

PATH ANALYSIS SHOWING THE EFFECTS OF THE PROFILE OF ATMA BENEFICIARY FARMERS AND THEIR PERCEIVED EFFECTIVENESS OF ATMA

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ABSTRACT

The present investigation was carried out in the four talukas of Ahmedabad district, where the maximum number of FIG is functioning under ATMA. Five villages were randomly selected from each taluka. Thus the sample consisted of 200 respondents for the study from twenty villages. The ex-post facto research design was used for the research study. An effect that occurs among the ATMA beneficiary farmers as a result of effective implementation of ATMA activities. Scientific orientation, cosmopolites and market orientation of the ATMA beneficiary farmers were the key variables in exerting a considerable direct, indirect and substantial effect on the perceived effectiveness of ATMA.

Keywords: path analysis, ATMA beneficiary, perceived effectiveness of ATMA

INTRODUCTION

The mainstay of the Indian economy is agriculture with a focus on sustainable agricultural production and productivity, although it is called a developing country. The basic demerits gained in facing the challenges like population overgrowth, overutilization of resources and unsustainability in GDP (Gross Domestic Production) (Maheta and Gorfad, 2020). Also, the provision and financing of agricultural extension through the public sector have been questioned globally (Vinaya *et al.*, 2017). This has come about due to the inherent difficulties of providing agricultural extension through the public sector as the scale and complexity of agricultural production depends on the broader policy environment, weak linkages between the extension and research systems, difficulty in attributing impact, weak accountability, weak political commitment and support, public duties other than knowledge transfer and the challenge of fiscal sustainability. Reforms to address these problems are considered innovative in their move away from the top-down methods of public funding and provision of extension services, with its linear process from research to the extension to farmers. These reforms include aspects of decentralization, privatization, participatory services, and public-private partnerships resulting in pluralistic extension services in many countries that involve the public, private, and civil sectors. Even these pluralistic extension services, however, recognize the value of continued involvement of the public sector in roles such as public policy, coordination, regulation of services for quality control focus on public-good issues and pro-poor services. Despite extension being a

state-level concern, many reforms have come from the central government in several different projects. One such project is the Support to State Extension Programs for Extension Reform (SSEPER), which functions at the district level through the Agricultural Technology Management Agency (ATMA).

ATMA is a registered society at the district level. The district extension activities are developed based on a Strategic Research and Extension Plan (SREP) prepared by using the Participatory Rural Appraisal (PRA) technique for each district. The ATMA Governing Board (GB), chaired by the district magistrate /collector, reviews and approves the SREP for the district and the annual Block Action Plan (BAP). Other members of the board include the heads of line departments and research organizations as well as stakeholder representatives, including farmers and private sector representatives. The ATMA Project Director (PD) chairs the ATMA Management Committee (AMC). The AMC is responsible for coordinating the extension activities in the district. The AMC includes the heads of all line departments and research organizations in the district. Comprehensive knowledge about lacuna in effective and efficient implementation of ATMA and important determinants of ATMA effectiveness will find the unfavorable factors in the environment of extension pose for generating additional pressure.

OBJECTIVE

To study on path analysis showing the effects of the profile of ATMA beneficiary farmers and their perceived effectiveness of ATMA

METHODOLOGY

The present investigation was carried out in the four talukas of Ahmedabad district, where the maximum number of FIG’s functioning under ATMA. Five villages were randomly selected from each taluka. Thus the sample consisted of 200 respondents for the study from twenty villages. The action of an individual farmer is governed by socio-personal, economic, communicational and psychological factors involved in the situation. The independent variables undertaken in this study were: age, education, landholding, occupation, annual income, social participation, farming experience, irrigation facilities, cropping intensity, extension participation, exposure with other development agencies, mass media exposure, scientific orientation, risk preferences, cosmopolites, market orientation, achievement motivation and innovativeness. The dependent variable chosen for the study was the perceived effectiveness of ATMA. The data was collected through personal interviews using a structured interview schedule. “Ex-post Facto” research design was used for this study. The collected data were classified, tabulated, analyzed and interpreted to make the finding meaningful. The

statistical methods and tests such as frequency, percentage, mean, standard deviation, coefficient of correlation, multiple regressions, and path analysis were used for the analysis of data.

RESULTS AND DISCUSSION

Path analysis showing the effects of the profile of ATMA beneficiary farmers and their perceived effectiveness of ATMA

The coefficient of correlation of the data presented earlier illustrated the relationship between independent and dependent variables in presence of all other variables, which are normally operative in a real-life situation. The relationship exhibited by correlation study may change different situations, where some of the independent variables may not exist in the environment or they may be concealed. To know the influence of independent variables both directly, as well as, through other variables, the correlation coefficient values indicated earlier were attempted for path analysis.

