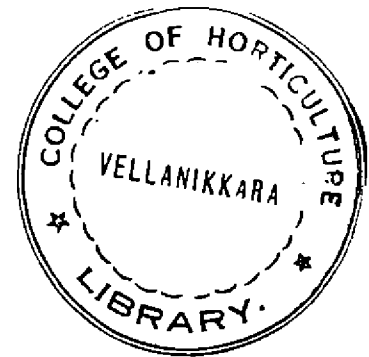


**IMPACT OF FARM BROADCAST ON THE
ADOPTION OF AGRICULTURAL INNOVATIONS
BY THE FARMERS OF NUWAKOT DISTRICT OF NEPAL**

BY
NARAYAN PRASAD KHANAL



THESIS
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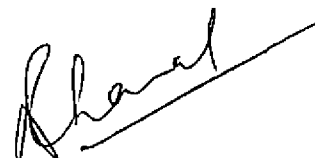
1986

D E C L A R A T I O N

I here by declare that this thesis entitled "Impact of Farm Broadcast on the adoption of agricultural innovations by the Farmers of Nuwakot District of Nepal" is a bonafied record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title of any other University or society.

Vellayani

Date: 15/2/86



NARAYAN PRASAD KHIMAL

C E R T I F I C A T E

Certified that this thesis entitled
"Impact of Farm Broadcast on the adoption of agricult-
ural innovations by the Farmers of Nuwakot District
of Nepal" is a record of research work done independently
by Sri. NARAYAN PRASAD KHANAL under my guidance and that
it has not previously formed the basis for the award of
any degree, fellowship or associateship to him.



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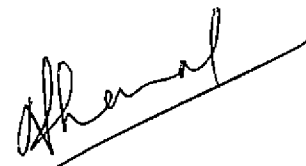
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(Narayan Prasad Khanal)

CONTENTS

<u>CHAPTER NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
I	INTRODUCTION	1
II	THEORETICAL ORIENTATION	6
III	METHODOLOGY	43
IV	RESULTS	68
V	DISCUSSION	131
VI	SUMMARY	150
	REFERENCES	i - xv
	APPENDICES	I - V
	ABSTRACT	

LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
1.	Distribution and size of sample from four sub-centres.	45
2.	Distribution of listeners and non-listeners according to their level of knowledge in agriculture.	69
3.	Comparison of listeners and non-listeners according to their mean knowledge scores.	70
4.	Distribution of listeners and non-listeners according to their attitude towards farm broadcasts.	71
5.	Comparison of listeners and non-listeners according to their mean attitude scores.	72
6.	Distribution of listeners and non-listeners according to their extent of adoption of recommended agricultural practices.	73
7.	Comparison of listeners and non-listeners according to their mean extent of adoption scores.	74
8.	Distribution of listeners and non-listeners according to their age groups	75

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
9.	Comparison of listeners and non-listeners according to their mean age scores.	76
10.	Distribution of listeners and non-listeners according to their educational level.	77
11.	Comparison of listeners and non-listeners according to their mean education scores.	78
12.	Distribution of listeners and non-listeners according to their farm size.	79
13.	Comparison of listeners and non-listeners according to their mean farm size scores.	80
14.	Distribution of listeners and non-listeners according to their sub-centre contact.	81
15.	Comparison of listeners and non-listeners according to their mean sub-centre contact scores.	82
16.	Distribution of listeners and non-listeners according to their level of scientific orientation.	83
17.	Comparison of listeners and non-listeners according to their mean scientific orientation scores.	84

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
18.	Distribution of listeners and non-listeners according to their level of innovation proneness.	85
19.	Comparison of listeners and non-listeners according to their mean innovation proneness scores.	86
20.	Distribution of listeners and non-listeners according to social participation.	87
21.	Comparison of listeners and non-listeners according to their mean social participation scores.	88
22.	Inter correlation matrix of dependent variables of listeners (RO & RA) and non-listeners.	89
23.	Correlation between knowledge and independent variables and intervening variable of listeners (RO & RA) and non-listeners.	90
24.	Correlation between attitude and independent variables and intervening variable of listeners (RO & RA) and non-listeners.	92

