A Study on the Group Finance and Individual Finance Scheme of TGB for the Period of 2006-07 to 2015-16

Puranjan Chakraborty

Assam University

ABSTRACT

Since the nationalization of Banks in India there was an endless effort from the Government of India (GOI) to boost the rural economy and to address the financial issues of the mass. After the nationalization of banks the financial sector and banking sector reforms took place to address the issue of poverty of mass population in rural and urban India. Various employment generations and hence various financial schemes were launched by Government of India (GOI) through banks. Some of these schemes are SHG, REGP, PMEGP, NRLM, SGSY, SJSRY, TRANSPORT OPERATOR SCHEME, SWAVALAMBAN, etc. In the state of Tripura, Tripura Gramin Bank (TGB) is playing a significant role in boosting the rural economy through their financial services in rural and urban Tripura. It was observed that the success of all these financial schemes is not same. The main objective of this paper is to study and compare the success of the individual and group finance schemes. In this study Man Whitney –U test is used to test the significance of the hypothesis. Secondary data were used for which source is SLBC of Tripura. The study has found that, the group finance scheme serviced by TGB is more successful than the Individual finance scheme.

Keywords: group finance scheme, individual finance scheme, SLBC, TGB, NRLM, SGSY,SJSRY, PMEGP, MANN whitney –u test, REGP, GOI.

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ABSTRACT

Since the nationalization of Banks in India there was an endless effort from the Government of India (GOI) to boost the rural economy and to address the financial issues of the mass. After the nationalization of banks the financial sector and banking sector reforms took place to address the issue of poverty of mass population in rural and urban India. Various employment generations and hence various financial schemes were launched by Government of India (GOI) through banks. Some of these schemes are SHG, REGP, PMEGP, NRLM, SGSY, SJSRY, TRANSPORT OPERATOR SCHEME, SWAVALAMBAN, etc. In the state of Tripura, Tripura Gramin Bank (TGB) is playing a significant role in boosting the rural economy through their financial services in rural and urban Tripura. It was observed that the success of all these financial schemes is not same. The main objective of this paper is to study and compare the success of the individual and group finance schemes. In this study Man Whitney –U test is used to test the significance of the hypothesis. Secondary data were used for which source is SLBC of Tripura. The study has found that, the group finance scheme serviced by TGB is more successful than the Individual finance scheme. Annual Reports of TGB 2006-07 to 2015-16, SLBC of Tripura for the study period".

Keywords: group finance scheme, individual finance scheme, SLBC, TGB, NRLM, SGSY,SJSRY, PMEGP, MANN whitney –u test, REGP, GOI.

Author: (MBA, M. Phil, UGC NET qualified) Ph.D scholar, Department of Commerce, Assam University, Silchar.

I. INTRODUCTION

There is endless effort from the Government through the boosting of Research institute incorporated with latest science and Technology and the financial institutions incorporated with available finance for a lucrative business of the entrepreneur. If we go to a research Institute like ICAR (Indian council of Agricultural Research), whatever agricultural variety is expected from them they are practically producing it and demonstrating it with logical explanation which is very sound in nature. Same thing they are expecting from the cultivator for a lucrative business. The cost of the process and hence the necessary finance required according to cultivation process and the geography of the area is well calculated. Required finance is also availed to all sorts of entrepreneur from various sectors like, Agriculture and allied, animal husbandry, small scale industries, village artisans, small business and retail trade, unemployed educated/uneducated youths, housing, education etc. But During the time of repayment of the loan various types of problems of overdue non recovery are very common in nature. Why there in a scene of non -recovery in bank finance is a debatable and Researchable issue. The objective of this paper is other than this debate. There are many schemes of bank finance from both central government and State government are running in every state of India through almost all financial institutions like banks in the country. In the Indian state of Tripura, Tripura Gramin Bank from RRB (Regional Rural Bank) group with highest network and working for boosting the rural economy of Tripura providing bank finance

in every block level. The main objective of this paper is to empirically analyze the success rate of few individual and group finance schemes of the TGB in Tripura state from 2006-07 to 2015-16 through analysis of historical data.

II. CONCEPTUAL FRAMEWORK

There are many forms of bank finance available in India. There are many arrangements of bank finance through various agencies of governmental, non- governmental and semi-governmental. Many financial Institutions are working on this subject. Banks are one of these financial institutions directly or indirectly involved in this matter. There are many bank finance schemes mostly designed by the central government and few of them are by various state governments. These financial schemes are so designed to cover up various aspects and needs of public life of both rural and urban area of India. These financial schemes covers various sectors like agriculture and allied , MSME, SSI, village artisans, small trade and retailing, priority sector, education, housing etc. Some of these schemes are meant for group finance and some of them are for individual finance. Self Help Group (SHG) is one of the group finance scheme. And there are many individual schemes like PMEGP, REGP, SGSY, SJSRY, SWAVALAMBAN, TRANSPORT OPERATOR ETC.