Table 1: Path analysis showing the effects of the profile of ATMA beneficiary farmers and their perceived effectiveness of ATMA (n=200)

Sr. No.	Variables	Direct effect	Total indirect effect	The substantial indirect effect through	
				1	2
X ₁	Age	0.0300	0.1580	0.0173 (X7)	0.0073 (X13)
X ₂	Education	0.0891	0.1469	0.0412 (X15)	0.0371 (X11)
X ₃	Land holding	0.0430	0.1050	0.0217 (X5)	0.0142 (X11)
X ₄	Occupation	0.0041	-0.0401	-0.0005 (X6)	-0.0005 (X18)
X ₅	Annual income	-0.0647	0.2257	-0.0327 (X3)	-0.0203 (X8)
X ₆	Social participation	0.1942	0.1458	0.0530 (X10)	0.0513 (X12)
X ₇	Farming experience	0.0609	0.2091	0.0353 (X1)	0.0175 (X10)
X ₈	Irrigation facilities	0.0495	0.1315	0.0209 (X9)	0.0155 (X5)
X ₉	Cropping intensity	-0.0480	0.1570	-0.0202 (X8)	-0.0102 (X7)
X ₁₀	Extension participation	0.1299	0.3161	0.0760 (X11)	0.0717 (X15)
X ₁₁	Exposure with other development agency	0.1055	0.2275	0.0654 (X15)	0.0617 (X10)
X ₁₂	Mass media exposure	-0.0393	0.2883	-0.0205 (X11)	-0.0162 (X2)
X ₁₃	Scientific orientation	0.2458	0.2282	0.1321 (X14)	0.1267 (X17)
X ₁₄	Risk preferences	0.0171	0.3259	0.0092 (X13)	0.0080 (X17)
X ₁₅	Cosmo politeness	0.0028	0.3802	0.0017 (X11)	0.0015 (X10)
X ₁₆	Market orientation	0.2401	0.1329	0.1341 (X17)	0.1110 (X18)
X ₁₇	Achievement motivation	-0.0738	0.3258	-0.0412 (X16)	-0.0380 (X13)
X ₁₈	Innovativeness	0.1080	0.2460	0.0517 (X17)	0.0499 (X16)

All the eighteen variables were subjected to path analysis. The data thus, indicate that the observed relationship between the variables was only partially absolute and partially relative. Partially relationship was a contribution made by other variables exercising their influence jointly.

It is, therefore, necessary to study the influence of one variable on another variable both directly as well as through other variables presented in the situation. The result of path analysis is presented in Table 1.

Direct effect

The data in Table 1 and fig.1 revealed that scientific orientation had exerted maximum direct positive effect (0.2458) through risk preferences (0.1321) and achievement motivation (0.1267) followed by market orientation (0.2401) through achievement motivation (0.1341) and innovativeness (0.1110), social participation (0.1942) through extension participation (0.0530) and mass media exposure (0.0513), extension participation (0.1299) through exposure with other development agencies (0.0760) and cosmopolitaness (0.0717), innovativeness (0.1080) through achievement motivation (0.0517) and market orientation (0.0499), exposure with other development agencies (0.1055) through cosmopolitaness (0.0654) and extension participation (0.0617), education (0.0891) through cosmopolitaness (0.0412) and exposure with other development agencies (0.0371), farming experience (0.0609) through age (0.0353) and extension participation (0.0175), irrigation facility (0.0495) through cropping intensity (0.0209) and annual income (0.0155), land holding (0.0430) through annual income (0.0217) and exposure with other development agencies (0.0142), age (0.0300) through farming experience (0.0173) and scientific orientation (0.0073), risk preferences (0.0171) through scientific orientation (0.0092) and achievement motivation (0.0080), occupation (0.0041) through social participation (-0.0005) and innovativeness (-0.0005), cosmopolitaness (0.0028) through exposure with other development agencies (0.0017) and extension participation (0.0015).

