Chapter 5

Results and Discussion

This chapter deals with empirical results defended by statistical analysis after interpretation of raw field data and discussion of each result in a systematic manner. The result and their pertaining discussion are presented accordingly to the specific objective of the study.

A profile is a cross sectional information of a situation. The socio economic profile is the overall condition of the respondents identified in terms of social and economic milieu within a specific geographical location employing various indicators, was obtained with the help of Socio-economic status Scale Rural developed by Pareek and Trivedi (1964). The Socio economic status scales have ten items. The socio-economic statuses of respondents were calculated by adding the scores assigned to a category of each them.

Table 1: Socio-economic profile of respondents

N=100

Items	Category	Frequency	Percentage (%)
Age	Young(18-30)	27	27
	Middle age(31-50)	65	35
	Old age(above 50)	8	8

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Caste	Schedule Caste	27	27
	Lower Caste	33	33
	General Caste	20	20
	Agricultural Caste	10	10
	Brahmin Caste	10	10
	Dominant Caste	0	0
Occupation	Labour	24	24
	Caste Occupation	20	20
	Business	26	26
	Independent profession	1	1
	Cultivation	16	16
	Service	10	10
Education	Illiterate	20	20
	Read Only	5	5
	Read & write	1	1
	Primary	30	30
	Secondary	25	25
	Higher secondary	11	11
	Graduate & above	8	8
Family Type	Nuclear	77	77
	Joint	23	23
Family Size	Up to 5 members	57	57
	Above 5 members	43	43
Land Holding	Landless	21	21
	Less than 1 bigha	54	54
	1 to 5 bigha	20	20
	5 to 10 bigha	5	5
	10 to 15 bigha	0	0
	15 to 20 bigha	0	0
	More than 20 bigha		
House Type	No House	1	1
	Hut	27	27
	Kutcha House	23	23
	Mixed House	23	23
	Pucca House	26	26
	Masion	0	0

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Farm Power	No Drought Animals	25	25
	1-2 Drought Animals	6	6
	3-4 Drought Animals	42	42
	5-6 Drought Animals	25	25
	Power Tiller/Tractor	1	1
Sanitation status	Available	35	35
	Unavailable	65	65

SOCIO ECONOMIC CHARACTERISTICS OF RESPONDENTS

Age

It is evident from the study that 27% of the respondents are young age(18-30 years) and most of them are middle age(65%) and rest 8% respondents are above 50 years.

Caste

It is evident from the study that 27% of the respondents are belonged to schedule caste,33% are from lower caste,20% of the respondents are general caste, agricultural caste were 10% and brahmin caste are also found to the tune of 10%.

Occupation

The occupational pattern shows that 24% are labourer,20% involved in caste occupation,26% of the respondents are doing business.10% respondents are engaged in service.16% of them involved in cultivation. Only 1% of the respondents involve in independent business.

Education

The education level of respondents shows that 20% are illiterate, 5% respondents can read only, 1%can read and write.30% of the respondents has education up to primary level , 25 % up to secondary level,11%

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respondents has achieved higher secondary education and 8% of them obtained graduate degree.

Family type

Majority of the respondents has nuclear family (77%).Rest 23% has joint family.

Family size

It is clear from the table that 57% of the respondents belong to small family (up to 5 members) and the remaining 43%of them belong to large family (above 5 members).

Land holding

The land distribution which is an important phenomenon in rural society indicate that 21% of the respondents are landless and remaining 79% are landowner.

Among the landowning category 54% are having less than 1 bigha followed by 20% having 1 to 5 bigha and only 5% have 5 to 10 bigha of land respectively.

House type

Among the respondents only 1% has no house but the used to live in rented house (hut). 27% of them has house(hut).23% lived in kutcha house, 26% lived in pucca house. Rest 23% respondents had mixed type of house.

Farm power

As seen in the table 25% respondents has no drought animal. 6% respondents had 1to 2 drought animal, 42% had 3 to 4 drought animal and 25% of them has 5 to 6 drought animal. Only 1% had tractor.

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Sanitation facilities

In the villages of the study area 35% respondents has sanitation facilities and rest 65% of the respondents has no sanitation facilities available.

A profile of cross sectional information :

The socio economic profile of the respondents was obtained with the help of Socio-economic status Scale Rural developed by Pareek and Trivedi (1964). Socio-economic status refers to the position of an individual with reference to various indicator of social and economic condition in a rural area. The Socio economic status scales have ten items. The socio-economic statuses of respondents were calculated by adding the scores assigned to a category of each them.

Table 2: Socio Economic Profile of Respondents in Alipurduar

N=60

Items	Category	Frequency	Percentage (%)
Age	Young(18-30)	20	33.33
	Middle age(31-50)	35	58.33
	Old age(above 50)	5	8.33
Caste	Schedule Caste	16	26.66
	Lower Caste	24	40
	General Caste	15	25
	Agricultural Caste	0	0
	Brahmin Caste	5	8.33
	Dominant Caste	0	0
Occupation	Labour	12	20
	Caste Occupation	13	21.66
	Business	16	26.66
	Independent profession	0	0
	Cultivation	11	18.33
	Service	8	13.33

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Education	Illiterate	11	18.33
	Read Only	0	0
	Read & write	0	0
	Primary	23	38.33
	Secondary	15	25
	Higher secondary	6	10
	Graduate & above	5	8.33
Family Type	Nuclear	47	78.33
	Joint	13	21.67
Family Size	Up to 5 members	39	65
	Above 5 members	21	35
Land Holding	landless	16	26.66
	Less than 1 bigha	36	60
	1 to 5 bigha	5	8.33
	5 to 10 bigha	3	5
	10 to 15 bigha	0	0
	15 to 20 bigha	0	0
	More than 20 bigha	0	0
House Type	No House	0	0
	Hut	20	33.33
	Kutcha House	12	20
	Mixed House	12	20
	Pucca House	16	26.66
	Mansion	0	0
Farm Power	No Drought Animals	19	33.33
	1-2 Drought Animals	11	18.33
	3-4 Drought Animals	19	31.66
	5-6 Drought Animals	11	18.33
	Power Tiller/Tractor	0	0
Sanitation	Available	25	41.66
	Unavailable	35	58.34

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SOCIO ECONOMIC CHARACTERISTICS OF RESPONDENTS

Age

It is evident from the study that 33.33% of the respondents are young age(18-30 years) and most of them are middle age(58.33%) and rest 8.33% respondents are above 50 years.

Caste

It is evident from the study that 26.66% of the respondents ware belonged to schedule caste,40% are from lower caste,25% of the respondents are general caste and Brahmin caste are also found to the tune of 8.33%.

Occupation

The occupational pattern shows that 20% are labourer, 21.66 per cent involve in caste occupation,26.66% of the respondents are doing business.13.33% respondents are engaged in service.18.33% of them involve in cultivation.

Education

The education level of respondents shows that 18.33% are illiterate.38.33% of the respondents has education up to primary level , 25 % up to secondary level,10% respondents has achieved higher secondary education and 8.33% of them obtain graduate degree.

Family type

Majority of the respondents has nuclear family (78.33%).Rest 21.67% has joint family.

Family size

It is clear from the table that 65% of the respondents belongs to small family (up to 5 members) and the remaining 35%of them belongs to large family(above 5 members).

