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The profile characteristics of beneficiary farmers of reliance foundation information services (RFIS) and their association with the impact of RFIS in Saurashtra region of Gujarat

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Abstract

A study was conducted in Junagadh, Gir Somnath and Jamnagar Districts of Saurashtra region of Gujarat to know profile of RFIS beneficiaries and its association with the impact created by RFIS. Multistage random sampling was followed to select two talukas from each selected district and three villages from each taluka. From each village, ten respondents were selected randomly. Thus, a total of 180 respondents were selected for the study. The results indicated that with respect to profile characteristics, majority belonged to middle age group; had middle/secondary school education and had medium size of family. In socio economic characteristics majority had farming + animal husbandry as main occupation; semi medium size of land holding and medium annual income. With regards to communicational characteristics, majority had medium level of mass media utilization and medium level of social participation. In psychological characteristics, majority had medium level of innovativeness; medium access to weather forecast; medium level of decision-making ability; medium level of credibility and medium level of risk orientation. The characteristics of the farmers *viz.* education, land holding, annual income, mass media utilization, risk orientation, had positive and highly significant relationship with the impact of RFIS. Whereas, occupation, social participation, innovativeness, access to weather forecast, and had positive and significant relationship with the impact of RFIS. Age had negative and highly significant relationship with the impact of RFIS while size of family, decision making ability and credibility had non-significant with the impact of RFIS.

Keywords: RFIS, impact, socio-economic, psychological, communicational, multistage random sampling

Introduction

Agriculture serves as the foundation of the Indian economy, with a significant portion of the workforce directly or indirectly engaged in this sector. During the 1950s, Indian agriculture solely accounted for more than 50 per cent of the GDP. However, over the subsequent years, there has been a notable decline in the contribution of agriculture to the GDP. Approximately 60 to 70 per cent of the Indian population relies on agriculture for their livelihoods, contributing only 16 to 17 per cent to the Gross Domestic Product (GDP). This trend suggests that the growth in agricultural productivity has not kept pace with the advancements in the service and manufacturing sectors, resulting in a diminished role of the agriculture sector in overall GDP. The implementation of Reliance Foundation Information Services (RFIS) involves the utilization of both modern Information Communication Technology (ICT) media and traditional face-to-face contact methods. ICT can act as a catalyst in the productivity of Indian agricultural markets (Rohilla *et al.,* 2017) [21] Among the various ICT tools available today, mobile phones and the internet play a pivotal role. Mobile phones, in particular, serve as versatile devices capable of storing, creating, accessing, and sharing information at any location and time. The integration of mobile phones with internet connectivity offers the additional advantage of accessing the latest information from anywhere. Reliance Foundation Information Services (RFIS) is providing critical information to farmers using various communication channels (Kumar *et al.,* 2019) [11]. When linked with extension advisory services, these mobile technologies prove to be cost-effective in providing timely information, thereby contributing to the improvement of rural livelihoods.

The portability of mobile phones enables users to carry them anywhere, allowing stored information to be retrieved at various locations such as input stores, farms, markets, or homes. The stored information remains accessible at any point in the future. In the context of the Saurashtra region in Gujarat, Junagadh Agricultural University (JAU), with technical support from Krishi Vigyan Kendra's (KVKs), District Agricultural Advisory and Transfer of Technology Centers (DAATTCs), and Agricultural Research Stations (ARSs), is actively involved in providing technical assistance to RFIS across all districts. RFIS, as an ICT initiative, focuses on reaching farmers engaged in agriculture, horticulture, animal husbandry, fisheries, and

other allied sectors. The transfer of technologies through RFIS includes mobile messages (text and voice), a toll-free number (1800 419 8800), bulletins, broadcasts, video conferences, veterinary camps, field awareness programs, and knowledge-on-wheels programs.

Objectives

- To study the profile of beneficiary farmers of Reliance Foundation Information Services (RFIS).
- To find out the relationship between profile and the impact of RFIS on beneficiary farmers.

