural poverty rate amongst these three states on the other side, more rural women are employed and the gender gap in rural workforce participation rate also lower as compared to the other states as well as India because, it has been found that the population of the Rajasthan is facing notoriously poverty conditions, therefore, they are ready to do work even at a low rate of wages for the subsistence livelihood.

4. Share of Scheduled Caste & Scheduled Tribe Participation under MGNREGA

Empowerment of Scheduled Caste and Scheduled Tribe is one of the prominent objectives of MGNREGA, so the variations in the share of SC's and ST's in total people employed under MGNREGA in these states are explored in table 2. In 2008-09, at the national level out of the total workers, the share of Scheduled Caste was 29.29 per cent. In the selected northern states, more SC's had benefited in Punjab (74.22 per cent) as compared to Haryana (53.03 per cent). While on the other side, in Rajasthan their participation (28.29 per cent) was less than 30 per cent. As we analyse the SC's participation during the study's period, at thenational level average SC's participation fell from 29.29 per cent to 20.2 per cent, in Rajasthan it fell from 28.79 per cent to 18.19 per cent, and in Haryana from 53.03 per cent to 46.12 per cent. But MGNREGA seemed to be supportive concerning SC's participation rate in Punjab. The participation rate of SC's in Punjab has improved from 74.22 per cent to 77.44 per cent.

The participation of SC's under MGNREGA highly correlated with their proportion of population out of the total population. As per the Census 2011, the SC population is the highest in Punjab (31.94 per cent), followed by Haryana (20.17 per cent) and Rajasthan (17.82 per cent) and the same rank has been found under MGNREGA with respect to the share SC's participation. The studies (Singh et. al 2016) too revealed that in Punjab, MGNREGA is helpful to the weaker sections of the society to some extent in increasing the level of income and social security. However, the problems like poor coordination among beneficiaries, low level of education, lack of transparency and accountability, lack of trained staff, incomplete muster rolls, and low wage rate of gram sewaks are also noticed in the way of its successful implementation.

Table 2: Share of Scheduled Caste and Scheduled Tribe Participation under MGNREGA

Year	Haryana		Punjab		Rajasthan		India	
	SC	ST	SC	ST	SC	ST	SC	ST
2008-09	53.03	0.00	74.22	0.00	28.79	23.2	29.29	25.43
2012-13	50.74	0.03	78.66	0.03	18.46	23.9	21.51	16.33
2016-17	46.12	0.00	77.44	0.00	18.19	30.3	20.20	18.42

Source: www.nrega.nic.in

As we consider the ST's Participation, at the national level in 2008-09, only 1/4th was the proportion of the ST's population in total workers who got employment in this rural employment scheme. While comparing these northern states, in the case of Rajasthan 23.24 per cent ST's were able to get work under MGNREGA, but in

the other two states such that Punjab and Haryana their participation was almost negligible due to the very little proportion of this category in total population in these two states. As we compare the performance of MGNREGA about ST's participation during the study's time period at the national as well as in Rajasthan. It is found that at the national level, it dropped from 25.43 per cent to 18.42 per cent, but in the case of Rajasthan, the share has been enhanced from 23.24 per cent to 30.29 per cent. In Rajasthan, the share of ST's remained higher than that at the national level in all the years (except 2008-09) under MGNREGA. There is a direct and positive relationship between the ST's share of the population with their participation under MGNREGA. As in Rajasthan ST's population (13.47 per cent) is more as compared to India (8.2 per cent), therefore their participation in MGNREGA is also more as compared to the other two selected northern states as well as in India. Nayak et al. (2012) stated that most of the beneficiaries in Rajasthan through MGNREGA have been getting good opportunities to earn money to spend on food and non-food items and also help to educate their children.

In nutshell, we can say that MGNREGA is favorable for employment generation for both the Scheduled Caste and Scheduled Tribe's unemployed rural people, but in the case of SC's the rural population comparatively benefited more in the state of Punjab and on the other hand, a large number of ST's could grab the advantage of employment under MGNREGA in Rajasthan due to their highest share in total population.

5. Share of Women Participation in Total Employment under MGNREGA

The rural female unemployment rate is much higher than the rural male unemployment rate; So MGNREGA has specifically targeted women. MGNREGA can play a substantial role in economically empowering women and laying the basis for greater independence and self-esteem. However, provisions like a priority for women in the ratio of one-third of total workers [Schedule II (6)]; equal wages for men and women [Schedule II (34)]; crèches for the children of women workers [Schedule II (28)] were made in the act, with the view to ensuring that rural women benefit from the scheme in a certain manner (Azzez and Akhtar, 2015). Poor rural women are benefiting from the scheme, the studies like Bonner et al. (2012), has also found that poor women in rural areas have limited employment options and source of income so they are highly interested to participate in MGNREGA for the availability of work.

Women's participation under MGNREGA among the selected states has been presented in table 3. In 2008-09, at the national level those who got employment under MGNREGA, half were women. While exploring the share of women in the selected northern states, it is found that in Rajasthan (67.11 per cent) the share of women participation was more as compared to the share of national women participation (47.88 per cent), but lesser was the share of women in Haryana (30.64 per cent) and Punjab (24.62 per cent) who gained under this scheme. It is

also true that it raises their economic condition. Gupta & Pradeep (2013) in their study sustained that in the Faridabad district of Haryana, 70 per cent of the women respondent accepted that they take their own decision and better living condition just because of the MGNREGA. With time, MGNREGA has been proving pro-rural women, as their participation in northern states as well as in India has been increasing during the study's time period. In India, the share of women has increased from 47.88 per cent to 50.83 per cent, in Punjab 24.62 per cent to 59.68 per cent and in Haryana 30.64 per cent to 45.31 per cent. But, in Rajasthan, around two-thirds of the beneficiaries have remained women.

In 2016-17, all three states and India fulfil the mandatory women participation rate. This scheme is beneficial for Rajasthan's rural women as their overall work participation rate was stable at a high level, therefore, in rural areas only 0.7 per cent of women (NSSO 68th Round) were unemployed. Nayak et.al (2012) in their study revealed that in Rajasthan women became empowered both economically and socially through improvement in their education, health facilities, and decision-making in their families after becoming part of MGNREGA.

Women's employment under MGNREGA is highly and positively dependent on the labour force participation rate. As per the NSSO 68th Round, while having a look at the Labour Force Participation Rate (LFPR), from among the selected states Rajasthan (34.9 per cent) occupied the first, Punjab (23.7 per cent) second, and Haryana (16.4 per cent) the third positions in this respect. The same pattern of ranking has been found in women's participation under MGNREGA in these states.

Table 3: Share of Women Participation in total Employment under MGNREGA

Year	Haryana	Punjab	Rajasthan	India
2008-09	30.64	24.62	67.11	47.88
2012-13	39.88	46.67	68.99	51.65
2016-17	45.31	59.68	66.89	56.83

Source: www.nrega.nic.in

6. Average Person days per Household under MGNREGA

The main target of this act is to provide 100 days of guaranteed work to each rural household that demand work under it. So, whether it successfully achieved the target or not is also explored, and it is found that MGNREGA has been proved inefficient to provide sufficient work to rural households. In 2008-09, at the national level on average only 47.95 days' work was generated for rural households. Variation exists in the selected states of the northern region in this

respect, in Rajasthan average person days per household (75.78 days) was more as compared to the other two states as it could generate less than half in Haryana (42.41 days) and one-fourth in Punjab (26.87 days). During the study's time period, unfortunately in India as well as in other selected three states, the average number of person-days per household has declined at a very significant level. In India, it tumbles from 47.95 days to 15.27 days, in Rajasthan from 75.78 days to 16.92 days, in Haryana from 42.41 days to 12.91 days, and in Punjab from 26.87 days to 11.11 days. Lamentably, in 2016-17 the average number of person-days was not more than 17 per cent and it varies between 11.11 days to 16.92 days, as it was the highest in Rajasthan (16.92 days), followed by Haryana (12.91 days) and Punjab (11.11 days).

Table 4: Average Person days per Household under MGNREGA

Year	Haryana	Punjab	Rajasthan	India
2008-09	42.41	26.87	75.78	47.95
2012-13	43.57	27.08	51.9	44.63
2016-17	12.91	11.11	16.92	15.27

Source: www.nrega.nic.in

MGNREGA is just like a coin. On one side, it positively affected food security, and economic conditions and created many employment opportunities and on the other side, various problems like poor implementation, corruption, wrong selection of work, lack of optimum utilization of funds, delay in wage payments, and shortage of working days (Kaur, 2013).

7. Average wage Rate (in Rs.) per day under MGNREGA

MGNREGA is successful to eliminate the gender gap in wage rate by providing equal wages for both genders. The data relating to the average wage rate under MGNREGA has been presented in table 5. In 2016-17, in Haryana, the average wage rate was 63.98 per cent higher than national average wage rate and in Punjab, 33.9 per cent higher than the national average wage rate but in Rajasthan, it is 19.23 per cent lower compared to the national average wage rate. Khera and Nayak (2009) mentioned in their study that this employment scheme in India helps to reduce the migration rate and boost the average wage rate for casual labour in the agricultural sector.

Table 5: Average wage Rate (in Rs.) per day under MGNREGA

Year	Haryana	Punjab	Rajasthan	India
2008-09	238.06	197.62	109.17	143.92
2012-13	252.32	205.76	116.41	154.08
2016-17	259.88	214.01	125.57	161.65

Source: www.nrega.nic.in

The generation of average days depends positively upon the amount of expenditure and negatively on the average wage rate under this scheme. In 2016-

17, the total amount of expenditure done under MGNREGA was the highest in Rajasthan (Rs. 515295.11 lakh), followed by Punjab (Rs. 53,126.88 lakh) and Haryana (Rs. 32458.77 lakh). With respect to the average wage rate, the position is such that it was the highest in Haryana (Rs. 259.88), followed by Punjab (Rs. 214.01) and Rajasthan (Rs. 125.57). In Rajasthan on the one side, total expenditure is more and on the other side, the average wage rate is kept low, therefore more unemployed rural people were accommodated under this assured employment scheme. No doubt, many factors could have attributed to MGNREGA's better performance in Rajasthan, but the district administration's proactive efforts (Khera 2008) were also among them.