2.1 Prime minister Employment Generation Programme (PMEGP)

Government of India has approved the introduction of a new credit linked subsidy programme called Prime Minister's Employment Generation Programme (PMEGP) by merging the two earlier schemes those were in operation till 31.03.2008 namely Prime Minister's Rojgar Yojana (PMRY) and Rural Employment Generation Programme (REGP) for generation of employment opportunities through establishment of micro enterprises in rural as well as urban areas. PMEGP will be a central sector scheme to be administered by the Ministry of Micro, Small and Medium Enterprises (MoMSME). The Scheme will be implemented by Khadi and Village Industries Commission (KVIC), a statutory organization under the administrative control of the Ministry of MSME as the single nodal agency at the National level. At the State level, the Scheme will be implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centers (DICs) and banks. The Government subsidy under the Scheme will be routed by KVIC through the identified Banks for eventual distribution to the beneficiaries / entrepreneurs in their Bank accounts. The Implementing Agencies, namely KVIC, KVIBs and DICs will associate reputed Non-Government Organization (NGOs)/reputed autonomous institutions/Self Help Groups (SHGs)/ National Small Industries Corporation (NSIC) / Udyami Mitras empanelled under Rajiv Gandhi Udyami Mitra Yojana (RGUMY), Panchayati Raj institutions and other relevant bodies in the implementation of the Scheme, especially in the area of identification of beneficiaries, of area specific viable projects, and providing training in entrepreneurship development.

2.2 Rural Employment Generation Programme (REGP)

Prior to PMEGP scheme two schemes are running they are PMRY and REGP. Merging these two schemes PMEGP scheme is made. The REGP Scheme was made by Khadi commission for rural projects on self-employment generation. It was called margin money scheme also as on 25% of the total project cost was the margin money required from the rural entrepreneur for this scheme.

2.3 Swarnajayanti Gram Swarojgar Yojana (SGSY)

It is an initiative launched by Government of India to provide sustainable income to poorest of the poor people living in rural areas of the country. The scheme was launched on April 1, 1999.

Since its inception, over 2.25 million Self-help groups have been established with an investment of ₹14,403 crore (US$2.2 billion), profiting over 6.697 million people.

The Swarnajayanti Gram Swarojgar Yojana (SGSY) was launched as an integrated programme for self-employment of the rural poor with effect from April 1, 1999.

2.4 Swarnajayanti Saheri Rozgar Yojana

It is a centrally sponsored scheme which came into effect on 1st December 1997. The scheme strives to provide gainful employment to the urban unemployed and underemployed poor, through encouraging the setting up of self-employment ventures by the urban and rural poor living below the poverty line.

The SJSRY scheme is being implemented on a cost-sharing basis between the Centre and the States in the ratio of 75:25. Given the low allocations for the scheme, only about 2 lakh urban poor under skill development and 50,000 under self-employment are being benefitted under SJSRY scheme annually. The target under skill development of the urban poor is very small considering that the number of urban poor was estimated at 81 million in 2004-05 and that nationally a target of 500 million persons to be skill-trained by 2022 has been fixed by the National Council on Skill Development.

2.5 Swavalamban

Swavalamban Scheme, a co-contributory Pension Scheme, launched in September, 2010 to encourage people from the unorganized sector to voluntarily save for their retirement. The Central Government would contribute a sum of Rs. 1,000 in each National Pension System (NPS) account opened under the Scheme where the subscriber is able to save Rs.1,000 to Rs.12,000 during a financial year. The Government's contribution is available upto Financial Year 2016-17. The scheme is for those citizens of India who are not part of any statutory pension/provident scheme. The target beneficiaries of Swavalamban Scheme are co-contributory scheme beneficiaries of State Governments, Aanganwaadi workers, Construction workers, Occupational classes like weavers, fishermen, farmers, dairy workers etc. The Scheme is managed by Pension Fund Regulatory & Development Authority (PFRDA) and financed through budgetary support by way of Grants-in- Aid to PFRDA. The Scheme operates through 62 Aggregators and 71 PoPs.

2.6 Transport operator Scheme

The purpose of this loan is for acquisition of vehicles, meeting recurring operative expenses connected with transport business and also for short term emergent financial needs. The eligibility of this scheme is Individuals, proprietary concerns, partnership firms, companies engaged in passengers/goods transport operation inclusive of Small Road Transport Operators. The maximum of Rs. 300.00 lakhs is disbursed under this scheme.