Methodology

The study was conducted in the Saurashtra region of Gujarat which comprises of 11 districts. Three districts from these 11 were undertaken to conduct the survey *viz.* Junagadh, Gir Somnath and Jamnagar because highest number of beneficiary farmers were found in these 3 districts. Further, multistage random sampling was employed to select talukas, villages and farmers. Two talukas from each district and three villages from each taluka were selected constituting a total of 6 talukas and 18 villages. From each village, 10 farmers were selected randomly making up a total sample of 180 beneficiary farmers. The research followed an *ex post facto* research design. To collect the data, an already structured scale (interview schedule) was used with modifications and presented before the respondents through a face-to-face interview method.

Results and Discussion

Table 1: Profile of RFIS beneficiary farmers (n=180)

Sr. No.	Category	Frequency	Per cent
1	**Age**		
	Young age (18 to 35 years)	61	33.88
	Middle age (36 to 50 years)	89	49.46
	Old age (Above 50 years)	30	16.66
2	**Education**		
	Illiterate	15	08.33
	Functionally Literate	21	11.48
	Primary school level	35	19.44
	Middle school level	59	33.23
	High school level	29	16.11
	College/ post-graduation	21	11.41
3	**Family size**		
	Small (Up to 3 members)	57	31.66
	Medium (4 to 6)	74	41.11
	Large (7 to 9)	31	17.22
	Very large (10 & above)	18	10.01
4	**Occupation**		
	Only farming	53	29.44
	Farming + Animal Husbandry (AH)	79	43.88
	Farming + Service (FS)	19	10.81
	Farming + Animal Husbandry + Service (FAS)	13	07.22
	Farming + Animal Husbandry + Business (FAB)	16	08.65
5	**Land holding**		
	Marginal (Up to 1 ha)	28	15.55
	Small (1.1 to 2 ha)	53	29.44
	Semi Medium (2.1 to 4 ha)	61	33.88
	Medium (4.1 to 10 ha)	25	13.88
	Large (10.1 ha & above)	13	07.25
6	**Annual income**		
	Very low annual income (Up to ₹ 50,000/-)	35	19.46
	Low annual income (₹ 50,001/- to ₹ 1, 00,000/-)	42	23.33
	Medium annual income (₹ 1,00,001/- to ₹ 1,50,000/-)	55	30.55
	High annual income (₹ 1,50,001/- to ₹ 2,00,000/-)	29	16.11
	Very high anuual income (Above ₹ 2,00,000)	19	10.55
7	**Mass media utilization**		
	Low mass media utilization (<6.68 score)	24	13.35
	Medium mass media utilization (6.68- 12.84 score)	113	62.77
	High mass media utilization (>12.84 score)	43	23.88
8	**Social participation**		
	Low social participation (Up to 3.44 scores)	29	16.11
	Medium social participation (3.45 to 8.45 scores)	102	56.88
	High social participation (Above 8.45 scores)	49	27.01
9	**Innovativeness**		
	Traditional innovative farmers	19	10.57
	Less innovative farmers	55	30.55
	Medium innovative farmers	65	36.12

	Moderately innovative farmers	25	13.86
	More innovative farmers	16	08.90
10	**Access to weather forecast**		
	Low access to weather forecast (Up to 1.81 scores)	30	16.67
	Medium access to weather forecast (1.82 to 6.37 scores)	112	62.13
	High access to weather forecast (Above 6.37 scores)	38	21.20
11	**Decision making ability**		
	Low decision making ability (Up to 8.84 score)	29	16.13
	Medium decision making ability (8.85 to 15.76 score)	113	62.50
	High decision making ability (Above 15.76 score)	38	21.37
12	**Credibility**		
	Low level of credibility (<14.32 scores)	38	21.13
	Medium level of credibility (14.32-25.48 scores)	110	61.12
	High level of credibility (>25.48 scores)	32	17.75
13	**Risk orientation**		
	Very low level risk orientation (Up to 5 scores)	4	01.80
	low level risk orientation (6 to 10 scores)	33	18.20
	Medium level risk orientation (11 to 15 scores)	65	36.06
	High level risk orientation (16 to 20 scores)	46	26.42
	Very high level risk orientation (21 to 25 scores)	32	17.52