8. Conclusion

MGNREGA proved as an important source of employment for rural people in all three states. In the provision of rural employment opportunities among the vulnerable groups of the society, MGNREGA has been performing better in Rajasthan as compared to Punjab & Haryana states of the northern region as well as India in terms of Scheduled Tribe participation rate, women participation, and average person days per household. The share of women's participation in total employment under MGNREGA is positively related to LFPR, illiteracy rate, and sex ratio. In Rajasthan due to the large extent of poverty, women are keener for paid work for their subsistence livelihood and studies reveal that they are socially and economically empowered after getting work under MGNREGA. The real performance of this rural employment scheme is based on average person days per household rather than SC's, ST's, and women participation rates. At the start of this scheme, the average number of person days per household was good, but in the preceding years, the working days have lessened per household because demand for MGNREGA work is more comparatively the supply of work. Average days of work provided positively depend upon the amount of expenditure and negatively on the average wage rate under this scheme. In Rajasthan, the total expenditure done under the scheme is more but on the other side, the average wage rate paid is low, therefore more rural people could get work under this assured employment scheme. No doubt, MGNREGA has been positively affecting food security, and economic conditions and creating many employment opportunities but on the other side, various problems like poor implementation, corruption, wrong selection of work, lack of optimum utilization of funds, delay in wage payments, lack of worksite facilities and shortage of working days have also been found that hinder its performance. It is suggested that rural unemployment is the largest in Punjab, but its performance needs to be evaluated thoroughly so that more women can be involved in the employment process of MGNREGA. In Rajasthan, the average wage rate is low so more funds should be provided to Rajasthan. The share of women is the lowest in Haryana, so the scheme should target women's inclusion in the employment process. The big promise of 100 days of guaranteed employment has not been achieved rather average person days have been declining everywhere, it should also be increased.

References

Azeez, A. & Akhtar, J. (2015). MGNREGA and its performance. In Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) - Provision, implementation, and performance (pp. 1-25). New Delhi: New Century Publications.

Bonner, K., Daum, J., Duncan, J., Dinsmore, E., Fuglesten, K., Lai,L., …Quinn, R. (2012). MGNREGA implementation: A cross-state comparison. Woodrow Wilson School, Princeton University.

Census of India. (2011). Retrieved from http://censusindia.gov.in/

Das, D. (2012). Examining India's Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA): Its impact and women's participation. International Journal of Research in Management, 6 (2), 209-218.

Gupta, P., & Pradeep, D. (2013). MGNREGA and socio-economic empowerment of women: A case study on Faridabad district of Haryana, The Indian Society of Labour Economics, 70-71

Jodhka, S.S. (2014). Changing face of rural India. Economic and Political Weekly, XLIX (14), 28-31.

Kaur, K. (2013). Performance of MG-NREGA in Punjab: A case study of Barnala district. Department of Economics, Punjabi University Patiala.

Khera, R. (2008). Employment Guarantee Act, Economic & Political Weekly, 8-10.

Khera, R., & Nayak, N. (2009). Women workers and perceptions of the national rural employment guarantee Act. Economic and Political Weekly, XLIV (43), 49-57.

Kumar, A., Suna, B., & Pratap, S. (2010, September). Responding to people's protests about poverty: Making and implementation of the National Rural Employment Guarantee Scheme (NREGS) in India: Paper Presented at the International Conference on ten years of war against poverty: what have we learned since 2000 and what should we do in 2010-2020?, Manchester, 8-10 September.

Mehta, A.K., Panigrahi, R., & Sivramkrishna, S. (2004). Operationalizing multidimensional concepts of chronic poverty: An exploratory spatial analysis: CPRC-IIPA working paper 18. New Delhi: Chronic Poverty Research Centre.

Ministry of Rural Development. (2012). MGNREGA SAMEEKSHA: An anthology of research studies on the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (2006-2012). New Delhi: Government of India.

Ministry of Rural Development. (2013). Mahatma Gandhi National Rural Employment Guarantee Act 2005: Operational guidelines. New Delhi: Government of India.

National Sample Survey Organization.(2013). Key indicators of employed and unemployed in India in 2011-12. Government of India.

Reserve Bank of India. (2018). Handbook of statistics of Indian states. Mumbai: P.K Nayak.

Singh, G., Singh, B., & Singh, S. (2016). Mahatma Gandhi National Rural Employment Guarantee Scheme and weaker sections in Punjab: Performance, problems and possible solutions. Indian Journal of Economics and Development, 12 (3), 503-514.

Sumitra, & Bhodiakhera, G.C.W. (2015). Analysis of five-year plan in India. International Journal of Management and Social Science Research (IJMSSR), 4 (7), 53-57.

Income Sources of Farm Households at Sub-regional Level in Rajasthan: Determinants and Policy Implications

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Abstract

This paper is a part of a large-scale study done for assessing farmers' income in Rajasthan by the Niti Aayog Chair, University of Rajasthan, Jaipur. In this paper, we have examined the farm households' income from various income-generating activities at the sub-regional level in Rajasthan using the data from the study. The analysis has shown that, as against the common perception of agriculture being the dominant source of income for farm households, these households earn close to half of their income from the non-farm activity. The non-farm income is more important for the households at the lower end of land distribution. Livestock has been seen as an important bridge between the sources of agriculture and non-farm activity. The paper has tried to explain the regional income sources for farm households and their relative importance for that region. From the analysis it can be determined that Bharatpur, Bhilwara, Bikaner, Ganganagar, Jalore, and Kota should be getting prime importance from the perspective of agriculture; Bharatpur, Ganganagar, Jaipur, Jalore, Jodhpur, Kota, Sikar, and Udaipur should get preference in animal husbandry; while all the regions should be developed from the perspective of non-farm services as an alternative for agriculture and livestock activity in Rajasthan.

Keyword: Income diversification, non-farm sector, farmers, regional, Rajasthan
JEL Classification: Q12, R33, C2

1. Introduction

India has been an agriculture-based country. Though its share in the GDP has been declining, still a sizable population is dependent on agriculture for livelihood. During the period from 1980-81 to 2010-11, Indian agriculture has grown at an annual rate of around 3 per cent. Thereby resulting inan improvement in farm incomes and a reduction in rural poverty. However, post-liberalization, the farm sector has come under stress — the growth therein being decelerated to 2.7 per cent per annum during 1995-96 to 2009-10 from 3.2 per cent per annum during 1980-81 to 1994-95. But, the more worrisome is the continuance of excessive employment pressure on agriculture, despite a significant decline in its share in the national income.The agriculture sector employs nearly half (54 per cent) of the country's workforce in 2016-17, compared to 68 per cent in 1981. However, its share in the gross domestic product (GDP) declined from 40 per cent in 1981 to

15.3 per cent of the GDP (at current prices in 2016-17). Further, Indian agriculture is dominated by small land holdings, and the average size of landholding has shrunk to 1.16 ha in 2010-11 from 1.84 ha in 1980-81.

Since this sector influences the lives of several people, attempts have been made since independence to evolve an appropriate agricultural policy for producers' and consumers' welfare. It would be appropriate to examine whether agriculture can be a substantial source of the country's GDP in improving the farmers' incomes. (Committee on Doubling Farmers' Income, 2017). Over the last three decades, climate change also had a vital effect on agriculture production, thereby, affecting the farmers' income. Given these trends, there arises a basic question: how far farm households would survive on agricultural income in the backdrop of frequent agricultural disturbances? In a recent study, Birthal *et al*. (2014) reported that now farm households earn almost half of their income from non-farm income as compared to agriculture being the dominant source of income traditionally. This is evident from the fact that India's rural economy has undergone a gradual shift towards diversification in the agriculture and non-farm sector with its share in rural income increasing from 35 per cent in 1980-81 to 62 per cent in 2004-05 (GoI, 2010), and in rural employment from 22.3 per cent to 31.5 per cent (Lanjouw and Murgai, 2008).

Climate change and global warming are issues that impact all sectors of human life. Agriculture is particularly vulnerable to climate change. Climate change and its variability are emerging as major challenges facing Indian agriculture. The high inter and intra-seasonal variability in rainfall distribution, extreme temperature, and rainfall events are causing crop damage and huge losses to farmers. According to the report submitted by Standing Committee on Agriculture (2017), Horticulture is going to be one of the sectors which will be severely affected due to changes relating to flowering and pollination and yield losses caused by un seasonal rains and temperature variations. Similarly, for livestock, the report stated that a temperature rise of 1.0 or 1.20 C with a minor change in precipitation during March-August for India will marginally affect milk production. Both milk production and reproductive function of cattle and buffaloes will be adversely affected by the projected temperature rise of 2-60^{0}C over the existing temperature during the period 2070-2099.

Situation Assessment Survey of Agricultural Households (SAS) in 2013 (70th Round) conducted by NSSO estimated the average annual income of a farm

household from the farm as well as non-farm sources was Rs. 77,112. According to the survey, 60 per cent of the total income of an agricultural household was derived from farm activities (cultivation and farming of animals) and 40 per cent was derived from non-farm sources (wages, salary, non-farm business, etc.). In absolute terms, cultivation generated an annual income of Rs. 36,938 and livestock provided Rs. 9,176, per agricultural household. According to this estimate, the share of livestock activity in the total farm income of agricultural households was close to 19.89 per cent.