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
25.	Correlation between extent of adoption and independent variables and intervening variable of listeners (RO & RA) and non-listeners.	94
26.	Relationship amongst independent and intervening variables of listeners (RO).	96
27.	Relationship amongst independent and intervening variables of listeners (RA).	99
28.	Relationship amongst the independent variables of non-listeners (NRO).	102
29.	Direct and indirect effects of independent variables on knowledge of listeners (RO).	105
30.	Direct and indirect effects of independent variables on attitude of listeners(RO).	107
31.	Direct and indirect effects of independent variables on extent of adoption of listeners (RO)	109
32.	Direct and indirect effects of independent variables on knowledge of listeners (RA).	112

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
33.	Direct and indirect effects of independent variables on attitude of listeners (RA).	115
34.	Direct and indirect effects of independent variables on extent of adoption of listeners (RA)	117
35.	Direct and indirect effects of independent variables on knowledge of non-listeners	120
36.	Direct and indirect effects of independent variables on attitude of non-listeners.	122
37.	Direct and indirect effects of independent variables on extent of adoption of non-listeners.	124
38.	Listening behaviour of radio owners and radio accessors compared.	127.

LIST OF ILLUSTRATIONS

<u>Figure No.</u>	<u>Titel</u>	<u>Between pages</u>
1.	Theoretical framework of impact of farm broadcast on the adoption of agricultural innovations by the farmers.	41 - 42
2.	Map showing the location of the study in Nepal.	43 - 44
3.	Comparison of knowledge, attitude and extent of adoption of the listeners (RO & RA) and non-listeners of farm broadcast.	73 - 74
4.	Path analysis and correlation studies on knowledge of listeners (RO).	106 -107
5.	Path analysis and correlation studies on attitude of listeners (RO).	107 -108
6.	Path analysis and correlation studies on extent of adoption of listeners (RO)	111 -112
7.	Path analysis and correlation studies on knowledge of listeners (RA).	113 -114
8.	Path analysis and correlation studies on attitude of listeners (RA).	115 -116
9.	Path analysis and correlation studies on extent of adoption of listeners (RA).	118 -119

<u>Figure No.</u>	<u>Title</u>	<u>Between pages</u>
10.	Path analysis and correlation studies on knowledge of non-listeners.	120 - 121
11.	Path analysis and correlation studies on attitude of non-listeners.	122 - 123
12.	Path analysis and correlation studies on extent of adoption of non-listeners.	125 - 126

A B B R E V I A T I O N S

R O	-- Radio Owner
R A	-- Radio accessor
NRO	-- Non-Radio Owner
A I S	-- Agriculture Information Section
H M G	-- His Majesty Government
J T	-- Junior Technician
J T A	-- Junior Technical Assistant
N S	-- Not significant
S D	-- Standard Deviation
Rop.	-- Ropani
Fig.	-- Figure

INTRODUCTION

Chapter I

INTRODUCTION

All developing countries have now instituted one or the other kind of radio broadcasting system. The Radio farm forums was first launched in Canada in 1939 (FAO-1984). The era of farm broadcasting as a means of solving many development problems started in India in 1959 when the largest and most thoroughly researched media forum programme was launched as a result of a UNESCO- sponsored investigation directed by Dr. Paul Neurath (Rogers 1969). In the 1950_s and 1960_s, the broadcasting medium was accepted in the Third world as a potent instrument for development.

It was about this time that Radio Nepal came into being symbolising the prevailing Nepalese mood for democracy, development and modernization. It was operated by the Government through its department of broadcasting. Farm broadcast programme, as such, was also introduced in 1955 but the idea was to introduce a new programme relating to the farmers.

During 1960_s, many innovative changes occurred globally in the field of mass communication. Certain significant — changes occurred in Nepal as well. In 1966, establishment of Agriculture Information Service (AIS) within the department of

agriculture took place with the idea of producing farm broadcast programmes in order to modernize farming system in Nepal. In December 1966, AIS took over the responsibility of planning and producing of farm broadcast programmes from Radio Nepal.