The contribution from the loan receiver is 20 % of the cost/invoice of vehicle including body building. For the security hypothecation of vehicle acquired out of bank finance & collaterally to secured by mortgage of property (based on quantum of loan). Suitable guarantor with good net worth is required. The repayment period for term loan is maximum of 84 months.

Working capital is one year (can be renewed on a yearly basis). There is repayment holiday of maximum of 6 months within the maximum repayment period. The processing charges for loan amount up to Rs.5.00 lakhs is nil and for loan amount above Rs.5.00 lakhs - 0.75% of loan amount.

III. REVIEW OF LITERATURE

This paper is an outcome of study of various articles on bank finance in newspapers like Dainik Sambad, Dainik Jugasankha, Telegraph, Sandan, Tripura Darpan, Ajkal, Ajker Fariyad , Indian journals on agriculture and rural development (Rural Development and Management in India opportunities and Challenges, Kurukshetra), Samabayika, Banijya etc. , review of various

literature , articles on public finance covering entrepreneur from various sectors like agriculture, small scale industries , small trade, retailing, food processing, animal husbandry, minor forestry, allied activities, apiculture, sericulture, fishery etc. Articles reviewed from various newspapers, journals, magazines of both online and printed media. Jha., B.K. (2008) observed in his study that, financial services of bank improves the rural and urban entrepreneurship which is a solution to unemployment in rural and urban area of India. Jayramaiyah et.al (2013) found in their study that , sustainable economic growth is possible through poverty alleviation by providing affordable and simple credit delivery system in the rural area through the financial institutions like bank .Kanika and Nancy (2013) observed that Regional Rural bank has achieved the objective of reaching the door step of the rural population through their simple and easy credit delivery system especially by providing cheaper credit to the weaker section of the society.

3.1 Objectives:

The Main objective of this paper is to study the success rate of the individual and group bank finance schemes financed by Tripura Gramin Bank (TGB) In Tripura.

IV. RESEARCH METHODOLOGY

The study is Historical explanatory as well as an empirical one. The sample size is 10 for all schemes but for Swavalamban scheme analysis sample size is 6 because it has started from the year 2012. Data used is secondary type. Data is being collected from the State level banker's committee (SLBC) of Tripura. Hypotheses are used. Hypotheses are tested for their validity and significance using Mann Whitney U test. Bank selected is Tripura Gramin Bank. The study period is 2006-07 to 2015-16. Data is nonrandom type data.

Hypotheses

H_{01}: There is no significant difference between the annual recovery percentage of SHG scheme and PMEGP scheme financed by TGB.

H_{11}: There is significant difference between the annual recovery percentage of SHG scheme and PMEGP scheme financed by TGB.

H_{02}: There is no significant difference between the annual recovery percentage of SHG scheme and SGSY scheme financed by TGB

H_{12}: There is significant difference between the annual recovery percentage of SHG scheme and SGSY scheme financed by TGB.

H_{03}: There is no significant difference between the annual recovery percentage of SHG scheme and Transport operator scheme financed by TGB.

H_{13} There is significant difference between the annual recovery percentage of SHG scheme and Transport operator scheme financed by TGB.

H_{04}: There is no significant difference between the annual recovery percentage of SHG scheme and SWAVALAMBAN scheme financed by TGB.

H_{14}: There is significant difference between the annual recovery percentage of SHG scheme and SWAVALAMBAN scheme financed by TGB.

H_{05}: There is no significant difference between the annual recovery percentage of SHG scheme and SJSRY scheme financed by TGB.

H_{15}: There is significant difference between the annual recovery percentage of SHG scheme and SJSRY scheme financed by TGB.

H_{06}: There is no significant difference between the annual recovery percentage of SHG scheme and REGP scheme financed by TGB.

H_{16}: There is significant difference between the annual recovery percentage of SHG scheme and REGP scheme financed by TGB.

Table-1: Loan Recovery Status of SHG Scheme Financed by TGB (Rupees in Lacks)

Years	Annual demand	Annual recovery	Annual percentage of recovery	Annual percentage of recovery(Rounded)	Annual growth rate of recovery(Percentage)	Annual growth rate of recovery(Percentage) (Rounded)
2006-07	38.55	33.49	86.87	87	0	0
2007-08	52.95	47.65	89.99	90	42.28	42
2008-09	2588.37	308.52	11.92	12	547.47	547
2009-10	145.5	105.52	72.52	73	-65.79	-66
2010-11	380.5	248.6	65.34	65	135.59	136
2011-12	418.55	266	63.55	64	6.99	7
2012-13	1702.24	680.8	39.99	40	155.63	156
2013-14	1645.86	706.28	42.91	43	3.74	4
2014-15	1792	1165.25	65.03	65	64.98	65
2015-16	3359.63	1949.01	58.01	58	67.26	67
2016-17	2128.57	846.01	39.75	40	-56.59	-57
Average			59.61	59.70	95.81	

