AN EVALUATION OF THE MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME AND AN EMPIRICAL INVESTIGATION OF SUSTAINABLE RURAL DEVELOPMENT IN WEST BENGAL

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Abstract

United Nations has declared 2015–2030 as sustainable development decade. The development emphasis and approach has changed from economic development to human development and then to sustainable development. Korea has developed green growth indicator , wherein, energy is the key component (UNESCAP, 2013). United Nations has developed seventeen indicators for sustainable development and use of renewable energy is one among them (United Nations, 2015)(sustainabledevelopment-goals-united-nations, 2015).Nobel Prize, 2018 for Economics was given to William Nordhaus and Paul Romer for their excellent work on environmental economics (nobel-prize-in-economics, 2018). Today the world is more concerned about sustainable issues like, cultural sustainability, political sustainability, economic sustainability and environmental sustainability. Many studies have proved positive and long-run relationship between resources and economic development (Cheng, 1995), (Yu, 1992). Each act of human being has been looking with the lens of sustainable approach (Asafu-Adjaye, 2000). Having said this, rural development is not an exception to this.

Paper Identification

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Introduction

The World Bank has observed that Infrastructure if not the engine of growth it is the wheel of development (World Bank, 1994). Resources are the sources for the construction of infrastructure. Matters of fact, resources are essential for development, whereas, eco-efficient and clean resources are critical for sustainable development. Adequate, reliable and affordable resources are the pre-requisite for development (Premakumara, GS, 2012), (Masih, 1996). The demand for resources has been significantly increased, according to the needs of development. Globalization and modernization processes have further increased the need for resources. There is positive relationship between demand for resources and development. In the meantime, there is inverse relationship between use of resources and sustainable development. Extensive use of resources steadily decreases the stock of resources; which harms the quality of future generation. Therefore, efficient use of renewable and non-renewable resources is necessary for eco-efficiency and sustainable development. By definition sustainable development means fulfill the needs of present generation without compromising opportunities of the future generation (Brundtland). There is a limit to growth and resource scarcity for sustainable development (Donella, Dennis, Jorgen, & William, 1972)(Marshall, 1890, 1920). Therefore, resources, quality of resources and efficient use of resources have been treated as major concerns of sustainable development.

Over the period of time the environment of the world has been largely changed and made the life of humans difficult and it could be further difficult for the future generation. The world temperature has increased by one degree Fahrenheit since 1950 which is leading global warming (NASA earth observatory). Carbon emission has been increased 1/3 since 1750, from 280 to 386 which is leading to increased pollution. The sea level has been increased 1/10 inch per year which is leading to submerge of cities and sea shores. Sustainable and climate issues are being associated with global warming, increased carbon and increasing sea level. In all the levels of

resource allocation, production, exchange and consumption carbon will be generated and it will result in global warming and increasing sea level. Therefore, reducing the carbon is the dire need of the day. Accordingly, protecting, preserving, and minimized use of resources with efficiency is the immediate requirement of the all economies of the world (Praveen & Premakumara, 2017). Matter of fact, preserving healthy environmental world and ensuring the quality life of future generation are the responsibilities of present generation. Accordingly, sustainable development is the goal of United Nations (United Nations, 2015). Therefore, any act of rural development should ensure cultural, political, economic and environmental sustainability.

Significance of the Study:

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was started on 2nd February 2006 and has completed more than 15 years. The programme was started with the coverage of 200 poorest districts in the country and now it has become extended to cover all rural areas of the country. The basic objective of the programme is providing employment in rural area. However, in the process of implementation of the programme it also gives considerable attention for rural development. The programme is demand based and provides 100 days of work to job card holders. Since 2017 the scheme has given 1980 crore mandays of employment to 2760 lakh workers. The scheme has given importance to women and it has benefited by 57% of the women. Rupees 3 lakh crore has been spent on this programme, at the same time the programme has emphasized on natural resources through initiatives like, water, land development and forestation. The scheme has also given importance to creation of sustainable economic assets, such as irrigation, canals and roads. Accordingly sustainable development foot prints are very much visible in MGNREGA scheme. Hence in 15 years the completion of the scheme there is a need of evaluation with sustainable approach. Accordingly, the present research work will address these issues with appropriate methodology.

Review of Literature:

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is the largest public employment programme introduced by the government with legal support for ensuring employment. Ever since the programme has been implemented many researchers, institutions, academicians and even government agencies have studied, examined, evaluated, and described the features, structures, functions, implementation and effectiveness of the programme. Accordingly, there is a huge literature available related to the programme. However, the

literatures related to provisions for sustainable development under the programme are limited but not scare. Hence, detailed review of literature explained in the second chapter**.**

Research Gap:

The previous research works have studied, examined, evaluated and described the features, structures, functions, implementation and effectiveness of MGNREGA. Many studies have been evaluated the scheme related to the issues like, generation of employment, poverty reduction, asset creation, consistency and efficiency, equity and accountability, women empowerment, perceptional attitude, livelihood security, food security and income increase etc. Some of the studies have shown positive side of the scheme and some of them have disclosed the inverse side of the programme. A very few studies have a critically examined the scheme. However, there are very few systematic studies for evaluating sustainable components of MGNREGA scheme by using neither primary nor secondary data as pilot mode. Hence, the present study entitled "Empirical Analysis of Sustainable Rural Development in West Bengal: An Appraisal of Mahatma Gandhi National Rural Employment Guarantee Scheme" has been considered to be a new attempt in this direction particularly in West Bengal.