This department of agriculture among other departments of His Majesty's Government play the vital role in the diffusion of modern agricultural practices and knowledge through its net work of JF_s and JTA_s as well as through its Agriculture Information section. This section runs its own studio and has its own staff broadcasters and journalists to plan, prepare and produce farm broadcast programmes in four formats, vide appendix II.

At present, excepting the channel and the air time farm broadcasting is under the complete control of AIS. The Broadcasting Department of the Ministry of Communication of HMG has nothing to do with the farm broadcasting programme management. Barring the problems of mechanical noise and quality of reception the Department of Broadcasting in Nepal cannot be held responsible for the quality of farm broadcast communication.

Farm broadcasting in Nepal has many problems. During the last twenty years of AIS farm broadcasting a lot

of messages on farm modernization has been disseminated through Radio Nepal. But there has hardly been any serious study of the impact of these messages on the Nepalese farmers. Impact study of farm broadcast can be analysed only by the listener's record. All the same this study "Impact of Farm Broadcasts on the adoption of Agricultural innovation by the Farmers of Nuwakot District of Nepal" was selected to study the impact of messages broadcasted with the following objectives.

- (i) To assess the level of knowledge of the radio listening farmers in agriculture.
- (ii) To study the attitude of the farmer listeners towards farm broadcasts.
- (iii) To measure the extent of adoption on recommendations given through farm broadcasts.
- (iv) To analyse the listening behaviour of the farmers in respect to their personal characteristics.

Need for the study

Ninety five percent of the Nepalese population live in more than 28,000 rural villages and 93 percent of the population have adopted agriculture as the chief

occupation. The audience of Nepalese farm broadcasting is comprised of almost the whole of the Nepalese population of which the majority live in the Hills and the mountainous regions (approximately 66 percent). Because of above reason and undulating topography it became a need to select a district of mountaineous region for this study.

~~During the last 20 years of~~

Scope of the study

This study can provide necessary and useful information to extension workers, communication specialists and the planners and producers of the farm broadcasts how far the radio is educative and useful medium and how it is being utilized by farming communities of Nepal. This study will also throw light on the important personal and situational factors influencing the listening and adoption behaviour of the farmers of hilly regions of Nepal.

Limitations of the study

This study was limited to only four subcentres out of nine sub-centres of Nuwakot District of Nepal. Only 150 respondents could be interviewed out of 16957 population of the four sub-centres, due to the undulating topography, extremely broken terrain and other limited facility available. This study also had its limitation pertaining

to singleness of the radio with that of other media in communicating to farming community. More or less a combination of media is also likely to influence on adoption of the improved practices contained in the broadcasts.

THEORETICAL ORIENTATION

Chapter - II

THEORETICAL ORIENTATION

This chapter is included to provide the theoretical base for this empirical study on a conceptual framework. It will lead to identification and selection of relevant variables for the study. The relevant literatures reviewed is presented under the following sections.

I FARM BROADCASTING

II DEPENDENT VARIABLES

III INDEPENDENT VARIABLES

IV INTERVENING VARIABLE

V THEORETICAL CONCEPTS AND OPERATIONAL DEFINITIONS
OF THE SELECTED VARIABLES

I FARM BROADCASTING:-

Radio:- According to Chamber's Dictionary (1976) 'Radio' means a wireless receiving set.

Philip (1984) stated that radio as an educational tool had several advantages viz. low cost, immediate appeal and better combination with other instructional modes.

Rai (1984) described radio as the generally available media in the third world with less elite-bias though quite unequally distributed across the social strata.

Farm Broadcasting:

Hybels and ulloth (1978) reported that broadcasting was originally a farming term that meant spreading seeds all over the field. In radio and television broadcasting means sending a programme through the air to every one within a reach of station. Any one who has the necessary equipment can listen to the programme sent out.

According to Encyclopedia Britanica (1974) radio broadcasting is radio transmission intended for general public reception. It is described as the systematic diffusion of entertainment information, education and other features individually or in groups with appropriate receiving apparatus.