4.1 Data Analysis

To validate these hypotheses we selected SHG group finance scheme provided by TGB and the individual finance schemes provided by TGB which are selected for this analysis are as follows. These schemes are PMEGP, SGSY, SJSRY, TRANSPORT OPERATOR, SWABALAMBAN, REGP etc. In this respect collected secondary data are tabulated and conducted Mann Whitney U-Test to validate these hypotheses. From the above table-1 it is observed maximum annual recovery percentage was in the year 2006-07 (89.99%) followed by 20009-10(72%). Heavy fluctuation of annual growth rate of recovery is observed in these 10 years period of which maximum annual growth rate is observed in the year 2008-09(547.47%).

Table 2: Loan Recovery Status of PMEGP Scheme Financed by TGB(Rupees in Lacks)

Years	Demand	Annual Recovery	Annual Percentage of Recovery	Annual Percentage of Recovery(Rounded)	Annual Growth rate of Recovery
2006-07	3738	984	26.32	26	0
2007-08	4455	822	18.45	18	-16.46
2008-09	7246	1028	14.19	14	25.06
2009-10	6687	733	1.10	1	-28.69
2010-11	298	117	39.26	39	-84.03
2011-12	1056	433	41.00	41	270.08
2012-13	1412	740	52.41	52	70.9
2013-14	2338.5	892.21	38.15	38	20.56
2014-15	1071.83	698.09	65.13	65	-21.75
2015-16	1891.21	1239.56	65.54	66	77.56
2016-17	1184.43	567.18	47.89	48	-54.24
Average			36.16		25.9

As per above table Maximum Annual recovery percentage of PMEGP scheme is observed in the year 2014-15(65%), 2015-16(66%). Maximum annual growth rate of recovery is in the year 2015-16(77.56%).

Now we use Mann Whitney Test for validation of the hypothesis.

Though Mann Whitney- U- Test is free from restrictions of distribution just to check the distribution, before doing the Mann Whitney test the annual percentage recovery rate data was tested for normal distribution. There are many tests both graphical and statistical for testing normality of data using mathematical formulae or using excel. W-S test is one of them where W = Range, S = Standard Deviation, Q = W/S If q value calculated is within the range of $Q_{critical}$ value we accept that null hypothesis that there is no difference with the normal data else we reject null hypothesis where data is not normally distributed. Probability should be greater than 0.05 ie p >0.05 in q-q plot if data is normally distributed all the data will coincide the line else it will not be normally distributed. Now take the case of SHG-PMEGP case it is a 2 group case with degree of freedom = n-1 = 10-1 =9 corresponding to 9 degree of freedom and for 2 groups the $q_{ccritical}$ value is 3.20(Read from Q value table). Now using excel we found descriptive statistics of the annual percentage recovery data of SHG and PMEGP scheme For SHG scheme , standard deviation(s) = 22.83, Range (w) = 78, so q = w/s = 78/22.83 = 3.41 So q value of SHG data(3.41) > $q_{critical}$ value(3.20) so null hypothesis is rejected and there is difference so data is not normally distributed.

Now for PMEGP scheme standard deviation(s) = 10.84, Range (w) = 36, So q = w/s = 36/10.84= 3.32So q value of PMEGP scheme data (3.32) > $q_{critical}$ value (3.20) so null hypothesis is rejected and there is difference so data is not normally distributed. Similarly other cases are also tested and found that data are not normally distributed which is a precondition of Mann Whitney U-Test. Since the data is not normally distributed we can proceed for the Mann Whitney U-test.

Un symmetrical data of SHG scheme which are not normally distributed as shown in the below figure.