Land holding

The land distribution which is an important phenomenon in rural society indicate that 26.66% of the respondents are landless and remaining 73.34% are landowner.

Among the landowning category 60%are having less than 1 bigha followed by 8.33% having 1 to 5 bigha and only 5% have 5 to 10 bigha of land respectively.

House type

Among the respondents 33.33% of them has house (hut).20% lived in kutcha house, 20% lived in pucca house. Rest 26.66% respondents has mixed type of house.

Farm power

As seen in the table 33.33% respondents has no drought animal.18.33% respondents had 1to 2 drought animal,31.66% had 3 to 4 drought animal and 18.33% of them had 5 to 6 drought animal.

Sanitation facilities

In the villages of the study area 41.66% respondents has sanitation facilities and rest 58.34% of the respondents has no sanitation facilities available.

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A profile of cross sectional information of a situation. The socio economic profile of the respondents was obtained with the help of Socio-economic status Scale Rural developed by Pareek and Trivedi (1964). Socio-economic status refers to the position of an individual with reference to various indicator of social and economic condition in a rural area. The Socio economic status scale have ten items. The socio-economic statuses of respondents were calculated by adding the scores assigned to a category of each them.

Table 3: Socio Economic Profile of Respondents in Bankura

N=40

Items	Category	Frequency	Percentage (%)
Age	Young(18-30)	7	17.5
	Middle age(31-50)	30	75
	Old age(above 50)	3	7.5
Caste	Schedule Caste	11	27.5
	Lower Caste	9	22.5
	General Caste	5	12.5
	Agricultural Caste	10	25
	Brahmin Caste	5	12.5
	Dominant Caste	0	0
Occupation	Labour	12	30
	Caste Occupation	4	10
	Business	5	12.5
	Independent profession	1	2.5
	Cultivation	16	40
	Service	2	5

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Education	Illiterate	9	22.5
	Read Only	5	12.5
	Read & write	1	2.5
	Primary	6	15
	Secondary	11	27.5
	Higher secondary	5	12.5
	Graduate & above	2	5
Family Type	Nuclear	30	75
	Joint	10	25
Family Size	Up to 5 members	19	47.5
	Above 5 members	21	52.5
Land Holding	landless	4	10
	Less than 1 SATAK	20	50
	1 to 5 SATAK	14	35
	5 to 10 SATAK	2	5
	10 to 15 SATAK	0	0
	15 to 20 SATAK	0	0
	More than 20 SATAK	0	0
House Type	No House	1	2.5
	Hut	7	17.5
	Kutcha House	11	27.5
	Mixed House	11	27.5
	Pucca House	10	25
	Masion	0	0
Farm Power	No Drought Animals	6	15
	1-2 Drought Animals	21	52.5
	3-4 Drought Animals	9	22.5
	5-6 Drought Animals	3	7.5
	Power Tiller/Tractor	1	2.5
Sanitation	Available	5	25
	Unavailable	15	75

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SOCIO ECONOMIC CHARACTERISTICS OF RESPONDENTS

Age

It is evident from the study that 17.5% of the respondents are young age(18-30 years) and most of them are middle age(75%) and rest 7.5% respondents are above 50 years.

Caste

It is evident from the study that 27.5% of the respondents are belonged to schedule caste,22.5% are from lower caste,12.5% of the respondents are general caste, agricultural caste are 25% and bramhin caste are also found to the tune of 12.5%.

Occupation

The occupational pattern shows that 22.5% are labourer,10% involve in caste occupation,12.5% of the respondents are doing business.13.33% respondents are engaged in service.40% of them involve in cultivation. Only 2.5% of the respondents involve in independent business.

Education

The education level of respondents shows that 22.5% are illiterate, 12.5% respondents can read only, 2.5%can read and write.15% of the respondents has education up to primary level , 27.5 % up to secondary level,12.5% respondents has achieved higher secondary education and 5% of them obtaine graduate degree.

Family type

Majority of the respondents has nuclear family (75%).Rest 25% has joint family.

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Family size

It is clear from the table that 47.5% of the respondents belongs to small family (up to 5 members) and the remaining 52.5%of them belongs to large family(above 5 members).

Land holding

The land distribution which is an important phenomenon in rural society indicated that 10% of the respondents are landless and remaining 90% are landowner.

Among the landowning category 50% are having less than 1 satak followed by 35% having 1 to 5 satak and only 5% have 5 to 10 satak of land respectively.

House type

Among the respondents only 2.5% has no house but the used to live in rented house (hut). 17.5% of them had house(hut).27.5% lived in kutcha house, 27.5% lived in pucca house. Rest 25% respondents had mixed type of house.

Farm power

As seen in the table 15% respondents has no drought animal. 52.5% respondents has 1to 2 drought animal, 22.5% has 3 to 4 drought animal and 7.5% of them has 5 to 6 drought animal. Only 2.5% has tractor.

Sanitation facilities

In the villages of the study area 25% respondents has sanitation facilities and rest 75% of the respondents has no sanitation facilities available.

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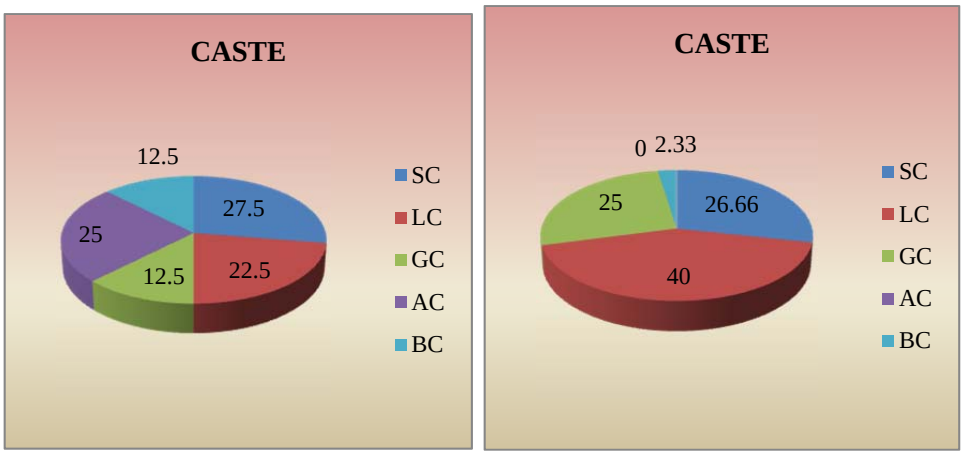