Chand, R., Saxena, R. & Rana, S. (2015) in their study has tried to explain various factors affecting farmers' income. They have provided the estimates of total and per cultivator farm income for the period 1983-84 to 2011-12 and identified the determinants of growth in farm income viz. increase in productivity, rise in real farm prices, and shift of labour force from agriculture.The study also observed that the income earned from agriculture was not adequate to keep as many as 53 per cent of farm households out of poverty, who operated on less than 0.63 hectares of landholdings. Chand, R. (2017) in his paper highlighted that the development strategy in agriculture didn't explicitly recognize the need to raise farmers' income since independence. Although India became self-sufficient in terms of agriculture production, in most cases farmers' income did not grow much with the increase in the output.Therefore, the study suggested some strong measures by harnessing major sources of growth operating within and outside the agriculture sector like productivity improvement, saving in cost of production, increase in cropping intensity, diversification towards high-value crops, shifting cultivators from farm to non-farm occupations, and improvement in terms of trade for farmers or real prices received by them.

Chakravorty, S., Chandrasekhar, S. & Naraparaju, K. (2016) in their paper has analyzed income generation and inequality in India's agricultural sector through the National Sample Surveys of agriculture in 2003 and 2013. The paper shows that: (a) income inequality in India's agricultural sector is very high (Gini Coefficient of around 0.6 during the period), (b) about half of the income inequality is explained by the household-level variance in income from cultivation, which in turn is primarily dependent on variance in landownership, and (c) there are significant state-level differences in the structures/patterns of income generation from agriculture.

Rajasthan's economy is predominantly agricultural and rural.The state has 342.7 lac ha of land, out of which 183 lac ha is the net cropped area. 75 per cent of the net cropped area is rainfed and the remaining is in the irrigated area. It has been noted that there exists a large variation in food grains production across states and very high risk is involved in food grains production in the states of Rajasthan, Maharashtra, Tamil Nadu, Odisha, Madhya Pradesh, and Gujarat (Chand and Raju, 2009). Rajasthan is broadly divided into four agroecological regions, Arid, Semi-arid, Humid, and Semi-humid, which are further categorized into 10 agro-climatic regions. The arid zone of Rajasthan spread over 12 districts occupied about 61 per cent of the total geographical area of the State. The semi-arid and humid regions account for about 16 per cent and 15 per cent of the total area, while the sub-humid region constitutes about 8 per cent of the total landmass. Rajasthan has varying topographic features though a major part of the state is dominated by parched and dry regions. The distinctive features of 10 Agro-Climatic Zones are presented in Table 1. SAS 2013 estimated that in Rajasthan, agriculture and allied activities provide a livelihood to more than 60 per cent of the population, with an average farmer income of Rs. 7,349 per month, which is greater than the national average of Rs. 6,247 per month.

A disintegrated study is thus required for analyzing the level of farmers' income, local impacts of climate change, and devising policies at the zonal/regional levelbased on agro-climatic zones. There is a need to shift from generalized policies to localized policies through differentiated strategies to bring about transformation in agriculture. The present study is an attempt in this direction, taking the state of Rajasthan and its agro-climatic regions as the scope of the study to analyze the sources of income for ten regions in 2017-18 and consequently identifying the reasons for regional disparities in agriculture development at sub-regional level in the state. This is a part of a larger study that has been conducted by Niti Aayog chair of the Rajasthan state to assess the level of income and suggest the necessary changes at the sub-regional level.

Therefore, a differentiated strategy is a need of the hour for agriculture and allied activities for all the states. In this paper, we have examined the farm households' access to different sources of income in ten regional zones of the state.

Table 1: Agro Climatic Zones of Rajasthan

Zone	Area	Total Area Million Ha	District Cover	Average Rainfall (mm)	Temp Celcius		Major Crops		Soils
					Max	Min	Kharif	Rabi	
IA	Arid Western Plain	4.74	Barmer & part of Jodhpur	200-370	40.0	8.0	Pearlmillet, Mothbean, Sesame,Moong, Guar	Wheat, Mustard, Cumin	Desert soils and sand dunes aeolian soil, coarse sand in texture some places calcareous
IB	Irrigated North Western Plain	2.10	Sriganganagar, Hanumangarh	100-350	42.0	4.7	Cotton, Clusterbean	Wheat, Mustard, Gram	Alluvial deposits calcareous, high soluble salts & exchange-able sodium.
IC	Hyper Arid Partial Irrigated Zone	7.70	Bikaner, Jaisalmer, part of Churu	100-350	48.0	3.0	Pearlmillet Mothbean Clusterbean	Wheat, Mustard, Gram	Desert soils and sand dunes aeolian soil, loamy coarse in texture & calcareous
IIA	Internal Drainage Dry Zone	3.69	Nagaur, Sikar, Jhunjhunu, Part of Churu	300-500	39.7	5.3	Pearlmillet Clusterbean Pulses	Mustard, Gram	Sandy loam, sallow depth red soils in depressions
IIB	Transitional Plain of Luni Basin	3.00	Jalore, Pali, Part of Sirohi & Jodhpur	300-500	38.0	4.9	Pearlmillet Clusterbean Sesame	Wheat, Mustard	Red desert soils in Jodhpur, Jalore & Pali sierzems in Pali & Sirohi, North-west lithosols
IIIA	Semi-Arid Eastern Plain	2.96	Jaipur, Ajmer, Dausa, Tonk	500-700	40.6	8.3	Pearlmillet Clusterbean Sorghum	Wheat, Mustard, Gram	Sierozens, eastern part alluvial, west brown soils
IIIB	Flood Prone Eastern Plain	2.77	Alwar, Dholpur, Bharatpur, Karauli, Part of S. Madhopur	500-700	40.0	8.2	Pearlmillet Clusterbean Groundnut	Wheat, Barley, Mustard, Gram	Alluvial prone to water logging, nature of recently alluvial calcareous has been observed
IVA	Sub-humid Southern Plain	3.36	Bhilwara,Chittor, Rajsamand, part of Sirohi & Udaipur	500-900	38.6	8.1	Maize, Pulses, Sorghum	Wheat, Gram	Soil are lithosolsat foot hills & alluvials in plains
IVB	Humid Southern Plains	1.72	Dungarpur, Banswara, Pratapgarh, part of Udaipur	500-1100	39.0	7.2	Maize, Paddy, Sorghum, Blackgram	Wheat, Gram	Predominantly reddish medium texture, well-drained calcareous, shallow on hills, deep soils in valleys
V	Humid South Eastern Plains	2.70	Kota, Jhalawar, Bundi, Baran, part of S. Madhopur	650-1000	42.6	10.6	Soyabean, Maize, Paddy	Wheat, Mustard, Gram	Black of alluvial origin, clay loam, ground water salinity

Source: www.agriculture.rajasthan.gov.in

2. Methodology

The Data

The study has used household-level data from the state representative primary survey conducted by the Niti Aayog Chair, at the University of Rajasthan in 2018 as a part of the project on the assessment of farmers' income in Rajasthan. The data collection was done by covering the whole state after dividing it into ten regional zones shown in Table 2. This project covered 1535 farm households spread over 126 villages in ten zones of the state. A farm household is one engaged in one or another agricultural activity during the survey period. The selection of households was based on the probability proportional to size (PPS) sampling technique where the probability of selecting a unit is proportional to its size. The project reports a number of income-generating farm and non-farm activities, but for this paper, we have classified these activities into four broad categories, viz. agriculture (cultivation), livestock, wages and salaries, and non-farm activity

Table 2: Regional bifurcation of the state as per agro-climatic zones

S.No.	Zone	Districts covered	No of HH	Percent
1	Bharatpur	Bharatpur, Alwar, Dholpur, Karauli, and Sawai Madhopur	249	16.5
2	Bhilwara	Bhilwara, Chittaurgarh and Rajsamand	119	7.9
3	Bikaner	Bikaner, Churu, and Jaisalmer	101	6.7
4	Ganganagar	Sriganganagar and Hanumangarh	86	5.7
5	Jaipur	Jaipur, Ajmer, Dausa, and Tonk	210	13.9
6	Jalore	Jalore, Pali, and Sirohi	119	7.9
7	Jodhpur	Jodhpur and Barmer	152	10.1
8	Kota	Kota, Bundi, Baran, and Jhalawar	114	7.6
9	Sikar	Sikar, Nagaur, and Jhunjhunu	187	12.4
10	Udaipur	Udaipur, Dungarpur, Banswara and Pratapgarh	170	11.3
11	Total	**Rajasthan**	**1507**	**100.0**

Source: Authors' compilation

The data were scrutinized for errors and outliers. There were a few households that had no access to land, owned or leased but had reported income from cultivation. Some households had also reported unusually low or high income from cultivation which was not in relation to their landholding size or household

size. These observations along with a few others were excluded from the analysis.

The income sources were defined as follows:

(i) Agriculture – it included income from the cultivation of cereals, pulses, oilseeds, cotton, fruits, vegetables, floriculture and medicinal plants.

(ii) Livestock – it included income from dairy, poultry, camel, sheep and goats.

(iii) Wages and salaries – they covered farm and non-farm wage earnings and salaries.

(iv) Non-farm activity –included income from manufacturing, hotels & restaurants, construction, mining & quarrying and other services.

There are some limitations also of this data set. First, the survey doesn't report income from sources like remittances and transfers, pensions, subsidiary activity sources, etc. Second, there might be an under-reporting of income from various sources by the respondents. Due to these limitations, household income could be underestimated by a slight margin.

Sources of income at a regional level

The income sources of farm households were categorized according to income quartile for the whole state. It was also categorized according to the landholding size to understand the effect of land size. The share of the sources of farm household income was calculated at a regional level to segregate the economic activity contributing as the major source of income in a particular region. The income share equations (regional level) were estimated using a seemingly unrelated regression equation (SURE) model:

$$Y_i = X_i\beta + u_i \quad i = 1,2,3,.....,10$$

This formulation combines parameter estimates and associated var-covariance matrices into a single parameter vector; thus, the simultaneous var-covariance matrix takes care of the contemporaneous correlation. This leads to an improvement in the efficiency of the parameter estimates as more information is now contained in the simultaneous var-covariance matrix. Therefore, firstly, SURE helps in gaining efficiency in estimation by combining information on different equations and secondly, to impose and/or test restrictions that involve parameters in different equations.