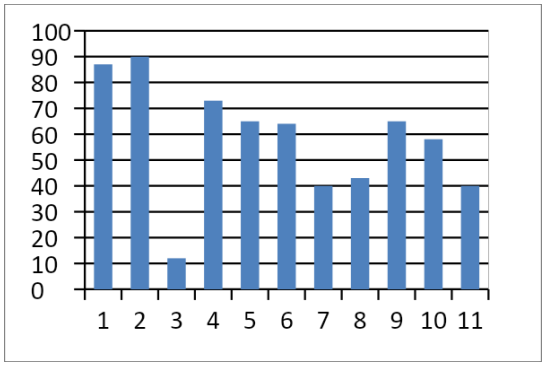

Fig-1: SHG SCHEME data distribution

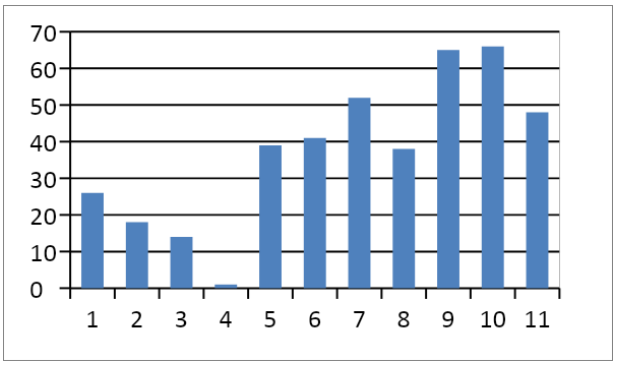

Fig-2: PMEGP SCHEME data distribution

Table 3: Case-1 Rank Comparison Matrix of SHG and PMEGP Scheme

Years	Original Rank	Revised Rank-SHG	Annual Percentage Recovery of SHG Scheme	Original Rank	Revised Rank-PMEGP	Annual Percentage Recovery of PMEGP Scheme
2006-07	1	19	87	11	5	26
2007-08	2	20	90	12	4	18
2008-09	3	2	12	13	3	14
2009-10	4	18	73	14	1	1
2010-11	5	15	65	15	7	39
2011-12	6	13	64	16	9	41
2012-13	7	8	40	17	11	52
2013-14	8	10	43	18	6	38
2014-15	9	15	65	19	15	65
2015-16	10	12	58	20	17	66
	Rank Sum(SHG)	132		Rank Sum(PMEGP	78	36

CASE:1 (SHG-PMEGP SCHEME)

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum (SHG) – n(n+1)/2 Where n= Sample number =10 .So $U_{stat\text{-}SHG}$ = 132 – 10(10+1)/2 = 77

$U_{stat\text{-}PMEGP}$ = Rank sum (PMEGP) – n(n+1)/2 Where n= Sample Number =10

So, $U_{stat\text{-}PMEGP}$ = 78 – 10(10+1)/2 = 23, Out of these two U-stat values 77 and 23 , 23 is less which will be selected for further process as U_{stat} value . So U_{stat} = 23 . For both SHG and PMEGP sample number is 10 Using the critical value table for 10x10 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 23 So it is observed that, U_{stat} <= $U_{critical.}$

So we reject the Null hypothesis H_{01} and accept the Alternate hypothesis H_{11}.

So there is difference between the ranks of annual recovery percentage of SHG and PMEGP scheme.

CASE-2: (SHG-SGSY-SCHEME)

Using Mann Whitney Test

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum (SHG) – n(n+1)/2 Where n= Sample number =10 .So $U_{stat\text{-}SHG}$ = 143 – 10(10+1)/2 = 88 $U_{stat\text{-}SGSY}$ = Rank sum (SGSY) – n(n+1)/2 Where n= Sample Number =10, So, $U_{stat\text{-}SGSY}$ = 67 – 10(10+1)/2 = 12, Out of these two U_{stat} values 88 and 12 , 12 is less which will be selected for further process as U_{stat} value . So U_{stat} = 12 . For both SHG and SGSY sample number is 10 Using the critical value table for 10x10 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 23 So it is observed that, U_{stat} < $U_{critical.}$. So we reject the Null hypothesis H_{02} and accept the Alternate hypothesis H_{12}.So there is difference between the ranks of annual recovery percentage of SHG and SGSY scheme financed by TGB.

Table-6: Loan Recovery Status of TRANSPORT OPERATOR Scheme financed by TGB(Rupees in Lacks)

Years	Demand	Annual Recovery	Annual Percentage of Recovery	Annual Percentage of Recovery Rounded	Annual Growth rate of Recovery(Percentage)
2006-07	268.89	165.77	61.65	62	0
2007-08	200.51	103.26	51.50	52	-18.08
2008-09	245.44	134.48	54.79	55	6.38
2009-10	281.69	166.77	59.20	59	8.04
2010-11	245.75	157.36	64.03	64	8.15
2011-12	272.78	168.37	61.72	62	-3.6
2012-13	698.36	432.76	61.97	62	0.4
2013-14	638.62	408.26	63.93	64	3.16
2014-15	778.82	523.38	67.20	67	5.11
2015-16	343.75	298.67	86.89	87	29.3
Average			**63.29**		**3.88**

Source: Annual reports of Tripura Gramin Bank (2006-07 to 2016-17)

As per Table-6 above Maximum annual recovery percentage of Transport operator scheme is found in the year 2015-16(86.89%) and Average of annual recovery percentage of Transport operator scheme is 63.29% whereas average of annual growth rate of recovery of Transport operator scheme is 3.88 %

Using Mann Whitney – U Test.