FIG. 1: Caste Distribution in Bankura and Alipurduar

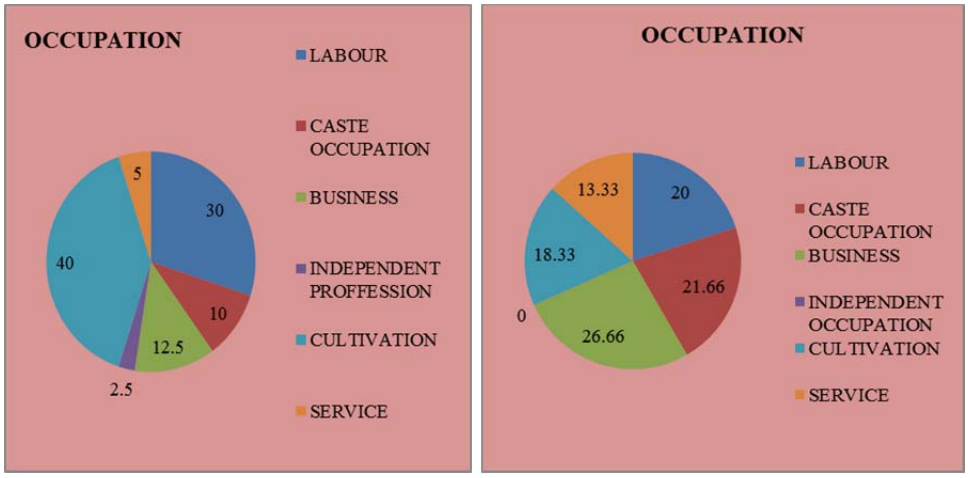

Fig. 2: Occupation in Bankura and Alipurduar

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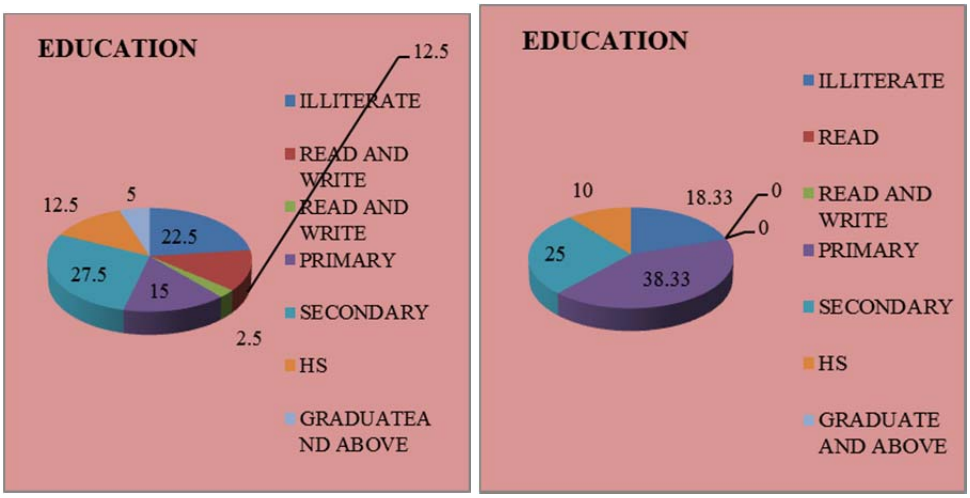

Fig. 3: Education Status in Two District

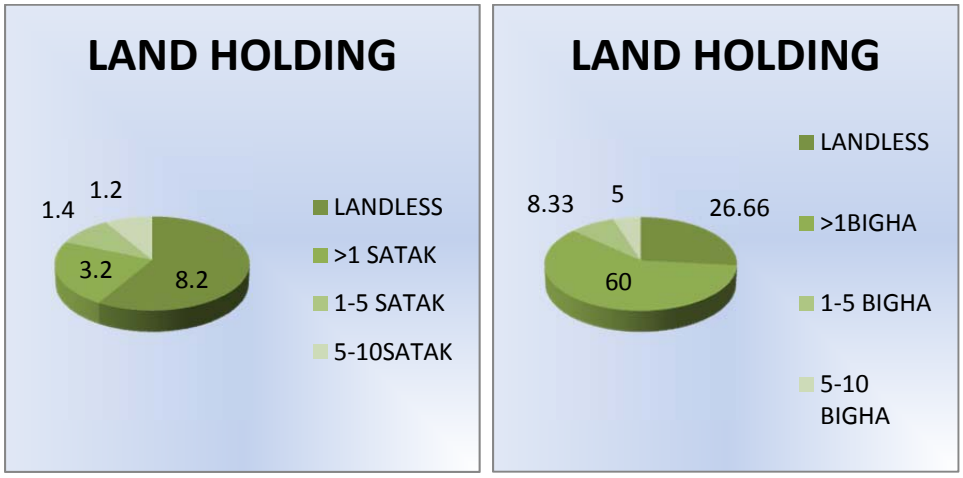

Fig. 4: Land Holding Status of Respondents in Two Districts

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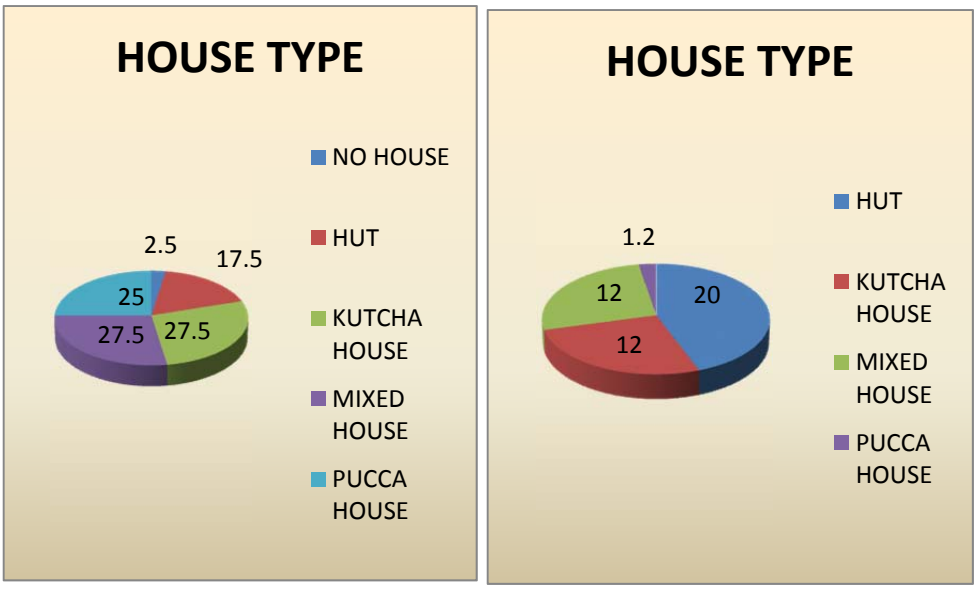

Fig. 5: House Type of Resbondents in Two Districts

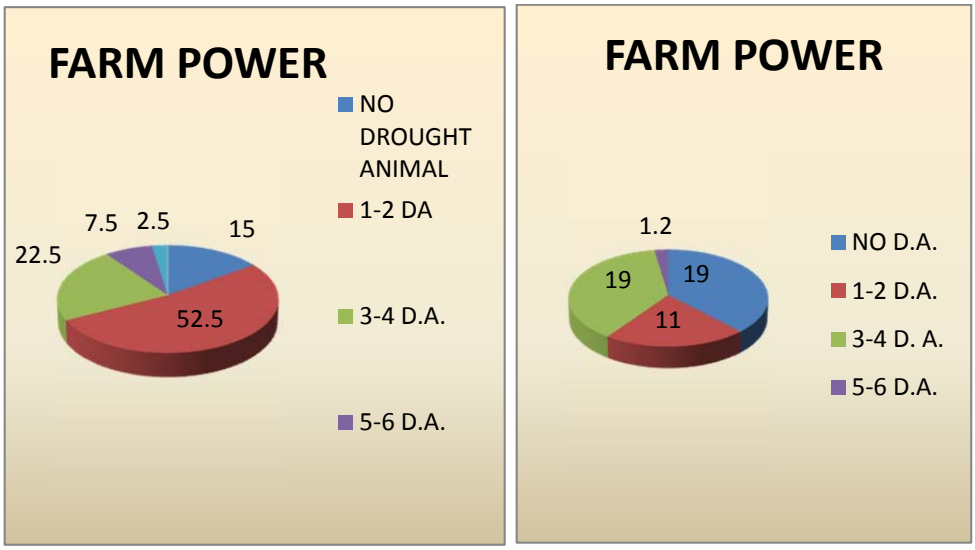

Fig. 6: Farm power possition of two district of respondents

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Livelihood pattern of study area