3. Results and Discussion

Level of income for farm households

The sources of income for farm households are listed in Table 3. The average income per farm household per annum is Rs. 90568. 'Non-farm activity' is the

biggest source of income for farm households in Rajasthan – 47 per cent of the households have reported having income from the non-farm activity, and it makes up 54.5 per cent of the total income on average. Livestock, with a share of 22 per cent of the total income, comprise the second largest income source, with a participation of 36 per cent of households. Surprisingly, agriculture, with the highest household participation of 76.4 per cent, contributes only 13.4 per cent to the total household income. The wages & salaries contribute about 10 per cent to the total household income with the participation of only 9.5 per cent of households. There is a considerable disparity in the contribution to income by different sources across income quartiles. Agriculture is the dominant source of participation, especially for the bottom 20 per cent of households but it accounts for only a 30 per cent share of income for them. This explains that cultivation is now no more a productive source of income for farm households. Similarly, non-farm activity has maximum participation from the top 20 per cent of households accounting for 76.7 per cent share in income for them. Livestock can be seen as a very important source of income (approx 50 per cent) for low-income farm households as a reliable fallback option in case of failure of agriculture for them. It's also seen that with the increase in household income the participation of households decreases in agriculture and increases in non-farm activity.

Table 3: Income sources of farm households by income quartile - State

Income quartile	No of HH	Avg Income per HH (Rs/ annum)	Income Sources							
			Agriculture		Livestock		Wages & Salaries		Non-farm Activity	
			Participation Rate (%)	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*
Lowest	378	26979	96.0	29.9	31.2	57.5	2.9	3.2	3.7	6.7
Second	372	71375	77.4	14.4	61.3	48.6	5.6	6.1	30.9	31.0
Third	369	103333	61.0	4.8	6.2	3.5	23.0	25.6	70.7	68.4
Highest	388	158779	70.9	15.5	45.1	15.9	6.7	4.8	81.7	76.7
All	**1507**	**90568**	**76.4**	**13.4**	**36.1**	**21.9**	**9.5**	**10.3**	**46.9**	**54.5**

Source: Authors compilation

Table 4 shows the income sources of farm households for all ten regions of Rajasthan. The table shows a similar pattern in income contribution and participation regionally as well. The contribution of non-farm activity to total income is highest in all the regions. The participation of households in non-farm activity ranges between 36 per cent (lowest) in the Udaipur region and 66.4 per cent (highest) in the Jalore region. The household participation in cultivation is more than 70 per cent on average in all the regions but its contribution to total

income has high variation ranging from 8 per cent (lowest) in the Jaipur region and 30.4 per cent (highest) in the Bikaner region. Livestock as an activity has shown relatively consistent participation ranging between 28 per cent (lowest) in the Udaipur region and 42 per cent (highest) in the Bharatpur region, while as a source of income it contributes between 17 percent to 25 per cent in the total income. The wages and salaries have the least participation in almost all the regions and its income share is lowest in Bharatpur, Bhilwara, Bikaner, Ganganagar, and Jalore regions, while in other regions it's higher than agriculture.

This pattern of income distribution at the regional level shows that the areas where there is availability of water (especially from sources other than monsoon) agriculture have some share in income for the household. It's evident from the table that the households have diversified their participation majorly towards livestock and non-farm activity as an alternative to agriculture in all the regions. There is a high diversification towards non-farm activity in all regions as a major source of income, especially, in those regions which are relatively developed. Livestock has been the necessary cushion for households as a source of income in all the regions, especially in those regions where agriculture is not able to deliver. The wages and salaries are more prominent as a source of income in Jaipur, Jodhpur, Kota, and Sikar due to the high migration of household members to other parts of the state and country.

Table 4: Income Sources of Farm Households at a Regional Level

S. No.	Region	No. of HH	Avg Income per HH (Rs/ annum)	Income Sources							
				Agriculture		Livestock		Wages & Salaries		Non-farm Activity	
				Participation Rate (%)	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*
1	Bharatpur	249	107772	77.9	17.6	42.2	21.8	9.2	8.4	51.0	52.2
2	Bhilwara	119	104768	75.6	15.1	39.5	19.3	7.6	6.9	52.1	58.6
3	Bikaner	101	103010	74.3	30.4	38.6	20.2	7.9	7.4	47.5	42.0
4	Ganganagar	86	82468	80.2	15.4	37.2	24.4	4.7	4.5	44.2	55.7
5	Jaipur	210	86894	75.7	8.1	36.7	23.8	11.0	12.1	49.0	56.0
6	Jalore	119	121803	74.8	11.3	36.1	17.2	6.7	5.8	66.4	65.6
7	Jodhpur	152	95442	74.3	7.4	36.2	21.5	11.2	11.9	48.0	59.2
8	Kota	114	79467	78.1	8.9	33.3	23.4	11.4	14.1	40.4	53.6
9	Sikar	187	66586	79.1	9.8	32.1	25.2	11.8	17.3	37.4	47.7
10	Udaipur	170	64274	73.5	10.7	28.2	23.8	9.4	14.7	35.9	50.8
11	Rajasthan	**1507**	**90568**	**76.4**	**13.4**	**36.1**	**21.9**	**9.5**	**10.3**	**46.9**	**54.5**

Source: Authors compilation

Another way of looking at the relative importance of an income source is through landholding size (Table 5). Other than landless farmers, all the farm households participate in agriculture. In agriculture, the share in total income increases with the increase in landholding size, showing a positive relationship between land size and income. Across different categories, participation rate and share in total income in livestock increases with the increase in the size of landholding, except the large landholding category. For wages & salaries, the participation rate and share in total income are inconsistent with the increase in landholding size. The share of non-farm activity in total income declines with the increase in landholding size, except for the large landholding category.

Almost all the households at the lower end of the land distribution are engaged in the non-farm activity, thereby getting the maximum income out of all the sources. As landholding size increases, the income share of agriculture and livestock increases, and other income sources become less important. The income from agriculture and non-farm activity contributes 72 per cent to the total household income of the large farmers (>4.00 ha). The small landholders due to acute land constraints are forced to engage themselves in low-paid wage activities, animal husbandry, and low-investment non-farm activity.

Table 5: Income sources of Farm Households by Landholding per Household

Landholding	Percent of Total HH	Income Sources							
		Agriculture		Livestock		Wages & Salaries		Non-farm Activity	
		Participation Rate (%)	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*	*Participation Rate (%)*	*Share in Income (%)*
Landless	23.6	0.0	0.0	9.3	4.6	1.4	2.6	99.7	94.1
Marginal (0.01-1.0ha)	25.3	100.0	12.7	12.9	8.4	21.0	27.7	37.8	52.1
Small (1.0-2.0 ha)	26.5	100.0	18.4	45.5	32.3	10.0	11.6	26.5	36.7
Medium(2.0-4.0 ha)	19.3	100.0	21.6	91.1	51.7	0.7	0.8	24.7	14.5
Large (>4.00 ha)	5.2	100.0	31.0	19.0	9.7	20.3	18.7	38.0	40.6
Total	100.0	76.4	13.4	36.1	21.9	9.5	10.3	46.9	54.5

Source: Authors compilation

The patterns of distribution of income sources by farm size and income level are in stark contrast. To probe this relationship further, we estimated the correlation of income sources with the landholding size and average income (Table 6). The non-farm activity income is negatively correlated with land size and positively corrected with the level of income. Similarly, agriculture is positively correlated with land size and negatively correlated with income level. Livestock is positively correlated with both. This implies that non-farm activity and livestock can serve

as potential entry points for land-constrained farm households to enhance their income level.

Table 6: Correlation coefficients of income share (%) with land size & Income

Income Source	Landholding (ha)	Level of Income
Non-farm activity	-0.45	10.657
Agriculture	0.298	-0.343
Livestock	0.420	0.156
Wages & salaries	.040	-.090

Source: Authors compilation

Sources of income at a regional level for farm households

Literature has identified a number of push and pull factors that motivate rural households to diversify their income, activity, and asset portfolios (Barrett et al., 2001). But, there is a dearth of studies that have tried to identify the level of income and its sources at the regional level within a state. To ascertain the relative importance of sources of income for farm households at the regional level within the state, we have estimated the seemingly unrelated regressions for all ten regions. The dependent variable was 'total income in the region', and the explanatory variables included share of sources, viz, 'agriculture', 'livestock', 'wages & salaries', and 'non-farm activity'.

The regression estimates for farm households' access to different sources in all the regions are presented in Table 7. In all the regions the sources of income are positively and significantly associated with the total income of the region, meaning thereby, that the model is a perfect fit we have thus analyzed the regression coefficients to determine how much of the variation in the dependent variable is explained by the explanatory variable.

Agriculture as a source of income has been the most important source due to the high dependency on employment for rural households in all the regions, but its share in total income has shown high variation. Agriculture as a source of income is prominent in Bikaner, Bharatpur, and Bhilwara regions only where it explains more than 50 per cent variation in total income. In the rest of the regions, its share in total income shows less than 50 per cent variation, which reflects that as income-generating activity agriculture is under huge distress and it calls for further investigation as to why there is a decline in agriculture-dependent income in these regions. Overall for the state, it explains more than 50 per cent variation in the total income.

On the other hand, livestock as a source of income has explained more than 50 per cent variation in total income in Bharatpur, Ganganagar, Jaipur, Jalore, Jodhpur, Kota, Sikar, and Udaipur regions. This implies that increasing uncertainty in agriculture livestock activity has tried to fill the gap wherever there is a decline in agriculture income for farm households. Overall for the state, it explains more than 50 per cent variation in the total income. Another implication of this variation is that livestock is becoming a more prominent and stable source of income for farm households in Rajasthan.

