ASSOCIATION BETWEEN THE PROFILE OF STAKEHOLDERS AND THEIR LEVEL OF CONVERGENCE IN AGRICULTURAL INNOVATION SYSTEM

P. H. Vihariya[1], K. V. Gardhariya[2] and Y. H. Rathwa[3]

1&2 Research Associate, EEI, AAU, Anand - 388110
3 Senior Research Fellow, EEI, AAU, Anand - 388110
Email : payal14.vihariya@gmail.com

ABSTRACT

Convergence is being made to achieve the common objectives and mutual benefits between partners for targeted project, programmes and /or schemes, where both are sharing their values and outcomes. The present study was carried out in seven districts of South Gujarat during 2020. The six types of stakeholders were playing pivotal role in AIS hence the list of each type of stakeholder were obtained from the concerned authorities. A simple random sampling method was adopted to obtain respondents sample size. Thus, 30 researchers, 50 extensionists, 30 In-charge of NGOs, 30 managers of private agencies, 50 owner of agro-service providers and 50 progressive farmers were selected. All the 240 stakeholders were randomly selected. The statistical tools and method was used to analyze the data were frequency, percentage, arbitrary method and correlation of coefficient. The data represents that overwhelming majority (92.91%) of the respondents as stakeholders had poor to good level of convergence in AIS. The data also reveals that the age, communication ability, information seeking behaviour, mass media exposure, cohesiveness, stress management and management orientation had highly significant correlation with convergence among researchers in AIS. The data tells that the age, stress management and management orientation had highly significant correlation with convergence among extensionists in AIS. While, communication ability was significantly corelated with convergence among extensionists. The data reveals that the age, stress management and management orientation had highly significant correlation with convergence among in charge of NGOs in AIS. While, information seeking behavior, mass media exposure and cohesiveness were significantly corelated with convergence among in charge of NGOs. The data shows that the age, mass media exposure, cohesiveness, stress management and management orientation had highly significant correlation with convergence among manager of private agency in AIS. While, communication ability and information seeking behavior were significantly corelated with convergence among manager of private agency. The data reveals that the age, education, annual income, land holding, extension participation, innovativeness, mass media exposure, achievement motivation, cohesiveness and risk orientation had highly significant correlation with convergence among agro service providers in AIS. While, communication ability and information seeking behavior had significantly corelated with convergence among agro service providers in AIS.

Keywords: level of convergence, stakeholder, agrcultural innovation system

INTRODUCTION

Convergence word derived from the prefix con, meaning together, and the verb verge, which means to turn toward. Convergence among all stakeholders within all sector is needed to avoid duplication of efforts; additionally, the extension component of allied departments needs to be strengthened. (Pandya *et.al* 2007). This way an organisation can avoid duplicity, reducing work load, develop communication skills with leaders, sharing the strengths and weakness, save their resources, make collaboration for works, carryout work within time limit, sharing experiences and provides commonality in approach while implementations.

Agriculture sector involves number of players – the universities into education and research, State and Central Government in extension, the ICAR system with core research, the KVKs delivering knowledge at field and the NGOs implementing programs for farmers. ATMA model in India was developed to synergies multiple stakeholders to work together in a complementary fashion. (World Bank, 2012). While it has the potential to set exemplary evidences in Agricultural Innovation Systems context, it still has a long way to go to fulfill the goals(Hall *et.al* 2006). The governments have launched many projects, programmes and schemes for the welfare of farming community. However, restrictions in appointing personnel, work load, limitation in

coordination among staff and agencies and communication have been hampered due to budgetary restrictions among the organizations while executing their activities. Considering the situation, the governments have conceptualized the concept of convergence for ATMA to streamline the development activities in agricultural sector (Sulaiman, 2015).