Table 4: Livelihood pattern in Porobasti

(n=30)

Sl.No	Types of livelihood	No. of people involved	%	Rank
1	Agriculture(cultivation)	5	4.3	7th
2	Animal rearing	19	16.2	4th
3	Service	1	0.86	8th
4	Picnic spot	10	8.69	5th
5	Labour in local area	21	18.2	3rd
6	MGNREGA	27	23.47	1st
7	Labour in other state	7	6.08	6th
8	Other(collection of fire wood from forest)	25	21.73	2nd
total	Total	115	100	

Note : Multiple responses have been considered

In this table it is evident the distribution pattern of livelihood and it is suggestive of the fact that the most of the people of Porobasti involve in Mahatma Gandhi National Rural Employment Grantee Act (MGNREGA) (23.47%),21.73% people collect firewood from forest and sold in nearby market,18.2% respondents work as local labour (agril.labour, mason, construction labour etc.) 16.2% engage in animal rearing (cow,pig,goat, buffallow). One of the important characteristics of Porobasti that in promoting the rural tourism they have established picnic spot,where women are also taking part actively,8.69%people are involved in managing picnic spot,6.08% migrate to other state as labour seasonally. Only 7% of the respondents their livelihood was agriculture. Only 0.86% respondents were engaged in govt. service.

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Table 5: Livelihood pattern in Pampubasti

(n=30)

Sl.no	Types of livelihood	No. of people involved	%	rank
1	Agriculture	5	3.84	8th
2	Animal husbandry	19	14.61	4th
3	Service	7	5.38	7th
4	Picnic spot	15	11.53	5th
5	Labour in other state	10	7.69	6th
6	Labour in local area	22	16.92	3rd
7	MGNREGA	30	23.07	**1st**
8	Other(collection of fire wood from forest)	22	16.92	2nd
9	Total	130	100	

Note : Multiple responses have been considered

In this table, it is evident that the distribution pattern of livelihood and it is suggestive of the fact that the most of the people of Porobasti are involved in Mahatma Gandhi National Rural Employment Grantee Act (MGNREGA) (23.07%),16.92% people collect firewood from forest and sold in nearby market,16.92% respondents work as local labour (agril.labour,mason,construction labour etc)14.61% engaged in animal rearing(cow,pig,goat,buffallow). One of the important characteristics of Pampubasti that in promoting the rural tourism they have established picnic spot,where women are also taking part actively,11.53%people are involve in managing picnic spot,7.69% migrate to other state as labour seasonally. Only 3.84% of the respondents their livelihood is agriculture. Only 5.38% respondents are engaged in goverment service.

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Table 6: Livelihood pattern in Srikrishnapur

(n=20)

Sl.no	Types of livelihood	No. of people involved	%	rank
1	Agriculture	10	10.52	4th
2	Animal husbandry	12	12.63	3rd
3	Piggery	8	8.42	5th
4	Poultry	6	6.31	7th
5	Fishery	2	2.10	8th
6	Labour in local area	15	15.78	1st
7	Labour in other state	7	7.36	6th
8	MGNREGA	14	14.73	2nd
9	Service	6	6.31	7th
10	Making of plate from sal leaf	15	15.78	1st
	Total	95	100	

Note : Multiple responses have been considered

In Bankura district at Srikrishnapur village 10.52% respondent choose agriculture as their livelihood. 12.63% people is involved in animal husbandry. Piggery,poultry,fishery also found as existing livelihood of the respondents. In piggery 8.24% respondent involve and in poultry and fishery 6.31%,2.10% respondent involve respectively. It is evident that labor in local area got 1st rank as existing livelihood. Only 7.36% men of the respondents are going other state for work as labour. In this village most of the people get job in MGNREGA (14.73). One of the important livelihoods in Bankura district villages is that the villagers making plate from Sal leaf and sell it in the market. In Srikrishnapur village 15.78%

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respondent collecting Sal leaf from forest and making plate and bind it and sell in the market @ 80/- per bundle.

Table 7: Livelihood pattern in Sagrakata

(n=20)

Sl.no	Types of livelihood	No. of people involved	%	Rank
1	Agriculture	16	17.97	2nd
2	Animal husbandry	11	12.35	5th
3	Piggery	3	3.37	8th
4	Poultry	5	5.61	7th
5	Fishery	0	0	9th
6	Labor in local area	18	20.22	1st
7	Labor in other state	6	6.74	6th
8	MGNREGA	13	14.60	3rd
9	Service	5	5.61	7th
10	Making of plate from Sal leaf	12	13.48	4th
	Total	89	100	

Note : Multiple responses have been considered

In Bankura district at Sagrakata village 17.97% respondent choose agriculture as their livelihood. 12.35% people involve in animal husbandry. Piggery, poultry also found as existing livelihood of the respondents. In piggery 8.24% respondent involve and in poultry 5.61% respondents involve. It is evident that labor in local area got 1st rank as existing livelihood. Only 6.74% men of the respondents are going other state for work as labour. In this village most of the people got work in MGNREGA (14.60).

One of the important livelihoods in Bankura district villages is that the villagers making plate from Sal leaf and sell it in the market. In Sgrakata

village 13.48% respondent collecting Sal leaf from forest and making plate and bind it and sell in the market @ 80/- per bundle.

Income from livelihood

Table: 8 Income of the respondents from their livelihood in Porobasti

Sl.no.	Types of livelihood	Income/year(in Rs)	%	Rank
1	Agriculture	22300	15.27	3RD
2	Animal husbandry	21110	14.46	4TH
3	Picnic spot	36000	24.65	1ST
4	Labour in local area	20000	13.70	5TH
5	MGNREGA	6230	4.27	7TH
6	Labour in other state	25000	17.12	2ND
7	Other(collection of fire wood from forest)	15380	10.53	6TH
	Total	146020	100	

It is observed from the table that the maximum income of the respondents from their livelihood is obtained from picnic spot(24.65%) followed by labour in other state(17.12%),agriculture(15.27%), animal husbandry (14.46%), labour in local area(13.70%), collection of firewood from forest(10.53%) and MGNREGA(4.27%).

Accordingly the rank has been given to their respective income from the different livelihood. 1st rank obtained in income from picnic spot, labour in other state got 2nd, and income from agricultural livelihood take 3rd rank, animal rearing get 4th rank, labour who works in the local area income from these took 5th rank. Collection of firewood from the forest take 6th rank and income from MGNREGA get last rank.