Table-7: Case-3 , Rank Comparison Matrix of SHG and Transport Operator Scheme

Years	Original Rank	Revised Rank SHG	Annual Percentage Recovery of SHG Scheme	Original Rank	Annual Percentage Recovery of Transport Operator Scheme	Revised Rank-Transport Operator
2006-07	1	18.5	87	11	62	9
2007-08	2	20	90	12	52	4
2008-09	3	1	12	13	55	5
2009-10	4	17	73	14	59	7
2010-11	5	14.5	65	15	64	12
2011-12	6	12	64	16	62	9
2012-13	7	2	40	17	62	9
2013-14	8	3	43	18	64	12
2014-15	9	14.5	65	19	67	16
2015-16	10	6	58	20	87	18.5
					63.4(Average)	
	Rank Sum	108.5	59.7(Average)		Rank Sum	101.5

CASE-3: (SHG-Transport Operator-SCHEME)

Using Mann Whitney Test

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum (SHG) – n(n+1)/2 Where n= Sample number =10 .So $U_{stat\text{-}SHG}$ = 108.5 – 10(10+1)/2 = 53.5

$U_{stat\text{-}Transport\_operator}$ = Rank sum (Transport Operator) – n (n+1)/2 Where n= Sample Number =10

So, $U_{stat\text{-}Transport\_Operator}$ = 101.5 – 10(10+1)/2 = 46.5, Out of these two U-stat values 53.5 and 46.5, 46.5 is less which will be selected for further process as U_{stat} value. So U_{stat} = 46.5. For both SHG and Transport Operator sample number is 10 Using the critical value table for 10x10 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 23 So it is observed that,

$U_{stat} > U_{critical.}$

So we accept the Null hypothesis H_{03} and reject the Alternate hypothesis H_{13}.

So there is no difference between the ranks of annual recovery percentage of SHG and Transport Operator scheme financed by TGB.

Table-8: Loan Recovery Status of SJSRY Scheme financed by TGB(Rupees in Lacks)

Years	Demand	Annual Recovery	Annual Percentage of Recovery	Annual Percentage of Recovery(Rounded)	Annual Growth rate of Recovery(Percentage)
2006-07	4.15	1.11	26.75	27	0
2007-08	3.48	0.6	17.24	17	-45.94
2008-09	4.91	0.84	17.11	17	40
2009-10	4.51	0.6	13.30	13	-28.57
2010-11	6.34	1.19	18.77	19	98.33
2011-12	7.46	2.3	30.83	31	93.27
2012-13	6.25	1.24	19.84	20	-46.08
2013-14	706.54	162.27	22.97	23	12986.29
2014-15	2141.61	179.98	8.40	8	10.91
2015-16	2141.3	182.02	8.50	9	1.13
Average			18.37		1310.934

Source : Self calculation

Using Mann Whitney – U-Test

Table-9: CASE-4 Rank Comparison Matrix of SHG and SJSRY Scheme

Years	Original Rank	Revised Rank SHG	Original Rank	Revised Rank-SJSRY Scheme	Annual Percentage Recovery of SJSRY Scheme
2006-07	1	19	11	10	27
2007-08	2	20	12	10.5	17
2008-09	3	3	13	10.5	17
2009-10	4	18	14	4	13
2010-11	5	16.5	15	7	19
2011-12	6	15	16	11	31
2012-13	7	12	17	8	20
2013-14	8	13	18	9	23

2014-15	9	16.5	19	1	8
2015-16	10	14	20	2	9
	Rank Sum	147	Rank Sum	73	18

CASE-4: (SHG-SJSRY-SCHEME)

Using Mann Whitney Test

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum (SHG) – n (n+1)/2 Where n = Sample number =10 .So $U_{stat\text{-}SHG}$ = 147 – 10(10+1)/2 = 92

U_{SJSRY} = Rank sum (SJSRY) – n (n+1)/2 Where n= Sample Number =10

So, U_{SJSRY} = 73 – 10(10+1)/2 = 18, Out of these two U-stat values 92 and 18 and 18 is less which will be selected for further process as U_{stat} value . So U_{stat} = 18. For both SHG and SJSRY sample number is 10 Using the critical value table for 10x10 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 23 So it is observed that,

$U_{stat} < U_{critical.}$

So we reject the Null hypothesis H_{04} and accept the Alternate hypothesis H_{14} as there is difference of these two values.