In context to present study, the collaboration amongst stakeholders assists to understand the relationship between the actors, which helps to develop their appropriate linkages in AIS network. This can be achieved among public and private stakeholders by bringing together for sharing of their knowledge, interactive learning and establishing joint ownership for new innovative work. Thus, stakeholders may proactively work together. There is a wide spectrum of contributors scope in the AIS, therefore the present study needs to be addressed to promote the agricultural sector linkages:

OBJECTIVES

(1) To study the convergence among the stakeholders in Agricultural Innovation System

(2) To study the relationship between stakeholders and their level of convergence in AIS

METHODOLOGY

The present study was conducted in Gujarat state. All seven districts of South Gujarat *viz.,* Navsari, Valsad, Surat, Tapi, Narmada, Bharuch and the Dangs were selected. The AIS has been playing their roles with six types of stakeholders. They are Researchers of university, Extensionist of line Departments, In-charge of agricultural oriented Non-Government Organization, manager of agricultural oriented private agencies, Agro-Service Providers and Progressive farmers. The six types of stakeholder were playing pivotal role in AIS hence their list of each type of stakeholder were obtained from the concerned authorities. The mode of study area of research force to work was vertically as well as horizontally therefore; a simple random sampling method was adopted to obtain respondents sample size. Thus, 30 researchers, 50 extensionist, 30 In-charge of NGOs, 30 managers of private agencies, 50 owner of agro-service providers and 50 progressive farmers were selected. All the 240 stakeholders were randomly selected for present study.

Convergence was operationalized as it is an act of moving toward union or uniformity. Convergence took place between stakeholders as a means to achieve the common objectives and mutual benefits around their target, wherein both may come out with their share values. To measure the convergence among the stakeholders, A structure schedule was developed with 20 statements to know the level of convergence in AIS. The responses of stakeholders about their convergence were recorded on three-point continuum which were agree, undecided and disagree with 3, 2 and 1 score assigned respectively for positive statements while the reverse procedure was followed for negative statements. The maximum score for this variable was 60 and minimum 20 for this study. An arbitrary method was used for categorisation. For that the higher score is subtracted from the lower score and divided by the number of categories. The obtained score is added into the lower score until you get the highest score.

The views of the stakeholders in this regard were collected and classified into three groups such as; (i) poor convergence (up to 33 score), (ii) good convergence (34 to 47 score) and (iii) best convergence (above 48 score).

RESULTS AND DISCUSSION

The data in table 1 displays that majority (70.00%) of the researchers had good level of convergence, followed by 20.00 and 10.00 per cent of them had poor and best level of convergence in AIS respectively. More than half (56.00%) of the extensionists had good level of convergence, followed by 28.00 and 16.00 per cent of them had best and poor level of convergence in AIS respectively. Majority (70.00%) of the In-charge of NGOs had good and 30.00 per cent of them had poor level of convergence in AIS. Whereas, majority (63.33%) of the manager private agencies had good and 36.67 per cent of them had poor level of convergence in AIS. Further, majority (94.00%) of the agro-service providers had poor and only 6.00 per cent of them had good level of convergence in AIS. Furthermore, majority (64.00%) of the progressive farmers had poor and 36.00 per cent of them had good level of convergence in AIS. The pooled data shows that nearly half (47.08 %) of the stakeholders had poor level of convergence, followed by 45.83 and 7.09 per cent of them had good and best level of convergence in AIS respectively.

Thus, from the data it can be concluded that overwhelming majority (92.91%) of the respondents as stakeholders had poor to good level of convergence in AIS. The result inferred that the stakeholders may have poor linkage among them.

Table 1: Distribution of respondents according to their convergence in AIS (n=240)

Sr. No.	Categories	Poor convergence	Good convergence	Best convergence	Total
1	**Researcher** (n=30)	06 (20.00)	21 (70.00)	03 (10.00)	**30 (100.00)**
2	**Extensionists** (n=50)	08 (16.00)	28 (56.00)	14 (28.00)	**50 (100.00)**
3	**NGOs** (n=30)	09 (30.00)	21 (70.00)	00 (00.00)	**30 (100.00)**
4	**Private Agencies** (n=30)	11 (36.67)	19 (63.33)	00 (00.00)	**30 (100.00)**
5	**Agro-service provider** (n=50)	47 (94.00)	03 (06.00)	00 (00.00)	**50 (100.00)**
6	**Progressive farmers** (n=50)	32 (64.00)	18 (36.00)	00 (00.00)	**50 (100.00)**
	Pooled	**113 (47.08)**	**110 (45.83)**	**17 (07.09)**	**240 (100.00)**