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Table 9: Income of the respondents from their livelihood in Pampubasti

Sl.no.	Types of livelihood	Income/year(in Rs)	%	Rank
1	Agriculture	24100	20.17	2ND
2	Animal husbandry	12700	10.63	5TH
3	Picnic spot	31000	25.94	1ST
4	Labour in local area	13000	10.88	4TH
5	MGNREGA	8700	7.30	7TH
6	Labour in other state	12000	10.04	6TH
7	Other(collection of fire wood from forest)	18000	15.06	3RD
	Total	119500	100	

It is observed from the table that the maximum income of the respondents from their livelihood is obtained from picnic spot(25.94%) followed by agriculture(20.17%), collection of firewood from forest(15.06%) labour in local area(10.88%), animal husbandry(10.63%), labour in other state(10.04%) and MGNREGA(4.27%).

Accordingly the rank has been given to their respective income from the different livelihood. 1st rank obtained in income from picnic spot, income from agricultural livelihood took 2nd rank, Collection of firewood from the forest labour in other state get 3rdrank, labour who works in the local area income from these take 4th rank animal rearing get 5th rank, income of the labour work in other state take 6th rank and income from MGNREGA get last rank.

Table 10: Income of the respondents from their livelihood in Srikrishnapur

Sl.no	Types of livelihood	Income/year(in Rs)	%	Rank
1	Agriculture	57000	27.48	1ST

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2	Animal husbandry	22400	10.80	4TH
3	Piggery	24000	11.57	2ND
4	Poultry	28900	13.93	3RD
5	Fishery	17000	8.27	7TH
6	Labour in local area(@Rs 206/day)	19500	9.40	5TH
7	Labour in other state	14600	7.03	8TH
8	MGNREGA	6000	2.92	9TH
9	Making of plate from Sal leaf	18000	8.66	6TH
	Total	207400	100	

In Srikrishnapur village contribution of agriculture in income is 27.48% followed by piggery(11.57%),poultry(13.93%), animal husbandry(10.80%), local labour(9.40%), selling sal leaf plate(8.66%), fishery(8.27%),labour in other state(7.03%),and lastly MGNREGA(2.92%).

Income from the agriculture take 1st rank then piggery gets 2nd rank. Income from poultry farm 3rd rank. Animal husbandry 4th, labour in local area is on 5th rank. They make plate from Sal leaf and sell it in the market @ rs.80/- per bundle and the income from this livelihood take 6th rank among total income (80x225/year) of all respondents. Some of the respondent chose their livelihood as fishery and income from the fishery take 7th rank. Income of labour work in the other state take 8th rank and income from MGNREGA get last position.

Table 11: Income of the respondents from their livelihood in Sagrakata

Sl.no	Types of livelihood	Income/year(in Rs.)	%	Rank
1	Agriculture	47000	29.04	1ST
2	Animal husbandry	25000	15.45	2ND
3	Piggery	16000	9.90	5TH
4	Poultry	14000	8.65	6TH

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5	Fishery	0000	0	
6	Labour in local area(@206/day)	20000	12.40	3RD
7	Labour in other state	14000	8.65	6TH
8	MGNREGA	8000	4.91	7TH
9	Making of plate from Sal leaf(@Rs 80/bundle)	17800	11.00	4TH
	Total	161800	100	

In Sagrakata village contribution of agriculture in income is 29.04% followed by animal husbandry (15.45%), local labour (12.40%), selling sal leaf plate(11%),piggery(9.90%), poultry(8.65%), labour in other state(8.65%),and lastly MGNREGA(4.91%).

Income from the agriculture take 1st rank then Animal husbandry gets 2nd rank. Income of labour in local area 3red rank. They make plate from Sal leaf and sell it in the market @ rs.80/- per bundle and the income from this livelihood take 4th , among total income(80x221/year) of all respondents. piggery is on 5th rank. Income from poultry gets 6th rank. Income of labour work in the other state also take 6th rank and income from MGNREGA get last position.

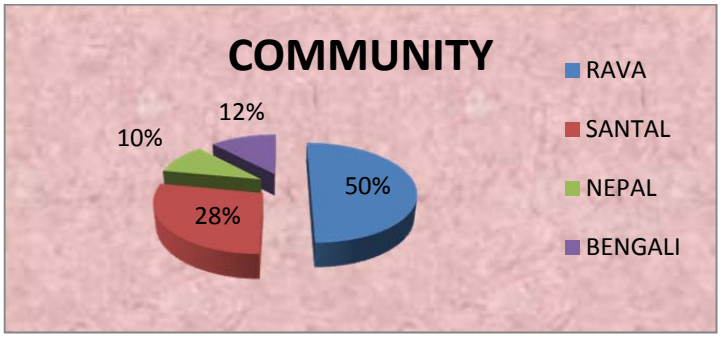

Fig. 7: Community in Alipurduar district

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The caste composition of the respondents(100 numbers) in both the districts have been presented already in the socio economic profile. But here the caste composition have been converted into community wise distribution for better understanding and presented . In Alipurduar district among 60 respondents 50% belong to RAVA community. Rest 28% Santhal , 12% Bengali, 10% from Nepali communities.

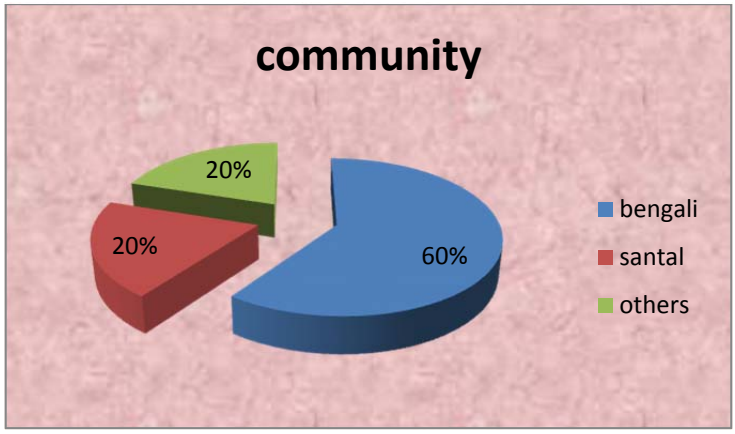

Fig 8: Community in Bankura district

The caste composition of the respondents(100 numbers) in both the districts have been presented in the socio economic profile. The caste composition have been converted into community wise distribution and presented .In Bankura district most of the people among the 20 respondents are Bengali (60%).Rest 40% are Santhal and others community.

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Table 12: General distribution of variables (Independent and Dependent) in terms of Mean, Standard deviation (S.D.), Co-efficient of variation (C.V.) for all respondents.

(N=100)

Attribute			Mean	S.D.	C.V.
1.	Age	X_1	47.75	14.29	29.93
2.	Caste	X_2	2.43	1.26	52.07
3.	occupation	X_3	3.2	1.763	55.11
4.	Education	X_4	3	1.84	61.59
5.	Family Type	X_5	1.24	0.49	39.98
6.	Family Size	X_6	1.42	0.49	34.93
7.	Land Holding	X_7	1.09	0.77	71.53
8.	House Type	X_8	2.46	1.17	47.79
9.	Farm Power	X_9	2.52	2.95	11.75
10.	Asset Possession	X_{10}	9.59	6.68	69.67
11.	Outside Communication	X_{11}	7.07	3.26	46.20
12.	Planning orientation	X_{12}	8.84	4.82	54.61
13.	Production orientation	X_{13}	13.96	7.91	56.66
14.	Market orientation	X_{14}	14.38	8.64	60.11
15.	Income	Y_1	1.46	0.62	42.68
16	Livelihood	Y_2	3.42	0.87	25.63

Table 1, presents the descriptive distribution of casual and consequent variables, which considered for the present study. Table 1, mean, standard division and coefficient of variation of the respondents according to their Caste, Occupation, Education, Family type, Family size, Land holding, House type, Farm power, Asset possession etc in a agreement in a given social system.