Nehru (1980) reported that farm broadcasting means sending out programmes related mainly to agriculture and its allied branches of activities.

II DEPENDENT VARIABLES

Knowledge

Bhaskaran and Mahajan (1968) reported that young and middle aged farmers were slightly superior to the old

age group in retention of knowledge about the extension methods. Singh and Prasad (1974) also reported that age had no significant relationship with the knowledge quotient of communication sources of young farmers. Behera and Sahoo (1975) reported that young farmers had better knowledge and information about National Demonstration than other farmers. Kaleel (1978), while studying the impact of Intensive Paddy Development unit in Kerala, found that age had no significant relationship with the knowledge gained by farmers about the subject matter.

Bhaskaran and Mahajan (1968) found that education of farmers in general had a close positive relationship with the response to extension teaching both in respect of retention of knowledge and acceptance of the practice. Supe and Salode (1975) reported that formal education was significantly related to the level of knowledge of farmers on the demonstrated cultivation practices. Behera and Sahoo (1975) reported that educated farmers had better knowledge and information than other farmers about the National Demonstration. Kaleel (1978) found that education was positively and significantly related to the gain in knowledge of the farmers of the experimental area.

supe and Salode (1975) reported that farm size was not related to the level of knowledge of farmers on the selected improved agricultural practices.

Copp, Neal and Gross (1969) reported that participation of farmers in formal organizations improved the possibilities of increased social interaction which inturn helped in increasing the level of knowledge about the new farm practices by the farmers. Singh and Prasad (1974) reported that social participation was positively related to the knowledge of communication sources of young farmers. Kaleel (1978) found a positive and significant relationship between social participation and gain in knowledge of farmers of the Intensive paddy Development Unit area.

Dhanokar (1970) reported that scientific attitude helped the farmers in understanding the details of practices. supe and Salode (1975) reported that scientifically oriented participant farmers had higher knowledge on the demonstrated practices.

shete (1978) on studying the tribal farmers reported the subject matter areas of interest are high yielding varieties, plant protection techniques, and use of fertilizer in the order mentioned.

Chandrakandan (1982) found farmer listeners have gained knowledge considerably in all areas of subject matter, still they felt difficult in case of names of chemicals, varieties, and practices with economic viability. Practical feasibility and easiness were understood.

Tampi, (1979) studied the influence of radio listening on the knowledge and adoption of farm practices. He found exposure to radio broadcasts resulted in medium level of understanding and knowledge in majority of the rural radio forum convenors.

Chandrakandan (1980) reported that the exposure to radio broadcast resulted in significant gain in knowledge. Ninety percent of farmers had medium or low level of knowledge with a mean score of 9.97 out of maximum possible 25, in the pre-broadcast phase. While 75% of the farmers had medium or high level of knowledge in the post-broadcast phase with a mean of 16.03 out of 25.

Chandrakandan (1982) revealed that 28% of the listeners farmers could acquire skills completely and 50% partially and 22% could not acquire any thing. Hence simple skills can be very well taught through radio.

Sharma and Dey (1970) observed that the extent of retention of knowledge after fifteen and thirteen days of broadcast was 16% and 10.88% respectively, among rural radio forum members.

Chandrakandan (1982) found that two third of information was retained by the farmers listeners after 30 days of broadcast.

Subramoniyam (1975) found age and education influenced retention. But Doraiswamy (1977) found no correlation. Chandrakandan (1982) found that young farmers could retain more and significantly higher than middle aged and old. But middle aged and old listeners did not differ significantly between them. Pandey and Roy (1978) reported that discussion mode has resulted better retention.

Chandrakandan (1982) found all the four modes of delivery the farm broadcast namely discussion, question answer, interview and farm news were effective in communicating the technology but with considerable difference in their effectiveness. He also reported that age, education, farm size, urban contact and attitude of farmer listeners have significant influence on their retention of knowledge.

Somasundaram and Singh (1978) reported that the only variable associated with knowledge gain was marked.