Wages and salaries have also explained the high variation in total income across the regions, especially in Jaipur, Jodhpur, Kota, Sikar, and Udaipur. These regions have a lot of employment opportunities due to the presence of the industry and services sector which has attracted the young family members of rural households. Overall for the state,

it explains more than 50 per cent variation in the total income, relatively higher than agriculture and livestock.

Lastly, we examined the relationship between non-farm activity and total income. The results suggest that non-farm activity explained more than 100 per cent variation in the total income in all the regions except in Bikaner, where agriculture is the most important source of income. This implies that non-farm activity has become the most important catalyst in income generation as the farm households have diversified their activities towards the non-farm sector. Even for the whole state non-farm activity has emerged as the most important source of income. Interestingly, in the case of Bikaner, if the farm household is generating maximum income from agriculture then the other sources become less important relatively.

Table 7: Regression estimates for the total income at the regional level

Total Income in Regions	Explanatory Variables (Income Source)				
		Agriculture	Livestock	Wages & Salaries	Non-farm Activity
Bharatpur (R1)	Coefficient	0.597	0.518	0.527	1.065
	Sig.	0.000	0.000	0.000	0.000
Bhilwara (R2)	Coefficient	0.507	0.446	0.445	1.121
	Sig.	0.000	0.000	0.000	0.000
Bikaner (R3)	Coefficient	0.959	0.389	0.380	0.695
	Sig.	0.000	0.000	0.000	0.000
Ganganagar (R4)	Coefficient	0.473	0.539	0.357	1.072
	Sig.	0.000	0.000	0.000	0.000
Jaipur (R5)	Coefficient	0.309	0.593	0.656	1.152
	Sig.	0.000	0.000	0.000	0.000
Jalore (R6)	Coefficient	0.421	0.542	0.508	1.160
	Sig.	0.000	0.000	0.000	0.000
Jodhpur (R7)	Coefficient	0.351	0.535	0.622	1.190
	Sig.	0.000	0.000	0.000	0.000
Kota (R8)	Coefficient	0.429	0.590	0.701	1.204
	Sig.	0.000	0.000	0.000	0.000
Sikar (R9)	Coefficient	0.354	0.589	0.755	1.035
	Sig.	0.000	0.000	0.000	0.000
Udaipur (R10)	Coefficient	0.290	0.646	0.779	1.190
	Sig.	0.000	0.000	0.000	0.000
Rajasthan	Coefficient	0.525	0.504	0.545	1.049
	Sig.	0.000	0.000	0.000	0.000

Source: Authors compilation

4. Conclusion and Policy Suggestions

Although agriculture is the dominant source of employment for farm households in Rajasthan, it contributes only 13.4 per cent to total income, whereas, non-farm activity contributes around 54 per cent to their household income. This has been reflected in all the regions except Bikaner. The share of non-farm income declines with landholding size but has a positive relationship with total income. This suggests that the non-farm sector can serve as a potential entry point for small landholders to enhance their income levels in all regions. This calls for a proactive government strategy towards strengthening the facilities and opportunities for a non-farm activity to provide sustainable livelihood to rural households.

Livestock has proved to be the most important link between agriculture and non-farm activity as a source of income in all the regions. It is the most consistent source of income for rural households and has a lot of potential as Rajasthan has 11 per cent of the total livestock population of India and it's the second-largest milk-producing state in India. In those regions where livestock is more prominent, the government should provide a favorable environment for the growth of the sector. This calls for sustained investment and marketing facilities for the produce.

Finally, the government needs to focus on the region-specific sources of income and develop the facilities for the specific activity. Thus with the help of disintegrated strategies the development of a particular source of income can be enhanced in that region rather than concentrating on a generalized strategy for the whole state which has limited success till now. From the analysis it can be determined that Bharatpur, Bhilwara, Bikaner, Ganganagar, Jalore, and Kota should be getting prime importance from the perspective of agriculture; Bharatpur, Ganganagar, Jaipur, Jalore, Jodhpur, Kota, Sikar, and Udaipur should get preference in animal husbandry; while all the regions should be developed from the perspective of non-farm services as an alternative for agriculture and livestock activity in Rajasthan.

References

Barrett, C.B., Reardon, T. and Webb, P. (2001) Non-farm income diversification and household livelihood strategies in rural Africa: Concepts, dynamics, and policy implications. *Food Policy,* **26**(4): 315-332.

Beckman, J. and Schimmelpfenning, D. (2015) Determinants of Farm Income. *Agricultural Finance Review*, **75**(3), 385–402.

Birthal, P.S., Negi, D.S., Jha, A.K. and Singh, D. (2014) Income sources of farm households in India: Determinants, distributional consequences, and policy implications. *Agricultural Economics Research Review*, **27**(1): 37-48.

Birthal, P. S., Singh, H. and Kumar, S. (2011) Agriculture, Economic Growth and Regional Disparities in India. *Journal of International Development*, **23:** 119–131.

Chakravorty, S., Chandrasekhar, S. and Naraparaju, K. (2016) *Income Generation and Inequality in India's Agricultural Sector: The*

*Consequences of Land Fragmentation.*Working Paper WP-028-2016.Indira Gandhi Institute of Development Research, Mumbai.

Chand, R., Saxena, R., and Rana, S.(2015) Estimates and analysis of farm income in India: 1983-84 to 2011-12. *Economic and Political Weekly,***22:** 139-145.

Chand, R., Garg, S. and Pandey,L. (2009)*Regional Variations in Agricultural Productivity: A District Level Study*. Discussion Paper NPP 01/2009 (pp.2-125).

Chand, Ramesh(2017)*Doubling Farmers' Income: Rationale, Strategy, Prospects, and Action Plan.* Niti Aayog Policy Paper No. 1, 1-40. Niti Aayog, New Delhi.

GoI (Government of India) (2010) *National Accounts Statistics, 2007*. Central Statistical Office, Ministry of Statistics and Program Implementation, New Delhi.

GoI(2017) *Volume: II -Status of Farmers' Income: Strategies for Accelerated Growth.* Report of Committee on Doubling Farmers' Income, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare, New Delhi.

GoI(2017) *Volume: I - March of Agriculture since Independence and Growth Trends.* Report of Committee on Doubling Farmers' Income, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare, New Delhi.

GoI(2014) *Key Indicators of Situation of Agricultural Households in India.*Report no NSS KI(70/33), National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, New Delhi.

Government of Rajasthan(2017) *Strategies of Doubling Farmers' Income in Rajasthan.* Department of Agriculture, Jaipur.

Joshi, P. K., Birthal, P.S. and Minot, Nicholas (2006)*Sources of Agricultural Growth in India: Role of Diversification towards High-Value Crops.* Discussion Paper No. 98.International Food Policy Research Institute, MTID, Washington, D.C.

Lanjouw, P. and Murgai, R. (2008) *Poverty Decline, Agricultural Wages and Non-Farm Employment in Rural India: 1983-2004.* Working Paper 437. Stanford Centre for International Development, Stanford University, Stanford.

Shastri, S (1988) Regional Disparities in Economic Development of Rajasthan (1961-84).*Indian Journal of Regional Science,* 20(1),11-28.

Impact of Quality of Governance on Growth and Human Well Being in Indian States: An Econometric Analysis

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Abstract

Despite somewhat similar central allocation of funds, different States in India have been achieving varying levels of Per Capita State Domestic Product (PC SNDP) and levels of Human Development.Is this because of variations in their governance levels? The basic objective of the paper is to assess how the Quality of Governance in different States impact the level and growth of PC SNDP and the Human Wellbeing. The study estimates Composite Quality of Governance Indices (CQGI) using 12 governance dimensions: namely Essential Infrastructure Index, Human Support Index, Governance Effectiveness, E-preparedness, Delivery of Justice, Economic Freedom, Fiscal Management, Women & Child Welfare, Social Support Index, Environmental sustainability, Law & Order, and transparency & Accountability. Drawing upon data of 30 Indian States over the period 2016 to 2020, panel regression analysis has been carried out with PC SDP and HDI, as outcome variable, and Quality of governance (CQGI) along with 12 individual governance indicators as the explanatory variables. Econometric results show that the quality of governance has positive and significant impact on both, the level and growth of PC SDP and the HDI. Further, Output elasticity of composite Quality of Governance (CGI) has been found to be higher than that of any one of the governance indicators. The major policy implication that follows from the regression analysis is that the states must focus on improving governance level, if they wish to come out of vicious cycle of low PC SDP & Low HDI. In particular, Essential Infrastructure Index, Human Support Index, Governance Effectiveness and E-preparedness have larger impact on growth & Human Wellbeing. Than the other governance (Input & Process) Indicators

1. Introduction

Good governance accelerates growth, equality and human development potential for the people and the society as a whole. Good governance, according to the World Bank is required to ensure sound development management. Quality of institutions provide foundation to good governance. Strong institutions improve economic performance; which in turn favorably impacts development process.

Various studies show, governance level of the states depends on administrative effectiveness, provision of basic industrial infrastructure, fiscal efficacy, peace and stability, transparency and accountability, delivery of social services like education and health, protection of women, child and weaker sections, environmental sustainability, economic freedom, and e-governance including various governance tools viz Citizens charter, RTI Act, public governance pedestal system.E-governance control corruption and entrances honesty which are crucial components of quality of governance. Besides hampering growth, corruption leads to increase in income inequality and poverty, because it results in

poor targeting of social programmes, unequal access to education and reduced social investment1.

Since 1990s, along with a renewed push by the Union Government for attaining sustainable and inclusive growth, various State governments also have contributed to it with their own efforts. Many states have begun issuing growth strategy papers or equivalent to outline strategic plans and to earmark financial resources to achieve their growth goals. Moreover, these strategies and promotion of public investment have supported good governance to increase overall growth of the economy.