1. Age

The table 1 depicts that about half (49.46 per cent) of the respondents belonged to middle age group, followed by 33.88 per cent and 16.66 per cent falling in young age and old age group, respectively. It can be concluded from above result that majority (83.34 per cent) of the respondents were from young to middle age groups. The reason might be the fact that generally in the rural social system, middle age group head the families in most of the cases, and they are the ones who take information from RFIS. This finding was in conformity with the finding of Sahu *et al.* (2017) [22], Vivek (2017) [28] and Bordoloi *et al.* (2018) [6].

2. Education

The data presented in the Table 1 indicated that one-third (33.23 per cent) of farmers were educated up to middle school or secondary school level, followed by 19.44 per cent of them were having education up to primary school level and 16.11 per cent educated up to higher secondary level. The near equal proportion of farmers were functionally illiterate (11.48 per cent) and college/P.G. level (11.41 per cent). Further, only 08.33 per cent of the respondents were illiterate. The probable reasons might be the lack of proper educational facilities in area under study. This finding was in concurrence with the finding of Vivek (2017) [28] and Tankodara (2019) [26].

3. Family size

Table 1 also indicated that more than one-third (41.11 per cent) of the farmers belonged to medium size of family, followed by 31.66 per cent belonging to small size family group, 17.22 per cent having big size of family and 10.01 per cent farmers having very large size of family. The probable reason for higher number of respondents in medium sized family group might be the migration from rural areas to cities in search of livelihood and hope for better living. This finding was in line with the finding of Parmar and Chauhan (2018) [20], Sharma *et al.* (2018) [25] and Ansari and Ansari (2019) [2].

4. Occupation

Table 1 revealed that more than two-fifth (43.88 per cent) of the respondents' occupation was farming + animal husbandry. Whereas 29.44 per cent respondents' occupation was agriculture, followed by 10.81 per cent, 07.22 per cent and 08.65 per cent respondents having farming + service, farming + animal husbandry + business and farming + animal husbandry + service, respectively. It can be concluded that majority of the respondents (73.32 per cent) were having farming and farming + animal husbandry as main occupation. The reason might be that most of the rural households earn their income from farming + animal husbandry. As the greater number of farmers were having small to semi medium size of land holding, they were having animal husbandry as a supplementary occupation. Animal husbandry gives additional income from milk, and helps in smooth running of their home expenditure. This finding was in conformity with the finding of Darji (2018) [7].

5. Land holding

Table 1 revealed that slightly more than one-third (33.88 per cent) of the respondents were having semi medium size of land holding, followed by small size of land holding (29.44 per cent), marginal size of land holding (15.55 per cent) and 13.88 per cent of respondents had medium size of land holding. Only 07.25 per cent of respondents had big size of land holding (above 10.00 ha). The probable reason might be that the farmers under the study area were living in medium sized families and they might have their own separate land holding on their names, thereby reducing the size of the landholding that an individual possesses. This finding was in conformity with the finding of Sharma *et al.* (2018) [25].

6. Annual income

The data presented in Table 1 also revealed that slightly less than one-third (30.55 per cent) of the farmers were in income group of ₹ 1,00,001/-to ₹ 1,50,000/-, followed by 23.33 per cent farmers falling in income group of ₹ 50,001/- to ₹1,00,000/, up to ₹ 50,000/- (19.46 per cent), whereas 16.11 per cent and 10.55 per cent respondents having incomes ₹ 1,50,000/-to ₹ 2,00,000/-and above ₹ 2,00,000/-, respectively. The probable reason might be their semi-medium and small size of land holding with irregular and erratic rainfall as well as lower price of product in market

which leads to their to medium annual income. Another reason might be that farmers make use of chemical pesticides, fertilizers and labour the cost of which is very high. So, farmers had medium to low annual income. This finding was in line with the finding of, Lohare (2017) [13], Bhabhor *et al*. (2019) [5] and Aysha (2020) [4].