Sreepal (1978) established a positive relationship between knowledge gain and education, mass media exposure and value orientation.

Somasundaram and Singh (1978) found age, education, urban contact, extension contact, economic motivation, attitude towards HYV and scientific orientation as significantly correlated with knowledge gain in case of adopters.

Selvanayagam (1980) found that young farmers gained more knowledge than mid-adult and late-adult groups. He also reported that farmers studied upto secondary level gained more information than those having only primary education.

Selvaraj (1981) stated that only with education and value orientation a significant difference was noticed with respect to knowledge gain and retention.

Misra and Sinha (1981) concluded that formal education of farmers in general was important for knowledge gain.

Sekhar (1982) in a study of farm broadcast listening behaviour of extension personnel found 75% of them had medium awareness of the programmes. The 13% had low and 12% high level of awareness. Education and experience were found to have positive and significant correlation and age had negative correlation. Chandrakandan (1980) also reported that age, social participation, farm size, radio listening behaviour, urban contact, extension contact, secular orientation and attitude had significant influenced on knowledge gain of farmer listeners.

sekhar (1982) found education, experience and training significantly influenced the knowledge gain of farm broadcast listeners who were extension personnel of the state department.

Chandrakandan (1982) reported that significant increase in knowledge was resulted due to exposure to skill communication. 72.2% of the listeners could gain adequate knowledge relating to skill, hence radio could be considered as an effective media for disseminating knowledge dimension regarding skill practice.

Philip (1984) reported that knowledge had significant relationship with farm size and listening behaviour.

Attitude

Bose (1961) reported that people become better integrated and some what more extrem in their attitude as they grow older. Singh and Singh (1968) found younger farmers have significantly favourable attitude towards fertilizers than the older farmers. Das and Sarkar (1970) reported that there was no significant relationship between age and attitude of people towards improved farm practices.

Das and Sarkar (1970) also reported that education was significantly related with farmer's attitude towards the improved farming practices. While studying the differential attitude of farmers Singh and Singh (1971) reported level of education was positively and significantly related to the attitude of the farmers towards the chemical fertilizers, improved implements and green manuring.

Das and Sarkar (1970) while studying the economic motivation and adoption of farming practices, reported that social participation of farmers was significantly correlated with the attitude of farmers towards improved agricultural practices.

Rajendran (1982) found all the listeners of community radio sets had high level of favourable attitude towards the radio listening. Chandrakandan (1982) found attitude of listeners had a profound influence on their knowledge gain, retention of knowledge and symbolic adoption.

Vellaichamy (1979) ranked radio as the their credible source for marginal farmers. Kuthiala (1980) complained that radio could not function as an effective change agent. The information input provided by it was inadequate. It was rather a status symbol in rural areas. Chandrakandan (1980) placed radio as the most important source of information, followed by letters from communication personnel and friends, neighbours and relatives. As a source of motivation radio was ranked first by 69% farmers and friends-neighbours-relatives by 25%. Escalada (1981) identified radio as the most effective channel for communicating rural development information and extension technicians as the most preferred source. His respondents included radio listeners, station managers and programme directors. Sekhar (1982) in a study among the extension workers in Tamil Nadu found that the listeners placed radio as the third best source of information. It was

preceded by higher officials and far journals only. News paper scored the fifth rank in credibility. Sunil Mishra (1983) placed radio as a highly credible source of information with motivational and educational roles. He wrote people have implicit faith in it.

Chandrakandan (1980) reported 23% of the farmer listeners of farm school on air think it as highly useful and 70% moderately useful, while 7% considered it not at all useful. Sekhar (1982) reported that 86% of the listeners opined that the quality of farm broadcast was very high, 92% thought that it had high usefulness and 74% considered it as timely and complete. Philip (1984) reported no relationship between personal characteristics and attitudes of farmers listeners of the "Farm school on air" programme because of the voluntary registration of farmer listeners under the same programme and their attitude towards the programme was quite in par.