(Figures in parentheses indicate percentage to total)

Association between the profile of stakeholders and their level of convergence

In all 20 independent variables of stakeholders were decided as their profile *viz.*, age, education, annual income, landholding, service experience, extension participation, communication ability, information seeking behaviour, self-confidence, innovativeness, mass media exposure, achievement motivation, training received, cohesiveness, stress management, decision making ability, leadership ability, economic orientation, risk orientation and management orientation with convergence among the stakeholders in AIS were worked out with the help of correlation of coefficient and findings are presented in table 02:

Table 2: Association between the profile of stakeholders and their level of convergence (n=240)

Sr. No.	Independent Variables	Researchers	Extensionist	In charge of NGOs	Manger of Pvt. Agency	Agro service providers	Progressive farmers
1	**Age**	0.6810**	0.4191 **	0.8231**	0.7082**	0.4144**	0.2176 NS
2	**Education**	0.0275 NS	-0.048 NS	-0.3236 NS	-0.3799 NS	0.4605**	0.1660 NS
3	**Annual income**	-0.4802 NS	-0.0714 NS	-0.3585 NS	-0.3203 NS	0.5396**	0.0415 NS
4	**Land holding**	0.2619 NS	-0.0135 NS	0.2588 NS	0.2970 NS	0.3896**	0.1561 NS
5	**Service experience**	-0.4673 NS	-0.0554 NS	-0.3292 NS	-0.3005 NS	0.2223 NS	-0.081NS
6	**Extension participation**	-0.2802 NS	0.0437 NS	-0.2849 NS	-0.1710 NS	0.4569**	-0.040 NS
7	**Communication ability**	0.4689 **	0.3065 *	0.2843 NS	0.4302 *	0.3315*	0.0560 NS
8	**Information seeking behavior**	0.4887 **	0.2224 NS	0.4409*	0.4038*	0.3364*	0.0647 NS
9	**Self confidence**	-0.2752 NS	-0.0001 NS	-0.2903 NS	-0.2639 NS	0.1250 NS	-0.028 NS
10	**Innovativeness**	-0.3950 NS	0.0027 NS	-0.2507 NS	-0.1877 NS	0.5130**	0.1252 NS
11	**Training received**	-0.2896 NS	-0.0091 NS	-0.3840 NS	-0.3294 NS	0.2393NS	0.0051 NS
12	**Mass-media exposure**	0.534 **	0.1717 NS	0.4446 *	0.5373**	0.3612**	0.0554 NS
13	**Achievement motivation**	0.2707 NS	0.1800 NS	0.1470 NS	0.1038 NS	0.4024**	0.1121 NS
14	**Cohesiveness**	0.7023**	0.2022 NS	0.4493*	0.5699 **	0.4332**	0.1806 NS
15	**Stress management**	0.7841 **	0.4538**	0.8091**	0.7222 **	0.2685NS	0.1057 NS
16	**Decision making ability**	0.2791 NS	0.1681 NS	0.0908 NS	0.1554 NS	0.2528NS	0.1404 NS
17	**Leadership ability**	-0.2831 NS	-0.0012 NS	-0.2806 NS	-0.2531 NS	0.2478NS	-0.097 NS
18	**Economic orientation**	0.3279 NS	0.1398 NS	0.1254 NS	0.1197 NS	0.2539NS	0.1764 NS
19	**Risk orientation**	0.2434 NS	0.1919 NS	0.1133 NS	0.2188NS	0.3879**	0.0149 NS
20	**Management orientation**	0.7469 **	0.4500**	0.7013 **	0.6134**	0.0644 NS	0.1326 NS

(* Significant at 0.05 level, ** Significant at 0.01 level, NS Non-significant)

The data in table 2 reveals that the age (0.6810**), communication ability (0.4689**), information seeking behaviour (0.4887**), mass media exposure (0.534**), Cohesiveness (0.7023**), stress management (0.7841**) and

management orientation (0.7469**) had highly significant correlation with convergence among researchers in AIS at 1% level.