For 'comprehensive' self propelling', 'sustainable' and 'inclusive' growth, four inter-dependent policies are required. They are: firstly, the resource allocation in the State budget should provide for adequate 'economic infrastructure', so as to provide stimulus to private investment. Secondly, growth should be broad based, i.e. more intensive in labour and agriculture, so as to benefit the poor. Thirdly, the resource allocation should cater to the requirement of basic education and health facilities, so as to improve social attainments and lead to higher Human Development Index. Fourthly, the 'asset base' of poor households should be strengthened, so that they can participate in the growth process and lead to inclusive growth.

2. Quality of Governance (CGI) and level of PC-NSDP

An analysis of quality of governance Indices (QGI) of the States over the period (2016-2020) shows that both the index value and the ranking of the States in terms of CQI and PC-NSDP has improved during the period under review, which corroborates our presumption that good governance initiatives yield improvement in performance level of various States. To measure level of development, Instead of absolute value of PC-NSDP, we constructed index of PC-NSDP for each period. Appendix I table 1 gives index of CGI and PC-NSDP for the period 2016-2020 for 20 Indian States. Analysis of these data show that the improvement in CGI has an accelerating effect on PC –NSDP by ensuring better utilization of resources.

Among high achievers, in both CGI and the PC-NSDP, the states like Haryana, Punjab, Gujrat, Himachal and Maharashtra are better placed in PC-NSDP. The growth of these states is probably more on account of higher level of infrastructure and fiscal management. Second group of high achievers in both CGI and PC-NSDP are the four southern states viz; Kerala, TN, Karnataka, Andhra and Telangana, where governance is probably playing greater role in attaining high level of PC-NSDP.

Odisha, MP, Bihar, UP, Assam are low performers, both in CGI and PC-NSDP. Implying that their PC-NSDP is low on account of both low level of provision of social economic infrastructure and low quality of governance. Rajasthan, Chhattisgarh, West Bengal, Uttrakhand, Jharkhand, can be described as 'Potential Performers' where though CGI is low their PC NSDP is improving.

3. Governance and Level of Human Development (HDI)

Growth in PCNSDP reflects financial growth of the economy, however over all wellbeing of the society involves education, health and life style level, besides living standard. Accordingly we constructed human development index. (HDI). Appendix I Table 2gives position of 20 states with respect to their CQGI and HDI for period 2016-2020.

The relationship between CGI and HDI suggests that a unit increase in CGI has a larger impact on HDI with each additional unit of increase in CGI. Kerala, Tamil Nadu, Andhra Pradesh, Karnataka and Haryana can be considered as States with high CGI and high HDI. Where level of CGI is stronger than their Human Development Index (HDI). The states, which have achieved high HDI high CGI include Maharashtra, Punjab and Gujarat, signifying that these States have reasonably high Human Development Index, despite relatively Poor CGI. Rajasthan, West Bengal, Odisha, Madhya Pradesh and Uttar Pradesh are in 'low CGI-low HDI zone' and therefore need to focus on both. Bihar, Assam, Odisha falls in a distressful category. They suffers from very low CGI and very low HDI.

The Matrix below depicts visual picture of performance where each of the selected 20 states stand in terms of their relative rank in HDI and CGI.

Table 1: Governance and HDI Matrix (Average of 2016-2020)

EAT CGI	Low HDI States	Middle HDI States	High HDI States
Low CGI	MP, UP, WB, Chhatisgarh, Odisha	-	-
Medium CGI	Rajasthan, Telangana, Andhra	Punjab, Gujarat, Haryana, Maharashtra	-
High CGI	-	-	Tamil Nadu, Kerala, Himachal, Karnataka

Source: Scholar's calculation based upon data from Ministry of Statistics and Programme Implementation (MOSPI) annual reports on Progress Card on Twenty Point Programme', Reserve Bank of India bulletins on 'State Finances". National Crime Records Bureau annual publication on 'Crimes in India, Planning Commission of India and Central Statistical Organisation, Ministry of Human Resource Development. 'Selected Educational Statistics' various issues.

4. Components of Human Development and Quality of Governance

To construct HDI, besides, Per Capita NSDP, we used Life Expectancy, Literacy Rate, Sex Ratio & Educational out comes as sub-indicators. The 12 governance indicators used in econometric Regression analysis were as follows:

EII – Essential Infrastructure Index.

HSI – Human Support Index

GEI – Governance Effectiveness Index.

EPI – E-Preparedness Index.

DJI – Delivery of Justice Index.

FMI – Fiscal Management Index.

EFI – Economic Freedom Index (Ease of Doing Business)

WCI – Women & Child welfare Index

SPI – Special Protection Index

LOI – Law & Order Index

TAI – Transparency & Accountability Index

CGI – Composite Governance Index.

5.1 Regression Models (Impact of Governance on PCNSDP)

To estimate impact of quality of Governance on growth (PCNSDP), following regression models have been attempted (In all 13 Regression Models viz M1a to M13a)

1: M-1a: PC-NDSP = $\int(\alpha$ + EII, Essential Infrastructure Index)

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12: M-12a: PC-NDSP = $\int(\alpha$ + TAI, transparency & Accountability Index)

13: M-13a: PC-NDSP = $\int(\alpha$ + CGI, Composite Governance Index)

5.2 Analysis of Regression Results (Impact of Quality of Governance on growth – PCNSDP)

The table A6.3 gives regression Results of Models M-1a to M-13a.

Regression equation in Model 1a to 12a estimated impact of one of the governance parameter at a time on level of PC NSDP.

The regression coefficient of Essential Infrastructure EII (Model 1a) being 1.0731 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of Human Support Indices HSI, (Model 2a) being 1.0056 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of governance Effectiveness GEI (Model 3a), being 0.8772 (with probability 0.0000) is significant at 99% level of confidence. The regression

coefficient of E-Preparedness Index, EPI (Model 4a) being 0.7253 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of Delivery of Justice, DJI (Model 5a) being 0.6361 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of Economic Freedom, EFI (Model 6a) being 0.2454 (with probability 0.0031) is significant at 99% level of confidence. The regression coefficient of Fiscal Management Index, FMI (Model 7a) being 0.3578 (with probability 0.0921) is significant at 90% of level of confidence. The regression coefficient of Women and Child Welfare Schemes, WCI (Model 8a) being 0.2873 (with probability 0.0629) is significant at 90% level of confidence. The regression coefficient of Social Protection Services, SSI, (Model 9a) being 0.1188 (with probability 0.5228) is not significant.

The regression coefficient of Environment ENI (Model 10a) being 0.4007 (with probability 0.0046) is significant at 99% level of confidence. The regression coefficient of Law and Order, LOI (Model 11a) being -0.0844 (with probability 0.4421) in not significant. The regression coefficient of Transparency & Accountability, TAI (Model 12a) being 0.0737 (with probability 0.5777) is not significant.

In Model 13a impact of Composite Governance Index, CGI on PC-NSDP level was estimated using linear – linear equations. It has been found that the coefficient of CGI 1.6427 with probability 0.0000 was higher than that of any one of the 12 governance parameters taken at a time. This result and correlation support the hypothesis that poorly governed States would not be able to grow quickly unless they improve their quality of governance.

5.3 Conclusions of Regression Results of Model M-1a – M-13a

To sum up,out of 12 governance variables the governance indicators which impact the level of PC-NSDP most are CGI (1.6427), EII (1.0731) and HSI (1.0056). The results are significant at 99% level of confidence.

Second set of variables, which also affect level of PC-NSDP significantly are the governance parameter viz GEI (0.8772), DJI (0.6361), EPI (0.7253), EFI (0.2454) and FMI (0.3578). The coefficients are positive & significant, implying that the effectiveness of governance, Rule of Law (DJI) Economic Freedom, E-governance & Fiscal efficiency, all impact the level of PC-NSDP positively & significantly.

The third set of governance input variable which do not impact level of PC-NSDP significantly though have positive relationship are WCI (0.2873), ENI (0.4007) and SSI (0.1188).

Fourthly, the two process indicator LOI (0.0061) and TAI (0.155631) with very low regression coefficient implies that the relationship of crime rate and corruption with PC-NSDP is not significant.

6.1 Regression Models (Impact of Governance on Human Development)

To estimate impact of governance on Human Development Index, following regression models have been attempted. (In all 13 Regression Models M1b to M13b)

1: M-1b: HDI = ∫(Initial HDI + EII, Essential Infrastructure Index)

……
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12: M-12b: HDI = ∫(Initial HDI + TAI, transparency & Accountability Index)

13: M-13b: HDI = ∫(Initial HDI + CGI, Composite Governance Index)

6.2 Analysis of Regression of Results (Impact of Governance on Human Development)

The table below A6.4 gives results of various Regressions Equations Models M-1b to M-13b.

The regression coefficient of Essential Infrastructure (EII) in Model 1b, being 1.073(with probability 0.0666) is significant at 99% level of confidence. The regression coefficient of Human Support Indices (HSI), (Model 2b) being 0.7251 (with probability 0.0000) is this significant at 99% level of confidence. The regression coefficient of governance Effectiveness GEI (Model 3b), being 0.5409 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of E-Preparedness Index, EPI (Model 4b) being 0.5603 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of Delivery of Justice, DJI (Model 5b) being 0.4666 (with probability 0.0000) is significant at 99% level of confidence. The regression coefficient of Economic Freedom, EFI (Model 6b) being 0.1824 (with probability 0.0035) is significant at 99% level of confidence. The regression coefficient of Fiscal Management Index, FMI (Model 7b) being 0.0630 (with probability 0.6944) is not significant at all. The regression coefficient of Women and Child Welfare Schemes, WCI (Model 8b) being 0.1748 (with probability 0.1334) is not significant even at 90% level of confidence. The regression coefficient of Social Protection Index, SSI, (Model 9b) being 0.2642 (with probability 0.0576) is significant at 90% level of confidence.The regression coefficient of Environment ENI (Model 10b) being 0.1266 (with probability 0.2397) is not significant.The regression coefficient of Law and Order, LOI (Model 11b) being 0.0141 (with probability 0.8650) is not significant. The regression coefficient of Transparency & Accountability, TAI (Model 12b) being 0.0969 (with probability 0.3300) is not significant.In Model 13b when tested in the Linear – linear model, it has been found that the coefficient of CGI 1.6427 with probability 0.0000 was higher than that of any one of that 12 governance parameters taken at a time. This results correlation and support the hypothesis that poorly governed States would not be able to grow studying unless they improve their quality of governance a policy

impaction have is that. If the states are to grow rapidly in turning of HDI, they have to over serious attention to their quality of governance.