In case of Age(X_1), mean age of respondents of the study was 48 with a standard deviation of 14.29 for total distribution. The coefficient of

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variation of the age distribution of respondents is 29.93% which explained the moderator consistency of the total distribution.

The mean value of Caste(X_2) of respondents is 2.43 that are in primary and secondary school level & graduation level. The S.D of distribution is 1.26 with a coefficient of variation 0.52 which in turn reflected the low level of consistency.

The mean value of occupation(X_3) is 3.2. The S.D of distribution is 1.76. The coefficient of variation is 0.55.

The mean value of Education(X_4) is 3, with a standard deviation of 1.84. The coefficient of variation is 0.61..

In case of family type(X_5) mean value of family type of respondents of the study was 1.24 with a standard deviation of 0.49 for total distribution. The coefficient of variation of the age distribution of respondents is 39.98% which explained the moderator consistency of the total distribution.

In case of family size(X_6) mean value of family size of respondents of the study is 1.44 with a standard deviation of 0.49 for total distribution. The coefficient of variation of the age distribution of respondents is 34.93% which explained the moderator consistency of the total distribution.

In case of Land Holding(X_7), mean value of this variable of respondents of the study is 1.09, with a standard deviation 0.77 for total distribution. The coefficient of variation of this variable distribution of respondents is 71.53.

The mean value of House Type(X_8) was 2.46, with a standard deviation of 1.17. The coefficient of variation is 47.79 which depicted the medium level of consistency.

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The mean value of Farm Power(X_9), Asset Possession(X_{10}) of respondents are 2.52 ,9.59 that are in low level. The S.D of distribution is 2.95, 6.68 with a coefficient of variation 11.71 , 69.96 percent respectively which in turn reflected the very low level of consistency.

The mean value of Outside Communication (X_{11}) is 7.07 with a standard deviation of 3.26. The coefficient of variation is 46.20 which depicted the medium level of consistency.

The mean value of Planning orientation(X_{12}), Production orientation(X_{13}) and Market orientation(X_{14}) of respondents are 8.84 , 13.96 , 14.38 for last two antecedent variables. The S.D of distribution is 4.82 , 7.91 , 8.64 with a coefficient of variation of 54.61 , 56.69 , 60.11 respectively which in turn reflected the high level of consistency.

The mean value of income ($Y_{1)}$ is 1.46. The S.D of distribution is 0.62. The coefficient of variation is 42.68.

The mean value of livelihood (Y_2) is 3.42. The S.D of distribution is 0.87. The coefficient of variation is 25.63.

Correlation Coefficient between Dependent and Independent variables of the respondents

In the present study various independent variables (X_1 to X_{14}) have been correlated with dependent variables to find out whether there are relation between dependent and independent variables. This is presented in the following table.

Table 13: Correlation coefficient between independent variable(X_1-X_{15}) and dependent variable (income) for all respondents.

Variables	Correlation coefficient (r)
	Y1
Age (X_1)	0.176
Caste (X_2)	0.360**
Occupation (X_3)	0.291**
Education (X_4)	0.183
Family Type (X_5)	0.126
Family Size (X_6)	0.055
Land Holding (X_7)	0.349**
House Type(X_8)	0.190
Farm Power(X_9)	0.241*.
Asset Possession(X_{10})	0.255*
Outside Communication(X_{11})	-.006
Planning orientation(X_{12})	*0.*365**
Production orientation(X_{13})	0.324**
Market orientation(X_{14})	˙337**

******Significant at 0.01% level *****Significant at 0.05% level

In this table it is found that out of 14 independent variables(X), 8 variables have positive and significant correlation with income(Y1), 6 independent variables have no significant relationship with income. The variables farm power and assets possession are positively correlated with the income at 0.05% level of significance. And the variables caste, occupation, land holding, planning orientation, production orientation and market orientation are also positively correlated with income at 0.01% level of significance.

It is quite obvious that the occupational pattern from which the income of the respondents in the study area is largely depends on the land based activities and contributed significantly from agriculture and animal rearing,

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despite the fact that their earning is also contributed as wage earner from the different developmental activities.

One of the most interesting features of the findings is that management orientation in the form of planning orientation, production orientation and market orientation have played a major role in the proper utilization of land and effective marketing of the produce contributed significantly from the agriculture and its allied sectors.

So, the income from the different sources have nicely scanned by the analysis and the people of forest fringe area for their sustenance and survival fighting hard after they have been deprived from the facilities of the forest department.

Table 14: Correlation coefficient between the livelihood (mandays) and independent variables(X_1-X_{14})for All respondents.

Variables	Correlation coefficient (r)
	Y2
Age (X_1)	.198*
Caste (X_2)	0.042
Occupation (X_3)	0.181
Education (X_4)	0.32
Family Type (X_5)	0.248*
Family Size (X_6)	*0.202*
Land Holding (X_7)	*0.038*
House Type(X_8)	0.193
Farm Power(X_9)	*-0.024*
Asset Possession(X_{10})	0.171
Outside Communication(X_{11})	0.53
Planning orientation(X_{12})	0.327**
Production orientation(X_{13})	-0.013
Market orientation(X_{14})	0.312**

******Significant at 0.01% level *****Significant at 0.05% level

In this table it is found that out of 14 independent variables(X), 4 variables have positive and significant correlation with livelihood (Y2), 10 independent variables have no significant relationship with livelihood. The

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variables age and family type are positively correlated with the livelihood at 0.05% level of significance. And the variables planning orientation and market orientation are also positively correlated with livelihood at 0.01% level of significance.

Here it is interesting to note that age and family type have played a major role in livelihood as the younger member in the family can earn more income from the different sources available and their agility and ability to work hard in order to augmenting the family income. It is evident from the study that a family type which is mostly nuclear in nature is suggestive of the fact that their demand is lesser then the joint family so, the requirement will be less in comparison to the other type of family.

Other variables which are found to have contributed significantly in the livelihood like planning orientation and market orientation. The traditional livelihood pattern in the forest fringe area people assumed to have major contribution like management of picnic spot, collection of fire wood and sale and making of plate from Sal leaf besides other livelihood option available in the area.