7. Mass media utilization

It could be inferred from Table 1 that less than two third of the respondents had medium (62.77%) mass media utilisation, followed by high (23.88%) and low (13.35%) mass media utilization. The findings are in contrast with those reported by Ganesan *et al*. (2013) [8], Mishra and Mishra (2016) [16].

8. Social participation

The data presented in Table 1 indicated that 56.80 per cent of farmers had medium social participation, followed by high (25.71 per cent) and low (17.15 per cent) social participation. It is known that co-operative organizations in Gujarat are very strong. Almost all the villages of Saurashtra region are having at least one co-operative organizations *viz*., service co-operative society and milk co-operative society. Majority farmers were members in village milk producers' co-operative society as well as informal association including caste mandals, religious groups etc., which might have motivated them to take part in the social activities. The present findings were in line with the findings of Nithish *et al*. (2018) [19] and Hothi (2019) [9].

9. Innovativeness

It is observed from the data presented in Table 1 that more than one-third (36.12 per cent) of the farmers had medium level of innovativeness, followed by 30.55, 13.86 and 10.57 per cent of them having less, moderately and traditional of innovativeness, respectively. While 8.90 per cent of the farmers were more innovative. Therefore, it can be concluded that majority (58.87 per cent) of the farmers had medium to high level of innovativeness. This might be due to the fact that farmers were having medium to high extension participation and exposure to various information sources which have made them more innovative. The present findings were in line with the findings of Nishitha (2016) [18], Vivek (2017) [28] and Naik (2018) [17].

10. Access to weather forecast

The data present in Table 1 indicated that nearly three fifth (62.13 per cent) of farmers had medium access to weather forecast followed by high (21.20 per cent) and low (16.67 per cent) access to weather forecast. Hence, it can be said that friends/relatives/etc. and newspaper were more credible among the respondents. More than half of them were using those sources for gathering information but most of the respondents were not applying it in their actual practice due to irrelevancy of weather-related information. Therefore, relevant and timely weather forecast is needed to build trust among the respondents, so that they can change their cultivation practices according to changing climatic condition. The present findings were in line with the findings of Athimuthu (1982) [3] and Kumar *et al.* (2020) [12].

11. Decision making ability

Table 1 revealed that more than three fifth (62.50 per cent) of farmers had medium level of decision-making ability, followed by high (21.37 per cent) and low (16.13 per cent) level of decision-making ability. This might be due to the fact that farmers were having high innovativeness, medium to high extension participation and exposure to various information sources which might have made them medium to high decision making. The present findings were in line with finding of Nishita (2016), Sharad (2016) [24] and Zala (2021) [30].

12. Credibility

Table 1 revealed that that slightly more than half (61.12 per cent) of farmers had medium level of credibility, followed by low (21.13 per cent) and high credibility (17.75 per cent). This might be because of significant extension participation.

13. Risk orientation

It is apparent from the data presented in the Table 1 that slightly more than one third (36.06 per cent) of farmers had medium level of risk orientation, followed by 26.42, 18.20 and 17.52 per cent of them having high, low and very high level of risk orientation, respectively. However, negligible number (01.80 per cent) of farmers had very low level of risk orientation. Hence, it can be concluded that great majority (62.40 per cent) of farmers had medium to high level of risk orientation. This might be due to the fact that farmers were having good farming experience and were well aware about the advantage of taking risks in the farming for getting the higher yields. Therefore, majority of the farmers might be taking moderate to high levels of risk in farming. The farming community faces much risk as they are prone to natural calamities such as drought and floods, high fluctuation in the prices of output, domination by middleman, spurious input, labour, diseases and pest etc. The present findings were in line with the finding to Verma *et al*. (2016) [27] and Naik (2018) [17].