Sample Size for Panchayath Residents:

The formula method developed by Slovin is used to determine the sample size. The sample size for the present study is fixed by using statistical formula with 95 percent of confidence and 5 percent of margin of error. Assuming infinite population of residents in the panchayaths (which is more than 10000), the sample size has fixed. The formula for sample size determination is given bellow;

$$SS = \frac{ZZ^{22} * [pp * (11 - pp)]}{EE_{22}}$$

Where;

- S = Sample size for infinite population
- Z = Z-score at five percent of level of significance the Z-score is 1.96
- P = Population proportion

The expected population proportion of panchayath residents in the overall residents is considered to be 0.5; most of the previous studies have used 0.5 as population proportion and present study has also considered 0.5 as population proportion.

- E = Margin of Error

The probability of committing mistake at five percent level is acceptable; because, the confidence in taking the decision is 95 percent. Therefore, at this point of estimation the null hypothesis can be rejected and alternative hypothesis can be accepted. At the same time, the arguments made with this precision are reliable and acceptable.

$$S = \frac{1.96^2 * [0.5 * (1 - 0.5)]}{0.005^2}$$

$$S = \frac{\{(3.8416 * 0.25)\}}{0.0025}$$

S= 384.16

In order to understand the implementation of MGNREGA programme by the panchayaths, the panchayath representatives are also considered for the study. There are two types of panchayath representatives; panchayath administrative staff and elected member.

The ratio of administrative staff and elected representatives is 1:3. Accordingly, one administration representative (Panchayath Development Officer or Secretary) and three elected members were considered from each panchayath for the present study; which will come to 13 X 4 = 52, which is more than 30 and this represents the supply side of the programme implementation.

Accordingly, the final sample size is;

Gram Panchayaths	13
Panchayath Representatives	13 X 4 = 52
Panchayath Residents	13 X 30 = 390
Total Sample Size	**442**

Tools and Techniques:

The method of computation of green index has been taken from the UNDP methodology for sustainable rural development which represents the green index of the MGNREGA programmes implemented in the panchayaths of Kolkata. The formula used to compute has given below;

$$GGGG_{\mathrm{GP}} = \frac{\sum_{i=1}^{i=N}(\mathrm{GV})}{4NN}$$

The detailed methodology and procedure of computation of green index values have been given in fourth chapter. The other tools and techniques used in the present study are listed below;

To analyze both the primary and secondary data researcher has used appropriate statistical techniques. To asses the performance of the variable tools and techniques like, mean, average, standard deviation, percentage, F-test analysis, t-test, Duncan test, Tukey post hoc test and conditional formatting for grouping the panchayaths as low, medium and high have been used. CAGR used to find the growth rate calculate the aggregate and statistical results, researcher has used gretl, statistical package for social science (SPSS). Data are presented in graph form in the theses. The above mention statistical techniques and values are used with the following meanings.

Arithmetic Mean:

It is a mean value of a particular variable and it is used to compare between the pre-reforms and reforms period. Higher the value of mean, the higher the performance of the variable is and vice-versa. In the present study researcher has used this tool to calculate the mean value of gram panchayath representatives and residents.

Standard Deviation:

It is used to calculate the higher, medium and lower performance of gram panchayaths.

Higher level = Mean value + half standard deviation value.

Lower level = Mean value – heal standard deviation value.

Medium level = between the higher level and lower level.

Percentage:

It is used to know the size of the sample units in terms of percentage. In the present study researcher has used this tool to find share of Malda district and Kolkata in West Bengal under MGNREGA.

F-test Analysis:

It is used to identify the significant difference in the variable between the series and within the series. Significant difference in variance is accepted or rejected at five percent level.

T-test Analysis:

It is used to identify the significant difference between the groups. In this analysis t-test has used to find the significant difference between panchayath representatives and residents in green potential, green effectiveness and green index.

ANOVA:

Analysis of variance is used to find the significant difference among the more than two groups for mean comparison. In the present study ANOVA is used for analyze significant difference among the gram panchayaths.

Duncan test:

In the present analysis researcher has used Duncan post hoc test to find the significant difference between West Bengal, Malda district and Kolkata with the help of secondary data.

Tukey test:

This post hoc test used to group the gram panchayath with the average value. In the present study researcher has used to find the significant difference among the thirteen panchayaths of Kolkata based on primary data.

Conclusion

The present chapter has reviewed around forty research works largely considered from research articles. It has been found from the reviews majority of the researchers have analyzed the effectiveness and success of the MGNREGA in different states and districts. Studies have used both primary and secondary data. Majority of the studies have used simple statistical techniques. It has been observed from the reviews that previous works have shown both positive and negative sides of the programme. At the same time, there is a dearth of literature linking MGNRGA or evaluating MGNREGA with sustainable rural development. Hence, there is a huge scope for research in this area and the present research work is a step forward in this direction.

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