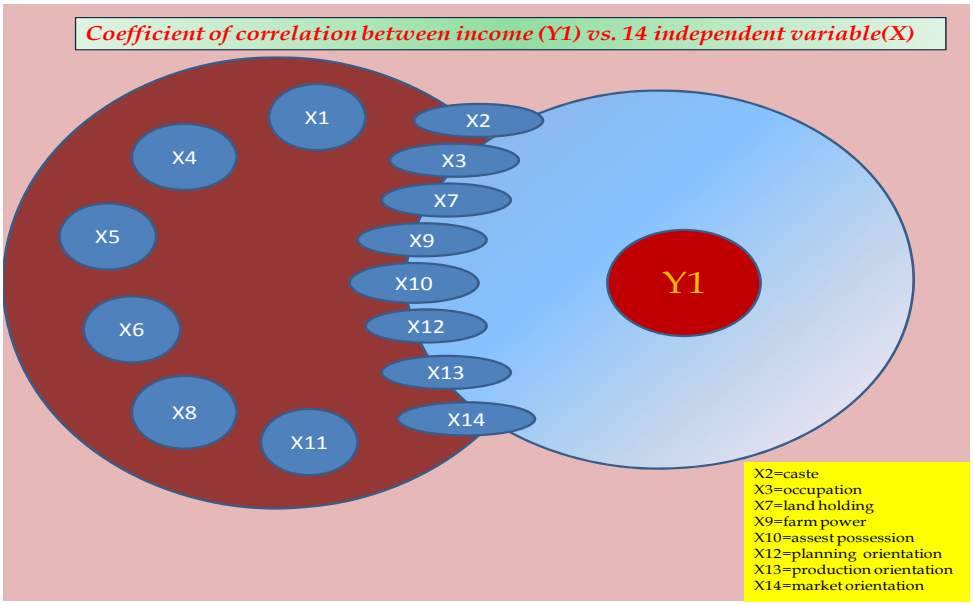

Fig: 9

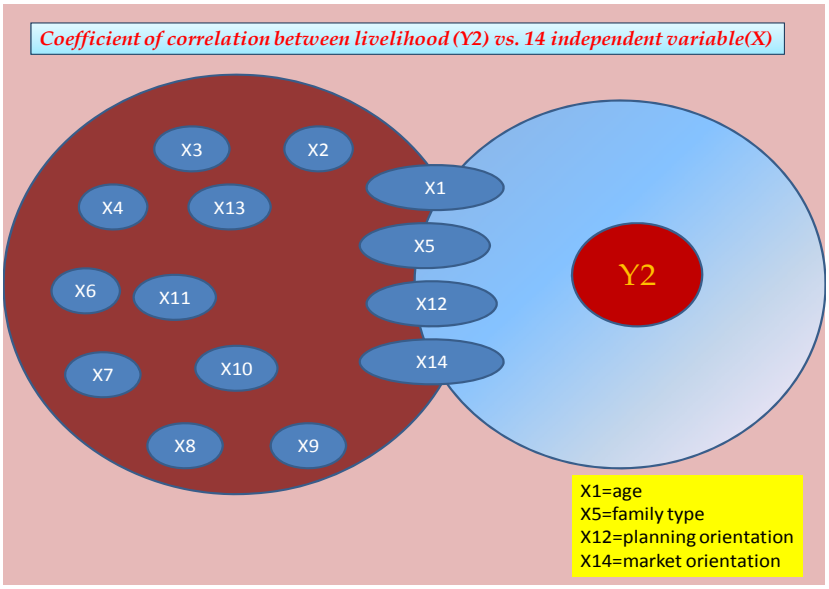

Fig: 10

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MULTIPLE REGRESSION ANALYSIS

Table 15: Multiple regression analysis: Income (Y1) vs. 14 independent variable (X1-X14)

Multiple R^2=0.285

Sl. No.	Variables	Beta	Reg. coef. B	S, error B	t-value	Remarks
1	Constant		1.121	.304	3.689	
2	Age (X_1)	.010	.013	.170	.080	
3	Caste (X_2)	.273	.134	.068	2.103*	*
4	Occupation (X_3)	.062	.022	.063	.347	
5	Education (X_4)	.093	.031	.053	.592	
6	Family Type (X_5)	-.014	-.018	.200	-.091	
7	Family Size (X_6)	.011	.014	.172	.081	
8	Land Holding (X_7)	.135	.107	.182	2.388	*
9	House Type(X_8)	-.330	-.176	.101	-1.747	
10	Farm Power(X_9)	-.032	-.007	.034	-.199	
11	Asset Possession(X_{10})	.179	.017	.019	2.303	*
12	Outside Communication(X_{11})	-.236	-.045	.025	-1.814	
13	Planning orientation(X_{12})	.056	.007	.036	.205	
14	Production orientation(X_{13})	-.235	-.019	.030	-.622	
15	Market orientation(X_{14})	.502	.037	.025	1.479	

- At 5% probability level and 85 degrees of freedom the table t value is 1.998.

It has been found that caste(X_3), land holding(X_7), assets possession (X_9) has recorded a significant causal-effect impact on income (Y_1) which is dependent variable. Value of r^2 is 0.285.we can conclude that almost

29%of variability has been embedded with consequent variable income(Y1), which has been explained with the combination of 14 causal variable.

Table 16: Multiple regression analysis: livelihood(Y_2) vs. 14 independent variable(X_1-X_{14})

Multiple R^2=0.207

Sl. No.	Variables	Beta	Reg. coef. B	S, error B	t-value	Remarks
1	Constant		2.239	.437	.000	
2	Age (X_1)	.075	.010	.015	.340	
3	Caste (X_2)	.081	.055	.101	.547	
4	Occupation (X_3)	-.072	-.036	.090	-.395	
5	Education (X_4)	-.105	-.049	.075	-.650	
6	Family Type (X_5)	.298	.521	.290	2.800	*
7	Family Size (X_6)	.160	.279	.248	1.128	
8	Land Holding (X_7)	-.180	-.198	.267	-.742	
9	House Type(X_8)	.628	.465	.144	3.215	*
10	Farm Power(X_9)	-.108	-.031	.049	-.639	
11	Asset Possession(X_{10})	-.263	-.034	.027	-1.274	
12	Outside Communication(X_{11})	.021	.006	.036	.157	
13	Planning orientation(X_{12})	.406	.072	.051	2.423	*
14	Production orientation(X_{13})	-.665	-.073	.035	-2.067	
15	Market orientation(X_{14})	.086	.009	.025	.344	

At 5% probability level and 85 degrees of freedom the table t value is 1.998.

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It has been found that family type (X_5),house type (X_8), planning orientation(X_{13}) has recorded a significant causal-effect impact on livelihood (Y_2) which is the dependent variable.

The value of $r^2$is 0.207.and we can conclude almost 21% of the variability embedded with consequent variable livelihood(Y2),which has been explained with the combination of 14 causal variable.

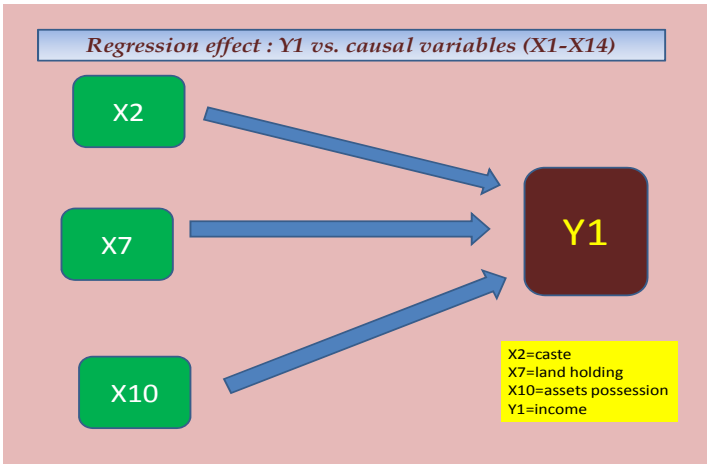

Fig: 11

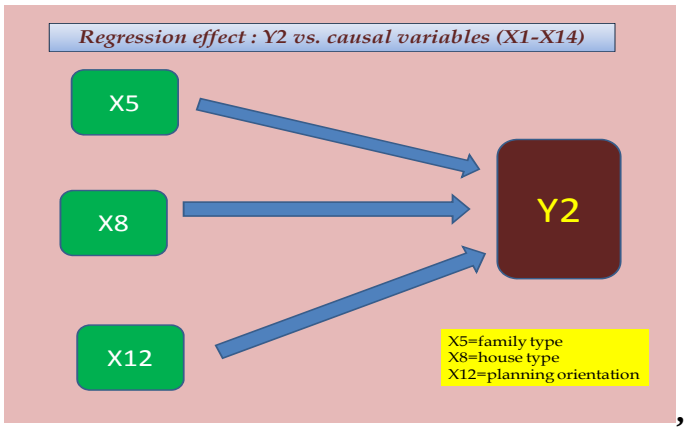

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Fig: 12

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t – test

The study was conducted in four villages of Alipurduar and Bankura districts of west Bengal. In the two districts the livelihood pattern income sources are different. To find out whether, there is any significant difference in the income and livelihood of the respondents in two districts t- test was conducted. The results of the t-test are presented in the following.