Table-10: Loan Recovery Status of SWAVALAMBAN Scheme Financed by TGB (Rupees in Lacks)

Years	Demand	Annual Recovery	Annual Percentage of Recovery(Rounded)	Annual Growth rate of Recovery(Percentage)	Annual Growth rate of Recovery(Percentage) (Rounded)
2006-07	0		0	0	0
2007-08	0		0	0	0
2008-09	0		0	0	0
2009-10	0		0	0	0
2010-11	0		0	0	0
2011-12	426.56	291	68		68
2012-13	639.22	354	55	21.65	22
2013-14	968.67	413	43	16.48	16
2014-15	1480.29	962	65	133.93	134
2015-16	1237.16	693	56	-28.65	-29
2016-17	1804.83	722	40	3.7	4
Average			54.61	29.42	Average of Annual growth rate of recovery

So there is difference between the ranks of annual recovery percentage of SHG and SJSRY

Scheme financed by TGB

Using Mann Whitney –U Test

Table-11: CASE-5 Rank Comparison Matrix of SHG and SWAVALAMBAN Scheme

Years	Original Rank	Revised Rank SHG	Annual Percentage Recovery of SHG Scheme	Original Rank	Revised Rank-SWAVALAMBAN Scheme	Annual Percentage Recovery of SWAVALAMBAN Scheme
2011-12	1	9	64	7	12	68
2012-13	2	2	40	8	6	55
2013-14	3	4.5	43	9	4.5	43
2014-15	4	10.5	65	10	10.5	65
2015-16	5	8	58	11	7	56
2016-17	6	2	40	12	2	40
	Rank Sum	36	52	Rank Sum	42	55
			Average of Annual Percentage Recovery			AVERAGE ANNUAL RECOVERY PERCENTAGE

CASE-5: (SHG-SWAVALAMBAN-SCHEME)
Using Mann Whitney Test

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum (SHG) – n (n+1)/2 Where n = Sample number = 6
So $U_{stat\text{-}SHG}$ = 36 – 6(6+1)/2 = 15

$U_{SWAVALAMBAN}$ = Rank sum (SWAVALAMBAN) – n (n+1)/2 Where n= Sample Number =6

So, $U_{SWAVALAMBAN}$ = 42 – 6(6+1)/2 = 21, Out of these two U-stat values 15 and 21 and 15 is less which will be selected for further process as U_{stat} value . So U_{stat} = 15. For both SHG and SWAVALAMBAN sample number is 6 Using the critical value table for 6x6 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 5 So it is observed that,

$U_{stat} > U_{critical.}$

So we accept the Null hypothesis H_{05} and reject the Alternate hypothesis H_{15} as there is no difference of these two values of SHG scheme and SWAVALAMBAN scheme.

So there is no difference between the ranks of annual recovery percentage of SHG and SWAVALAMBAN scheme financed by TGB

Using Man Whitney U-Test

Table-12: Loan Recovery Status of REGP(MMS) Scheme financed by TGB (Rupees in Lacks)

Years	Demand	Annual Recovery	Annual Percentage of Recovery	Annual Percentage of Recovery(Rounded)	Annual Growth rate of Recovery(Percentage)	
2006-07	690	249	36.09	36	0	
2007-08	1597	728	45.59	46	192.36	
2008-09	991	437	44.10	44	-39.97	
2009-10	1906	565	29.64	30	29.29	
2010-11	1106	388	35.08	35	-31.32	
2011-12	1046	378	36.14	36	-2.57	

2012-13	1207	375	31.07	31	-0.79	
2013-14	1541.62	511.48	33.18	33	36.39	
2014-15	2096.44	985.01	46.98	47	92.58	
2015-16	2098.48	995.75	47.45	47	1.09	
		Average Annual Recovery Percentage	39.44	38.50	26.69	Average of Annual growth rate of recovery

Source: Self Calculation

Table -13: CASE-6 Rank Comparison Matrix of SHG and REGP Scheme

Years	Original Rank	Revised Rank SHG	Annual Percentage Recovery of SHG Scheme	Original Rank	Revised Rank-REGP Scheme	Annual Percentage Recovery of REGP Scheme
2006-07	1	19	87	11	6.5	36
2007-08	2	20	90	12	11	46
2008-09	3	1	12	13	10	44
2009-10	4	18	73	14	2	30
2010-11	5	16.5	65	15	5	35
2011-12	6	15	64	16	6.5	36
2012-13	7	8	40	17	3	31
2013-14	8	9	43	18	4	33
2014-15	9	16.5	65	19	12.5	47
2015-16	10	14	58	20	12.5	47
	Rank Sum	137	60(Average)	Rank Sum	73	

CASE-6: (REGP-SCHEME)