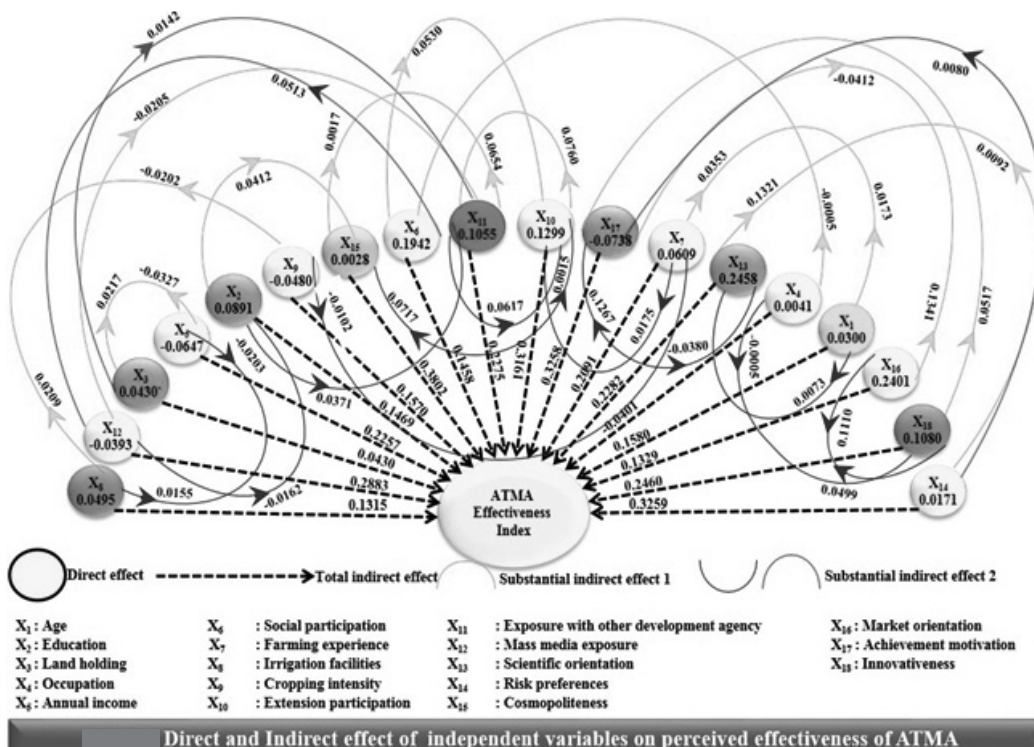
As far as negative direct effect is concerned

achievement motivation (-0.0738) had exerted maximum direct negative effect followed by annual income (-0.0647), cropping intensity (-0.0480), mass media exposure (-0.0393) exerted a negative direct effect on the effectiveness of ATMA.

It can be inferred that major variables contributing the maximum direct positive effect on the effectiveness of ATMA were scientific orientation, market orientation, social participation, extension participation, innovativeness and exposure with other development agencies in descending order, while achievement motivation, annual income, cropping intensity and mass media exposure contributing negative direct effect in descending order on the effectiveness of ATMA.

Total indirect effect

So far, the total indirect effect is concerned, seventeen variables had a positive total indirect effect on the effectiveness of ATMA. Further, it can be observed that cosmopolites had maximum total indirect effect (0.3802) followed by risk preference (0.3259), achievement motivation (0.3258), extension participation (0.3161), mass media exposure (0.2883), innovativeness (0.2460), scientific orientation (0.2282), exposure with other development agency (0.2275), annual income (0.2257), farming experience (0.2091), age (0.1580), cropping intensity (0.1570), education (0.1469), social participation (0.1458), market orientation (0.1329), irrigation facilities (0.1315) and landholding (0.1050). Only one variable viz. occupation (-0.0401) had a negative total indirect effect on the effectiveness of ATMA.



Substantial indirect effect

Data further revealed that out of 36 substantial indirect effects, five each routed through exposure with other development agencies, four each routed through extension participation and achievement motivation. three each routed through scientific orientation and cosmopolites, two each routed through annual income, farming experience, irrigation facilities, market orientation and innovativeness and one each through age, education, landholding, social participation, cropping intensity, mass media exposure and risk preferences.

With regards to the substantial indirect effect, the first substantial negative indirect effect on the effectiveness of ATMA was put forth by achievement motivation (-0.0412) through market orientation followed by achievement motivation (-0.0380) through scientific orientation, annual income (-0.0327) through land holding, However, first substantial positive indirect effect on the effectiveness of ATMA was put forth by market orientation (0.1341) of ATMA beneficiary farmers through achievement motivation recognitions received.

CONCLUSION

It could be concluded that scientific orientation, cosmopolites and market orientation of the ATMA beneficiary farmers were the key variables in exerting considerable direct, indirect and substantial effect on the perceived effectiveness of ATMA.

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