The education (0.0275), land holding (0.2619), achievement motivation (0.2707), decision making ability (0.2791), economic orientation (0.3279) and risk orientation had positive and non-significant correlation with convergence of researchers in AIS. Whereas, annual income (-0.4802), service experience (-0.4673), extension participation (-0.2802), self-confidence (-0.2752), innovativeness (-0.3950), training received (-0.2896) and leadership ability (-0.2831) had negative and non-significant correlation with convergence among researchers in AIS.

The data reveals that the age (0.4191**), stress management (0.4538**) and management orientation (0.4500**) had highly significant correlation with convergence among extensionists in AIS at 1% level. While, communication ability (0.3065*) were significantly corelated with convergence among extensionists at 5 % level.

The education (-0.048), annual income (-0.0714), land holding (-0.0135), service experience (-0.0554), self-confidence (-0.0001), training received (-0.0091) and leadership ability (-0.0012) had negative and non-significant correlation with convergence among extensionists in AIS. Whereas, extension participation (0.0437), information seeking behavior (0.2224), innovativeness (0.0027), mass media exposure (0.1717), achievement motivation (0.1800), cohesiveness (0.2022), decision making ability (0.1681), economic orientation (0.1398) and risk orientation (0.1919) had positive and non-significant correlation with convergence among extensionists in AIS.

The data reveals that the age (0.8231**), stress management (0.8091**) and management orientation (0.7013**) had highly significant correlation with convergence among in charge of NGOs in AIS at 1% level. While, information seeking behavior (0.4409*), mass media exposure (0.4446*) and cohesiveness (0.4493*) were significantly corelated with convergence among in charge of NGOs at 5 % level.

The education (-0.3236), annual income (-0.3585), service experience (-0.3292), extension participation (-0.2849), self-confidence (-0.2903), innovativeness (-0.2507), training received (-0.3840) and leadership ability (-0.2806) had negative and non-significant correlation with convergence among in charge of NGOs in AIS. Whereas, land holding (0.2588), communication ability (0.2843), achievement motivation (0.1470), decision making ability (0.0908), economic orientation (0.1254) and risk orientation (0.1133) had positive and non-significant correlation with

convergence among in charge of NGOs in AIS.

The data shows that the age (0.7082**), mass media exposure (0.5373**), cohesiveness (00.5699**), stress management (0.7222**) and management orientation (0.6134**) had highly significant correlation with convergence among in manager of private agency in AIS at 1% level. While, communication ability (0.4302*) and information seeking behavior (0.4038*) were significantly corelated with convergence among manager of private agency at 5 % level.

The education (-0.3799), annual income (-0.3203), service experience (-0.3005), extension participation (-0.1710), self-confidence (-0.2639), innovativeness (-0.1877), training received (-0.3294) and leadership ability (-0.2531) had negative and non-significant correlation with convergence among manager of private agency in AIS. Whereas, land holding (0.2970), achievement motivation (0.1038), decision making ability (0.1554), economic orientation (0.1197) and risk orientation (0.2188) had positive and non-significant correlation with convergence among manager of private agency in AIS.

The data reveals that the age (0.4144**), education (0.4605**), annual income (0.5396**), land holding (0.3896**), extension participation (0.4569**), innovativeness (0.5130**), mass media exposure (0.3612**), achievement motivation (0.4024**) cohesiveness (0.4332**) and risk orientation (0.3879**) had highly significant correlation with convergence among agro service providers in AIS at 1% level. While, communication ability (0.3315*) and information seeking behavior (0.3364*) had significantly corelated with convergence among agro service providers at 5 % level. While, service experience (0.2223), self-confidence (0.1250), training received (0.2393), stress management (0.2685), decision making ability (0.2528), leadership ability (0.2478), economic orientation (0.2539) and management orientation (0.0644) had positive and non-significant correlation with convergence among agro service providers in AIS.

The data also discloses that the age (0.2176), education (0.1660), annual income (0.0415), land holding (0.1561), communication ability (0.0560), information seeking behaviour (0.0647), innovativeness (0.1252), training received (0.0051), mass media exposure (0.0554), achievement motivation (0.1121), cohesiveness (0.1806), stress management (0.1057), decision making ability (0.1404), economic orientation (0.1764), risk orientation (0.0149) and management orientation (0.1326) had positive and non-significant correlation with convergence among progressive farmers in AIS. Whereas, service experience (-0.081), extension participation (-0.040), self-confidence

(-0.028) and leadership ability (-0.097) had negative and non-significant correlation with convergence among progressive farmers in AIS.