Association between the selected characteristics of farmers and their impact of rfis on benificiary farmers

In order to ascertain the relationship between the impact (dependent variable) of the farmers and their selected characteristics (independent variables), the co-efficient of correlation ('r') were calculated. The empirical hypotheses were stated for testing the relationship and its significance of correlation is given in Table 2.

Table 2: Association between selected characteristics of farmers with their impact of RFIS (n=180)

Sr. No.	Name of the independent variables	'r' value
1.	Age	-0.4320**
2.	Education	0.3070**
3.	Size of family	0.0677^{NS}
4.	Occupation	0.1923*
5.	Size of land holding	0.2645**
6.	Annual income	0.2284**
7.	Mass media utilization	0.2452**
8.	Social participation	0.1412*
9.	Innovativeness	0.1641*
10.	Access to weather forecast	0.1912*
11.	Decision making ability	0.0910^{NS}
12.	Credibility	0.0784^{NS}
13.	Risk orientation	0.3053**

The study examined how various socio-economic and psychological factors influence the impact of RFIS (Rural Farm Information Services) on farmers, with key findings derived from statistical analyses. Age showed a negative and significant correlation (r=-0.4320) with the impact of RFIS, suggesting younger farmers benefit more, possibly due to their stronger connection to mass media. In contrast, education displayed a positive and significant relationship (r=0.3070), indicating that educated farmers are more likely to utilize RFIS effectively because education fosters rational thinking, knowledge acquisition, and progressive behavior. Occupation (r=0.1923) also had a positive relationship, with farmers engaged in diverse activities like farming combined with animal husbandry being more impacted, likely due to their broader knowledge base. Similarly, the size of landholdings (r=0.2645) positively influenced RFIS impact, reflecting how larger holdings, often associated with higher income, enable better utilization of resources and services.

Annual income (r=0.2284) emerged as another significant factor, indicating that financial stability enhances farmers' ability to access and implement RFIS information effectively. Mass media utilization (r=0.2452) showed a positive correlation, reinforcing the role of information dissemination in increasing RFIS impact. Social participation (r=0.1412) and innovativeness (r=0.1641) also had significant positive correlations, highlighting that socially active and innovative farmers are more receptive to adopting new ideas and leveraging RFIS. However, credibility (r=0.0784) was found to have a non-significant relationship, suggesting that trust in RFIS does not substantially influence its impact. Lastly, risk orientation (r=0.3053) was positively correlated, indicating that farmers willing to take calculated risks are more inclined to explore and benefit from RFIS. These findings underline the multifaceted nature of factors affecting the efficacy of RFIS and emphasize the need for targeted interventions to maximize its benefits for diverse farmer groups.

Conclusion

The study concludes that with respect to profile characteristics, majority belonged to middle age group; had middle/secondary school education and had medium size of family. In socio economic characteristics majority had farming + animal husbandry as main occupation; semi medium size of land holding and medium annual income. With regards to communicational characteristics, majority had medium level of mass media utilization and medium level of social participation. In psychological characteristics, majority had medium level of innovativeness; medium access to weather forecast; medium level of decision-making ability; medium level of credibility and medium level of risk orientation. As far as the relationship between these variables with the impact of RFIS on the beneficiaries is concerned, it was found that variables like education, land holding, annual income, mass media utilization, risk orientation, had positive and highly significant relationship with the impact of RFIS. Whereas, occupation, social participation, innovativeness, access to weather forecast, and had positive and significant relationship with the impact of RFIS. Age had negative and highly significant relationship with the impact of RFIS while size of family, decision making ability and credibility had non-significant with the impact of RFIS. The study paves a way for the researchers and policy makers as it highlights the profile of the RFIS beneficiary and how it is associated with the impact that RFIS generates among them.

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Conflict of Interest

No conflict of interest among researchers

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