6.3 Conclusions of Regression Results

To sum up, out of 12 governance variable 7 of them viz HSI, Human Support Index (0.7110), EII, Essential Infrastructure Index (0.4513), WCI, Women & Child Index (0.4780), SSI, Social Support Index (0.2908), EPI, E-Preparedness Index (0.2361) GEI, Governance Effectiveness Index (0.2267) and EFI, Economic Freedom Index (0.0976) have significant impact on HDI in that order.

While the impact of remaining 5 variables viz DJI, Delivery of Justice Index (0.0997), FMI, Fiscal Management Index (0.0783), TAI, Transparency & Accountability Index (0.0589) and LOI, Law & Order Index (0.0531) is not significant on HDI.

The policy implication of above regression results are that if states are to improve their HDI they need to improve their quality of governance in terms of HSI, EII, WCI, SSI, EPI, GEI and EFI in that order.

The states poor in governance on the above 7 governance parameters includes; Bihar, Assam, MP, UP, Odisha, they are obviously low in HDI index (at the bottom of ranks).

Out of above 7 governance parameters 4 are governance input indicators viz HSI, EII, WCI and SSI while the other 3 are governance process indicators. The lesson to be learnt is that to improve the HDI States need to focus on better governance & effective enforcement of government policies wrt education, Health Women, Children, and weaker sections.

At the same time States need to improve governance process/ performance viz Governance effectiveness (GEI), E-governance (EPI) and Ease of Doing Business (EFI). The habit of some of the states to just clamor for more funds from the Centre and not to give attention to their governance effectiveness viz, Ease of Business and E-governance, need to be dis-encouraged.

7 Conclusion Policy Implications

7.1 Focus on Essential Infrastructure Related Governance Strategy are Critical to boost the growth and Human Development

Relative impact of governance strategies related to essential infrastructure like roads, power and communication on the growth of PC-NSDP and HDI (regression coefficient being 1.0700 and 0.6335) is found to be significant. Moreover, focus on roads, power and communication has higher multiplier effect on industrialization, rural marketing, movement of goods & services, agricultural production and growth of tertiary sector. It facilitates movement of labour, easy availability of inputs at the factory site and quick communication of data and information.

Therefore, increased focus of governance on transport, power and communication sector deserves priority. The states which have higher (rank 1 to 8) index of Essential Infrastructure viz. Panjab, Himachal, Haryana, Gujrat, TN, Andhra and Maharashtra and Kerala also happens to be the top 8 states in PC-NSDP growth.

On the other hand, bottom 8 states in Essential Infrastructure rank (ranks 13 to 20) viz UP, WB, Chhattisgarh, MP, Bihar, Jharkhand, Assam and Odisha (having EII index between 0.5666 & 0.3156) also happen to be the bottom states in achieving level and growth of PC-NSDP (Chhattisgarh – 13, Odisha – 14, WB – 15, UP – 16, Assam – 17, MP – 18, Jharkhand – 19 and Bihar – 20 Rank).

The policy implication is that to achieve higher growth in PC-NSDP slow growing states need to make investment in sectors like, transport, power and communication.

7.2 Focus on Education, Health and Skill Enhancing Services is Critical for Growth and Human Development.

Another main finding of this analysis is that there is need to boost governance of the education and health sector, particularly in the States having low education and health attainment levels (HSI Index). Our regression results show that Human Support Index (reflecting Education & Health) has higher impact on growth of PC-NSDP and HDI (regression coefficient being 1.0056 and 0.7251) as compared to most other governance input indicators viz, social welfare, forest, judicial administration, policing etc.

In our Linear - linear regression models, regression coefficient other governance indicators viz DJI (0.0100, 0.4660), WCI (0.2873, 0.1748), SSI (0.1188, 0.2642), ENI (0.1743, 0.1266), and LOI (0.0061, 0.0140). In the light of these results, the current trend of reduced attention to education and health needs reversal. In poor States, the state of human capital is a matter of concern. The bottom 8 states in HSI Index viz Rajasthan (0.46), Odisha (0.46), Chhattisgarh (0.42), Assam (0.40), Jharkhand (0.32), UP (0.30), MP (0.29), Bihar (0.29) also happens to be the bottom states in PC-NSDP. The PC-NSDP index and rank of these 8 states happens to be Rajasthan 13/0.38, Odisha (13/0.40), Chhattisgarh (14/0.37), Jharkhand (19/0.34), Assam (17/0.34), UP (16/0.34) MP (18/0.34), Bihar (20/0.25).

7.3 Critical role of governance effectiveness and Delivery of Justice on the growth of the economy and Human Development

Taken one at a time, the out-come variables viz PC-NSDP and HDI are impacted by governance process indicators namely CGI, GEI, DJI and EPI with their regression co-efficient CGI (1.6427, 1.6427) , GEI (0.877, 0.5409), DJI (0.6361, 0.4666) and EPI (0.7250, 0.5603) implies that the growth in PC-NSDP and the HDI can be accelerated substantially by inproving governance effectiveness.

The top 8 states in high CGI, GEI, DJI and EPI (viz Tamil Nadu, Punjab, Haryana, Gujarat, Karnataka, Kerala, Himachal, Maharashtra) also happen to be states with high ranking among ranking of PC-NSDP and HDI.

On the other and of the spectrum the bottom states 8 in CGI, GEI, DJI and EPI viz, Bihar, Jharkhand, Assam, UP, Odisha, MP, Chhattisgarh and West Bengal also happen to be the slow growing states in PC-NSDP (ranks 13 to 20 among 20 states).

It means effective enforcement of government programs coupled with effective top holding of Rule of Low (DJI) and E-governance lead to higher growth in PC-NSDP with same amount of public expenditure in various sectors.

7.4 Focus on environment, women and weaker sections helpful in sustaining growth of the economy and Human Well being.

The regression coefficient of environment ENI (0.4007**, 0.1266) women welfare schemes WCI (0.2873**, 0.1748) and social protection prog.SSI (0.1188*, 0.2642)) are reasonably positive and significant. The implication is that the sectoral focus in the governance on Environment, women, children & weaker sections lead to boost in growth of economy to a rescuable level.

7.5 Declining Law & Order climate and increasing cases of corruption – a drag on economy

Regression coefficient of LOI (-0.0061) and TAI (-0.1563) implies that while the economy is growing and the general governance quality is also improving, the level of crime and corruption is also increasing in some of the advanced states. The lesson here is that if the growth has to be long lasting, the state governments need to control crime and corruption.

References

Basu, S. R. (2004). Economic growth, well-being and governance under economic reforms: Evidence from Indian States. Graduate Institute of International Studies.

Basu, Sudip Ranjan (2002). 'Does Governance Matter? Some Evidence from Indian States', Correlating Growth with Well-being during Economic Reforms: Evidence from India and China'.

Basu, Sudip Ranjan (2003): Estimating the quality of economic governance: A cross-country analysis.

Bhattacharjee, J. (2016). Economic growth of states in India: does governance matter. Journal of Governance & Public Policy, 6(1), 24.

Centre for Good Governance (CGG) "Good Governance Index Assessment of State of Governance (2015)"

Chakroborty Pinaki (2009), "Intra- Regional Inequality and the Role of Public

Policy: Lessons Learnt from Kerala," Economic and Political Weekly, Vol. 44, No. 26.

Dreze, Jean and Sen, Amartya: "An uncertain glory: India and its contradictions:" Allen Lane, Penguin Group, 2013.

Dwivedi and O.P, Mishra D.S. (2005). A Good Governance Model for India: Search From within, Indian Journal of Public Administration. Vol-l1 Oct.

Economic Survey, 2020-21, Volume I, II, III, Ministry of Finance, Govt. of India.

Guha, A. and D. Chakraborty (2003), "Relative Positions of Human Development Index Across Indian States: Some Exploratory Results", Artha Vision, Vol. 11, No. 4

Kaufmann, D., A.Kraay, and P.Z-Lobaton. (1999a). 'Aggregating Governance Indicators', World Bank Policy Research Working Paper, #2195.

Kaufmann, D., Kraay, A. & Mastruzzi, M. (2010). The Worldwide Governance Indicators: Methodology and Analytical Issues, World Bank Policy Research Working Paper No. 5430.

Khan, M. H. (2009). Governance and Development.

Mandle, S., Chowdhury, S. & Sikdar, S. (2016). Governance Performance of Indian States 2001-02 and 2011-12, Economic and Political Weekly, 51 (36), pp: 55-64.

Mathew, C. K et al. (2017). Public Affairs Index. Bangalore: Public Affairs Centre.

Mital, P. (2016). Social Sector Expenditure and Human Development of Indian States, MPRA Paper

Mohan Deepanshu. (2017). The inequality of access' Across India, Centre for New Economics Studies (CNES).

Mousheen Sodhi, Upinder Sawhney (2019) Governance in Major Indian State: A Comparative Analysis of 2004 and 2014 Journal of Governance & Public policy. ISSN 2231-0924 roe-9, No-2 July – Dec 2019, PP-16-29

Mukherjee,S., D.Chakraborty and S.Sikdar (2014), "Three Decades of Human Development across Indian States: Inclusive Growth or Perpetual Disparity?", Working Paper No. 2014-139, National Institute of Public Finance and Policy, New Delhi.