Using Mann Whitney Test

Now we have formulae for $U_{stat\text{-}SHG}$ = Rank sum(SHG) – n(n+1)/2 Where n= Sample number = 10, So $U_{stat\text{-}SHG}$ = 137 – 10(10+1)/2 = 82

U_{REGP} = Rank sum (REGP) – n(n+1)/2 Where n= Sample Number =10

So, U_{REGP} = 73 – 10(10+1)/2 = 18, Out of these two U-stat values 18 and 82, 18 is less which will be selected for further process as U_{stat} value . So U_{stat} = 18. For both SHG and REGP sample number is 10 Using the critical value table for 10x10 the Critical table value at 5% significance level (α = 0.05), $U_{critical}$ = 23 So it is observed that,

$U_{stat} < U_{critical.}$

So we Reject the Null hypothesis H_{06} and accept the Alternate hypothesis H_{16} as there is difference of these two values. So there is difference between the ranks of annual recovery percentage of SHG and REGP scheme financed by TGB

Interpretation:

Table-14: Comparative Statistical Analysis-1 of group finance scheme and Individual finance Schemes financed by TGB

Sl.No.	Schemes	Sample size	U-critical value	U-stat value	Comment	Decision	Remarks	Status of test
1	SHG-PMEGP	10	23	23	U_stat<=Ucriticle	Reject Null Hypothesis and accept alternate hypothesis	There is difference between the Annual Recovery percentage of SHG and PMEGP Scheme	Positive
2	SHG-SGSY	10	23	12	U_stat<Ucritical	Reject Null Hypothesis and accept alternate hypothesis	There is difference between the Annual Recovery percentage of SHG and SGSY Scheme	Positive
3	SHG-TRANSPORT-OPERATOR	10	23	46.5	U_stat > Ucritical	Accept Null Hypothesis and Reject alternate hypothesis	There is no difference between the Annual Recovery percentage of SHG and TRANSPORT OPERATOR Scheme	Negative
4	SHG-SJSRY	10	23	18	U_stat<Ucritical	Reject Null Hypothesis and accept alternate hypothesis	There is difference between the Annual Recovery percentage of SHG and SJSRY Scheme	Positive
5	SHG-SWABALAMBAN	6	5	15	U_stat >Ucritical	Accept Null Hypothesis and Reject alternate hypothesis	There is no difference between the Annual Recovery percentage of SHG and SWABALAMBAN Scheme	Negative
6	SHG-REGP	10	23	18	Ustat < Ucritical	Reject Null Hypothesis and accept alternate hypothesis	There is difference between the Annual Recovery percentage of SHG and REGP Scheme	Positive

Table-15: Comparative analysis of Percentage Recovery Rates of various schemes

SL .No.	Schemes	Sample size	Average Annual Recovery percentage of various finance Scheme	Average Growth rate of annual Recovery	Remarks	Conclusion
1	SHG(Group-Scheme)	10	59.61	95.81	2nd position Average Annual Recovery percentage is highest in SHG group finance scheme than any individual finance scheme except Transport operator scheme.	Considering the Results tabulated in Table-14 and Table-15, There is difference in recovery in Group finance scheme and individual finance scheme of TGB and in case of Group finance scheme like SHG scheme the average annual recovery percentage is more than the individual finance schemes. Hence the Group finance scheme of TGB is more successful than individual finance scheme of TGB.

2	PMEGP(Individual Scheme)	10	36.16	25.9		
3	SGSY(Individual Scheme)	10	29.01	71.7	3rd position	
4	SJSRY(Individual Scheme)	10	16.23	1306.94	Average Annual growth rate is highest for SJSRY individual finance scheme.	
5	SWABALAMBAN(Individual Scheme)	6	54.45	29.42	Annual Average growth rate of recovery is not appreciable and less than SHG scheme but Annual Average Percentage Recovery is in 2nd position	
6	REGP(Individual Scheme)	10	38.5	28.69	Annual Average growth rate of recovery is not appreciable and less than SHG(Group Scheme) scheme	
7	Transport Operator	10	64	2.39	Annual Average growth rate of Recovery is the least but Average Annual recovery percentage is highest than any other scheme.	

V. CONCLUSION

After all these statistical analysis we have reached in a position to say that, the *Annual recovery percentage* of the group finance scheme serviced by TGB is more than the individual finance schemes .Annual average growth rate of the group finance is more than the individual finance schemes. Out of six tested cases we have got positive result for 4 cases and it is proved that, there is difference between the ranks of annual recovery percentage of Group and individual finance scheme serviced by TGB. So it is more advisable to encourage group finance schemes and more portions of the investments should be towards group finance scheme because in group finance scheme responsibility of timely repayment is realized. So we can say that the success of group finance schemes of TGB is more than the individual finance scheme.

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