These findings have been supported by findings of Gardharia (2013), Mistry *et.al* (2016), Modirwa *et. al* (2017) and Patel, D. J. and Pandya, R. D. (2016).

CONCLUSION

It can be concluded that overwhelming majority of the respondents as stakeholders had poor to good level of convergence in AIS. The results showed that the stakeholders may have poor linkage among them. Thus, the main focus of AIS is strengthening the skills and attitudes of the stakeholders to enable innovation, nurture an institutional environment which is supportive to the flow of knowledge, as well as create policies and practices that determine how well these interactions work. Thus, the innovation systems approach not only focusses on the relevant stakeholders in a system but also their network to understand the flow of information among them. The concept of innovation has changed in recent times from a research-driven process to an interactive process with a much broader range of activities, actors, practices, policies and context.

The data also reveals that the age, communication ability, information seeking behaviour, mass media exposure, cohesiveness, stress management and management orientation had highly significant correlation with convergence among researchers in AIS. The data tells that the age, stress management and management orientation had highly significant correlation with convergence among extensionists in AIS. While, communication ability was significantly corelated with convergence among extensionists. The data reveals that the age, stress management and management orientation had highly significant correlation with convergence among in charge of NGOs in AIS. While, information seeking behavior, mass media exposure and cohesiveness were significantly corelated with convergence among in charge of NGOs. The data shows that the age, mass media exposure, cohesiveness, stress management and management orientation had highly significant correlation with convergence among manager of private agency in AIS. While, communication ability and information seeking behavior were significantly corelated with convergence among manager of private agency.

The data reveals that the age, education, annual income, land holding, extension participation, innovativeness, mass media exposure, achievement motivation, cohesiveness and risk orientation had highly significant correlation with convergence among agro service providers in AIS. While, communication ability and information seeking behavior had significantly corelated with convergence among agro service providers in AIS.

CONFLCT OF INTEREST

The authors of the paper declare no conflict of interest.

REFERENCES

Gardharia, K. V. (2013). Strategic analysis of farm school working under ATMA in south Gujarat. Thesis M. Sc. (Agri.), Navsari Agricultural University, Navsari.

Hall, A.; Mytelka, L. and Oyeyinka, B. (2006). Agricultural Innovation Systems: A methodology for diagnostic assessments. In: Enhancing agricultural innovation: How to go beyond the strengthening of research systems, World Bank, Washington DC.

Mistry, J. J.; Patel, D. B. and Patel, V. V. (2016). Knowledge level of recommended green gram cultivation technology of tribal FLD farmers. *Guj. J. Ext. Edu.*, 27 (1): 53-55.

Modirwa, M. S. and Oladele, O. I. (2017). Knowledge and attitude towards collaboration in agricultural innovation systems amongst stakeholders in the north west province, south africa. *S. Afr. J. Agric. Ext.,* 45 (1): 10 – 19.

Pandya, R. D.; Pathak, A. B. and Bhatt, M. R. (2007). Privatization in agriculture: Feasibility of privatization in extension services. pp. 32-33.

Patel, D. J. (2017). Strategic convergence between the KVK and ATMA in Gujarat. Thesis   M. Sc. (Agri.), Navsari Agricultural University, Navsari.

Patel, D. J. and Pandya, R. D. (2016). Characteristic of personnel involved in convergence. *Guj. J. Extn. Edu.*, 23 (2): 182-184.

Saravanan, R. and Suchiradipta, B. 2017. Agricultural Innovation Systems: Fostering Convergence for Extension. MANAGE Bulletin 2 (2017), National Institute of Agricultural Extension Management, Hyderabad, India.

Sulaiman, R.V. (2015). Agricultural Innovation Systems. Note 13., GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland.

World Bank. (2012). Agricultural Innovation Systems: An Investment Sourcebook. Washington DC, World Bank. Retrieved from http://siteresources. worldbank.org/INTARD Resources/ 3358071330620 0492317/9780821386842.pdf.