Adoption

This is an important variables studied by many adoption researchers. Wilkening (1952) found negative relationship between age and adoption behaviour. Pandit (1964) reported that age was positively related with

adoption. Kamalsen (1971) observed an increase in the rate of agricultural practices with increase in age as expressed by the trainees of the Farmers Training Camp. Anbalagan (1976) found that young farmers adopted more number of improved agricultural practices of high yielding variety of paddy than older farmers. Pillai (1978) while studying the impact of soil conservation programme, found that age was negatively and significantly related with adoption of soil conservation practices. Annamalai (1980) found that there was no significant relationship between age and adoption behaviour of farmers.

Several researchers have shown that the educational level of farmers was positively related with their adoption behaviour. Notable among them are Wilkening (1953), Van Den Ban (1957), Lionberger (1960), Reddy (1962), Pandit (1964), Rai (1975), Rajendra (1968) and others. Patel and Singh (1970) observed that farmers with higher education accepted improved practices more readily than farmers with lower education. Grewal and Sohal (1971) while studying the comparative role of two social systems in the speed of adoption of some farm practices found greater level of adoption in the group

which had higher educational level. Subramanyam and Lakshmana (1973) as well as Chandrakandan (1973) reported education of farmers as positively related to the extent of adoption of recommended farm practices. Supe and Salode (1975) reported that formal education had no significant relationship with adoption behaviour of farmers. Chandrakandan and Subramanyam (1975) reported that education had positive and significant relationship with adoption behaviour. Sundaraswamy and Duraiswamy (1975) reported that adoption of recommended practices increased with the increase in the level of education of farmers. Rajendran (1978) observed a positive and significant relationship between education and general adoption of the selected agricultural practices.

Pathak and Dargan (1971) reported that adoption of improved practices was independent of the size of farm. Subramanyam and Lakshmana (1973) as well as Sharma and Nair (1974) observed that size of farm had a positive and significant relationship with the adoption of recommended practices by farmers. Chandrakandan and Subramanyam (1975) reported that size of farm had positive relation with adoption. Supe and Salode (1975) found no relationship between size of holding and adoption behaviour of farmers. Kaleel (1978) also found similar results. Rajendran (1978) also found a positive and significant

relationship between size of holding and adoption of selected agricultural practices by farmers.

Several researchers have revealed that social participation of farmers positively influenced their adoption behaviour. Notable among them are Rahim (1960), Reddy, (1962), Reddy and Kivlin (1968) and Singh et al. (1968). Chandrakandan (1973) found that better social participation were better adopters of farm practices. Salunke and Thorat (1975) reported that there was a significant relationship between organizational participation and adoption behaviour of small farmers. Sundaraswamy and Duraiswamy (1975) reported that adoption of recommended practices were more among the farmers who had more social participation. Supe and Salode (1975) reported that the social participation was not related with the adoption of improved agricultural practices. Rajendran (1978) found that social participation of farmers was positively and significantly related with the adoption behaviour of farmers.

Beal and Sibley (1967) found that the farmers' favourable attitude towards science was positively related with the adoption of farm practices. Reddy and

Kivlin (1968) observed that scientific attitude was not related with the adoption of recommended practices by the farmers. Supe and Solode (1975) reported that the scientifically oriented farmers had high extent of adoption of the improved agricultural practices of Jowar cultivation.

Tampi (1979) studying the listening habit and adoption behaviour of rural radioforum convenors, found that a vast majority of the listeners gained knowledge and developed favourable attitude, just 40% decided to practice what they learned.

Nehru (1980) found adoption behaviour of radio rural forum listeners was positively and significantly influenced by their education, radio ownership, social participation and listening behaviour.

Chandrakandan (1982) established correlation between use adoption and variables like credit behaviour, radio listening behaviour, media participation, personal localite exposure and urban contact.

Johnston (1982) reported that in an evaluation of effectiveness radio broadcasts in changing the food consumption habits found the exposure was very high. The results should that 94% of the listeners adopted at least practice recommended.

Philip (1984) reported that the significant relationship existed between listening behaviour and adoption and concluded that increased listening helps acquiring more knowledge and results in higher rate of adoption by the farmer listeners.