Mundle, S., Chowdhury, S., & Sikdar, S. (2016). Governance Performance of Indian States 2001-02 and 2011-12. National Institute of Public Finance and Policy Working Paper No. 164.

PAI Index by Public Affaris Centre, Bangalore. Report -2016, 2017, 2018, 2019 and 2020.

Rao, Govinda M, Shand R T and Kalirajan, K P (1999) "A Convergence of

Income Across Indian States A Divergent Issue", Economic and Political Weekly, Vol. 34, No. 13

Reena Baliyan(2017), "Governance and Development in Major States of India", International Journal of Research in Humanities & Soc. Sciences, Vol.5, Issue:5, May, 35-45.

Rodrik, Dani 2002. Institutions, Integration, and Geography: In Search of the Deep Determinants of Economic Growth. Princeton NJ.

Rodrik, Dani. 1999. Institutions for High-Quality Growth: What They Are and How to Acquire Them.

SDG India Index, NITI Ayog, GOI. Report 2018, 2019 and 2020.

Sen, Amartya (1995): Inequality Re-examined: Harvard University Press.

Singh Nirvikar. (2015). The Economic consequences of India's Institutions of Governance.

Sodhi, N., & Sawhney, U. (2019). Governance in Major Indian States: A Comparative Analysis of 2004 and 2014. Journal of Governance & Public Policy, 9(2), 16-103.

Suryanarayana, M. H., Agrawal, A., & Prabhu, K. S. (2016). Inequality-adjusted human development index: States in India. Indian Journal of Human Development, 10(2), 157-175.

Swan, T. (1956):Economic Growth and Capital Accumulation. Economic Record 32, 334-61.

Working Paper on Computing HDI, GDI, GII for states of India, NSO, MoSPI, GOI.

Sustainable Development in a Dynamic World: Transforming Institutions, Growth, and Quality of Life. (2003)

World Bank 2005a. Governance Indicators: 1996-2004. Washington DC: World Bank.

Appendix

Table A6.1: Level of CGI and PC-NSDP (2016-2020)

State	Rank	2016		2017		2018		2019		2020	
		NSDP	CGI	NSDP	CGI	NSDP	CGI	NSDP	CGI	NSDP	CGI
Haryana	1	0.70	0.46	0.74	0.49	0.77	0.51	0.82	0.54	0.86	0.57
Maharashtra	2	0.62	0.49	0.65	0.52	0.69	0.54	0.71	0.56	0.75	0.59
Karnataka	3	0.61	0.52	0.66	0.55	0.69	0.56	0.72	0.6	0.76	0.62
Gujarat	4	0.61	0.49	0.67	0.54	0.72	0.55	0.77	0.57	0.81	0.6
Kerala	5	0.60	0.53	0.64	0.56	0.68	0.57	0.70	0.59	0.73	0.62
Tamil Nadu	6	0.57	0.54	0.62	0.58	0.66	0.6	0.70	0.63	0.70	0.65
Himachal	7	0.57	0.49	0.60	0.52	0.64	0.54	0.66	0.57	0.70	0.6
Punjab	8	0.49	0.52	0.52	0.54	0.54	0.55	0.56	0.57	0.58	0.6
Uttrakhand	9	0.46	0.45	0.49	0.49	0.52	0.49	0.53	0.51	0.56	0.53
Andhra	10	0.44	0.47	0.48	0.49	0.50	0.51	0.53	0.53	0.56	0.57
Telangana	11	0.41	0.48	0.44	0.5	0.49	0.55	0.52	0.56	0.54	0.6
Rajasthan	12	0.33	0.42	0.34	0.46	0.35	0.47	0.37	0.49	0.38	0.52
Odisha	13	0.37	0.39	0.34	0.42	0.36	0.42	0.38	0.44	0.40	0.48
Chhattisgarh	14	0.31	0.41	0.32	0.43	0.34	0.45	0.35	0.47	0.37	0.49
West Bengal	15	0.28	0.42	0.30	0.43	0.32	0.43	0.33	0.46	0.34	0.18
UP	16	0.25	0.39	0.28	0.42	0.31	0.42	0.32	0.45	0.34	0.47
Assam	17	0.25	0.38	0.27	0.4	0.29	0.43	0.32	0.44	0.34	0.47
MP	18	0.25	0.4	0.28	0.44	0.29	0.43	0.32	0.45	0.34	0.47
Jharkhand	19	0.23	0.34	0.24	0.35	0.26	0.37	0.29	0.38	0.34	0.41
Bihar	20	0.14	0.31	0.17	0.32	0.20	0.33	0.21	0.34	0.25	0.36

Source: NITI Aayog, GoI; Ministry of MHRD, GoI; RBI Bulletins; National Crime Record Bureau and MoSPI, GoI

Table A6.2: Human Development Index and Quality of Governance (2016-2020)

State	Rank	2016		2017		2018		2019		2020	
		HDI	CGI	HDI	CGI	HDI	CGI	HDI	CGI	HDI	CGI
Kerala	1	0.81	0.53	0.81	0.56	0.82	0.57	0.84	0.59	0.83	0.62
Karnataka	2	0.55	0.52	0.55	0.55	0.56	0.56	0.58	0.60	0.59	0.62
Uttrakhand	3	0.55	0.45	0.56	0.49	0.58	0.49	0.58	0.51	0.61	0.53
Himachal	4	0.54	0.49	0.55	0.52	0.55	0.54	0.59	0.57	0.62	0.60
Maharashtra	5	0.53	0.49	0.54	0.52	0.56	0.54	0.60	0.56	0.61	0.59
Gujarat	6	0.50	0.49	0.51	0.54	0.51	0.55	0.57	0.57	0.58	0.60
Tamil Nadu	7	0.49	0.54	0.51	0.58	0.52	0.60	0.57	0.63	0.59	0.65
Punjab	8	0.45	0.52	0.46	0.54	0.47	0.55	0.49	0.57	0.50	0.60
Haryana	9	0.42	0.46	0.44	0.49	0.45	0.51	0.46	0.54	0.48	0.57
Andhra	10	0.40	0,47	0,42	0.49	0.43	0,51	0.45	0,53	0,46	0.57
West Bengal	11	0.38	0.42	0.39	0.43	0.41	0.43	0.42	0.46	0.44	0.48
Rajasthan	12	0.33	0.42	0.36	0.46	0.39	0.47	0.41	0.49	0.41	0.52
Telangana	13	0.32	0.48	0.35	0.50	0.37	0.55	0.40	0.56	0.44	0.60
Assam	14	0.31	0.38	0.32	0.40	0.34	0.43	0.35	0.44	0.36	0.47
Jharkhand	15	0.28	0.34	0.31	0.35	0.32	0.37	0.36	0.38	0.39	0.41
Bihar	16	0.26	0.31	0.27	0.32	0.28	0.33	0.29	0.34	0.31	0.36
Odisha	17	0.26	0.39	0.28	0.42	0.31	0.42	0.35	0.44	0.36	0.48
Chhattisgarh	18	0.20	0.41	0.21	0.43	0.21	0.45	0.25	0.47	0.27	0.49
MP	19	0.19	0.40	0.19	0.45	0.22	0.43	0.25	0.45	0.26	0.47
UP	20	0.17	0.39	0.18	0.42	0.19	0.42	0.20	0.45	0.21	0.47

Source: NITI Aayog, GoI; Ministry of MHRD, GoI; Ministry of Statistics and Programme Implementation GoI

Table A6.3: Regression of Results - (Impact of Governance on growth-PCNSDP)

Model	M-1a	M-2a	M-3a	M-4a	M-5a	M-6a	M-7a	M-8a	M-9a	M-10a	M-11a	M-12a	M-13a
Dep Var/ Ind Dep Vars	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP
CGI													1.3427*** (0.1358)
[illegible]	[illegible]												
[illegible]		1.0506*** (0.1076)											
[illegible]			0.8772*** (0.0815)										
[illegible]				0.4257*** (0.1796)									
[illegible]					[illegible]								
[illegible]						0.2157*** (0.0815)							
[illegible]							0.3378 (0.2118)						
[illegible]								[illegible]					
SSI									[illegible] (0.1657)				
[illegible]										0.4027*** (0.1394)			
[illegible]											[illegible] (0.1196)		
[illegible]												0.1757 (0.1025)	
Cons	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
R Squared	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Adjusted R-squared	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0134	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.4835
S.E. of Regression	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.3124	[illegible]	[illegible]	0.2087	0.314	[illegible]	[illegible]
F-Statistic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.8748	[illegible]	[illegible]	8.7627	0.5938	[illegible]	[illegible]
Prob (F-Statistic)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.4471	[illegible]	[illegible]
No. of States	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of Observations	5	5	5	5	5	5	5	5	5	5	5	5	5
Total Panel	150	150	150	150	150	150	150	150	150	150	150	150	150

* The sentence in bracket shows standard error of that particular regression coefficient.

*** - Shows significant at the 99% level of coefficient

** - Shows significant at the 95% level of coefficient

* - Shows significant at the 90% level of coefficient

Table A6.4: Regression of Results - Models M-1b to M-14b

Model	M-1b	M-2b	M-3b	M-4b	M-5b	M-6b	M-7b	M-8b	M-9b	M-10b	M-11b	M-12b	M-13b	M-14b
Dependent variable	RER	RER	RER	RER	RER	RER	RER	RER	RER	RER	RER	RER	RER	RER
GFD														
EI														
GFD														
EPI														
TI														
EPI														
PCI														
SSI														
Constant														
R Square														
Adjusted R Square														
Durbin-Watson Statistic														
F-statistic														
Probability (F-statistic)														
Number of Observations														

* The sequence in bracket shows standard error of that particular regression coefficient.

*** - Shows significant at the 99% level of coefficient

** - Shows significant at the 95% level of coefficient

* - Shows significant at the 90% level of coefficient

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