Table 17: t- statistics to test the variation in the income of the respondents in the 4 villages of two districts.

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Pair 1	y1a - y1b	1.63000E3	3263.41020	515.99046	586.31078	2673.68922	3.159	39	.003

Calculated t >2.707 significant at p=0.01(**) at 39 degrees of freedom and calculated t>2.022 significant at p=0.05(*) at 39 degrees of freedom.

The t – test used to test the variation in the income of the respondents between villages of Alipurduar and Bankura districts. It is observed that the calculated value was 3.159 which were highly significant. Hence, we can conclude that there is significant difference in the income of respondents in Alipurduar and Bankura district of West Bengal.

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Table 18: t- statistics to test the variation in the livelihood of the respondents in the 4 villages of two districts.

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	y2a - y2b	3.35000E1	66.93089	10.58270	12.09446	54.90554	3.166	39	.003

At 39 degrees of freedom the calculated t >2.707 significant at p=0.01(**) and calculated t>2.022 significant at p=0.05(*)

The t – test used to test the variation in the livelihood of the respondents between villages of Alipurduar and Bankura districts. It is observed that the calculated value was 3.166 which were highly significant. Hence, we can conclude that there is significant difference in the livelihood of respondents in Alipurduar and Bankura district of West Bengal.

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Table 19: Factor Analysis- Conglomeration of 14 variables in 3 factors

Factors	Variables	Factor Loading	% of Variance	Cumulative %	Factors Renamed
Factor 1	Asset possession(X10)	.0838	52.346	52.346	Management orientation
	House type(X8)	0.836			
	Occupation(X3)	0.823			
	Production orientation(X13)	0.823			
	Market orientation(X14)	0.760			
	Planning orientation(X12)	0.744			
	Farm power(X9)	.0693			
	Education(X4)	0.687			
	Caste(X2)	0.633			
Factor 2	Land holding(X7)	0.987	12.267	64.613	Modernism
	Outside communication(X10)	0.670			
	Age(X1)	0.665			
Factor 3	Family size(X6)	0.879	11.370	75.983	Family construct
	Family type(X5)	0.595			

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Factor analysis has been carried out for the static conglomeration of variables based on Eigen roots that is derived from coefficient of correlation. So, a recommendation types of agglomeration results which can be trenched as a factor.

In the table 19 factor 1 has accounted for 52.346%of total data variance, 9 variables with a high factor loading i.e. assets possession (X10),house type (8),occupation(X3), Production orientation(X13), Production orientation(X13), Market orientation(X14), Planning orientation(X12), Farm power(X9), Education(X4), Caste(X2). Chosen to interpret this factor. The factor loading of all variable is positive. Factor 1 has been renamed as **Management Orientation**.

The factor 2 has include 3 variables i.e. land holding(X7), outside communication(X10), age(X1) that have contributed 12.267% of variance. The factor loading of all variable is positive. Factor 2 has been renamed as **Modernism.**

The factor 3 has included 2 variable i.e. family type(X6) and family size(X5) that has contributed 11.307% of variance. The factor loading of all 2 variables is positive. Factor 3 has been renamed as **Family construct**.

Table 20: Paradigm for sustainable development in Alipurduar

Sl no.	Existing livelihood	Proposed livelihood
1	Livelihood based on rain fed farming	Emphasis should be given on watershed
2	Lack of irrigation facilities	Introduction of dug well with soundless pump set

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3	Pre domination of subsistence farming. traditional cultivation practices	Livelihood generation through ecological farming eg. cultivation of turmeric to check elephant depredation by replacing maize and wheat
4	Scientific management is not followed for animal rearing. Dominance of non descript cattle	Introduction of A.I. cattle for better adaptabilities and ecological resilience
5	Lack of forest based industries	Forest based industries to be introduced as for e.g. citronella oil extraction plant, khair processing plant and others wood based plant
6	Picnic spots is under developed, running in a traditional way	Development of existing picnic spots by way of establishing watch tower, facilities for better drinking water, jungle ride.
7	Lack of Training facilities in agriculture and allied sector	Arrangement of training programme for the farmer by the Government
8	The area is devoid of Eco tourism.	Develop cottage industry/resort for development of eco tourism
9	Inadequate govt. support for the sustainable development SHG's.	Revival of SHG's with the support from the Government .
10	Wild animals are a great threat for the forest fringe area people	Create electric fencing for protection from wild animals
11	Wild animal destroy the crop in the field	Awareness generation for cultivation of crops which are not preferred by the wild animal like drumstick, chilli, sesame etc.
12	The role of women is not encouraging in economic activities for development of their livelihood	Creation of employment opportunity for women
13	Privet money lenders are the barriers for development of the people	Provision of institutional finance to curb the dominance of private money lenders

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Table: 21 Paradigm for sustainable development in Bankura

Sl no	Existing livelihood	Proposed livelihood
1	Dominance of dry land farming.	Development of watershed and micro irrigation system.
2	Pre domination of subsistence farming. traditional cultivation practices	Livelihood generation through ecological farming e.g. cultivation of turmeric to check elephant depredation by replacing maize and wheat
3	Scientific management is not followed for animal rearing. Dominance of non descript cattle	Introduction of A.I. cattle for better adaptabilities and ecological resilience
4	Lack of Training facilities in agriculture and allied sector	Arrangement of training programme for the farmer by the Government
5	Inadequate govt. support for the sustainable development SHG's	Revival of SHG's with the help of govt. assistances.
6	Wild animals are a great threat for the forest fringe area people	Create electric fencing for protection from wild animals
7	Wild animal destroy the crop in the field	Cultivate the crop which are not preferred by the wild animal like drumstick, chilli, sesames etc.
8	Privet money lender are the barrier for development of the people	Provision of institutional finance to curb the dominance of private money lender
9	Dryness/lack of water is a main problem in the cultivated field.	Cultivation of crop which can tolerate the dry situation. Awareness generation/use of water saving devices.
10	Dominances of traditional cropping pattern.	Alternative cropping pattern to be introduced and other types of land should be brought under cultivation.

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11	The area is suitable for seed industry but there is no seed industry is available.	Using the environmental situation seed industries can be established.
12	Lack of irrigation facilities	Introduction of new water saving device
13	Plate making from the Sal leaf is an innovative and popular enterprise	Modernization and marketing facilities need to be developed

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