III. INDEPENDENT VARIABLES

a. Age

According to Wolman (1973) age means the period of time from birth to any given time in life or chronological age.

Sandhu (1970) reported that radio commanded a universal audience in terms of age. But majority of farmers who were decision makers in the family were in the age group of 31 to 50. Alamgeer (1970) concluded that farm broadcast listening was independent of age. Singh

(1972) found that listeners and non-listeners differed significantly in age. Listeners were of lesser age group than non-listeners. Shakya (1973) found no relationship between age and farm broadcast listening behaviour. Knight and Singh (1975) reported that majority of farm broadcast listeners listened to the agriculture programme at night irrespective of age. Sabarathanam and Rajaram (1975) found that the age of the radio listening farmers ranged from the lowest of 20 years to the maximum 60 years with a mean 39.97 and standard deviation of 8.47 and majority belonged to middle age group. Chandra Kandan (1980) revealed that the listeners of the farm school on air programme in Tamil Nadu were mostly by young preferably less than thirty years in age. Nehru (1980) found that age was not significantly related to the listening behaviour of farmers. Sekhar (1982) found age having negative relation was broadcast listening behaviour of village level workers.

Selvanayagam (1980) found that young farmers gained more knowledge than mid adult and late adult group. Prasad (1981) stated that age has significant influence on knowledge gain of listeners who were village level workers in his study.

Subramanyam (1975) found that age and education influence retention of knowledge. Doraiswamy (1977) found no correlation between age and education. Chandrakandan (1982) stated that young farmers could gain and retain more knowledge than middle aged and old. The later group showed no significant difference between them. Use adoption also was influenced by age.

Philip (1984) reported that young farmers were better listeners because of more innovative to adopt latest technology and there was a significant difference in the listening behaviour of the low and high aged groups of farmers because of the low understanding capacity and literacy levels of aged farmer listeners.

b. Education

According to chamber's Dictionary (1976)

"Education" is the bringing up or training, instructing, strengthening the power of body or mind or culture.

Wolman (1973) meant education as the progressive changes of a person affecting knowledge, attitudes and behaviour as a result of formal institution and study and he further stated that it may be a development of a person resulting from experience rather than from maturation.

Beal and Sibley (1967) have pointed out that the individual's ability to read and write and the amount of formal education he possesses will affect the manner in which the individual gathers data and relates himself to his environment. Alamgeer (1970), Sandhu (1970) Singh (1972) and Jalihal and Srinivasamurthy (1974) found that education positively and significantly influenced farm radio listening behaviour. Sabarathnam and Rajaram (1975) observed that majority of radio listeners were educated up to primary level.

Subramanyam (1975) found that education and age influenced retention of knowledge. Doraiswamy (1977) got contradictory results. Sreepal (1978) established a positive relationship between education and knowledge. Chandrakandan (1980) reported that listeners of the farm broadcast programme were mostly literate in Tamil Nadu. More than three fourth of them had formal schooling with 50% having school education and 30% College education. Nehru (1980) found education along with many other independent variables influenced the listening behaviour, massmedia exposure behaviour, adoption behaviour and communication behaviour. According to Selvanayagam (1980) farmers studied upto secondary level gained more information

than those having only primary education.

Balasubramonium (1980) found education along with many other personal characteristics contributed to innovativeness of adopter farmers.

Gonorkar (1980) found higher educational level resulted increased rate of adoption of high yielding varieties.

Selvaraj (1981) found that difference in education marked influence on knowledge gain.

Mishra and Sinha (1981) concluded that formal education of farmers was important for knowledge gain.

Chandrakandan (1982) found literate farmer listeners could retain more than illiterate listeners. But difference levels of literacy showed no significant difference. Education was found to have significant effect on use adoption

sekhar (1982) found education and experience to have positive and significant relation with farm broadcast listening behaviour of village level workers. Knowledge gain also was significantly influenced by these variables.

Sunil Mishra (1983) reported that radio has cut across the literacy and economy barriers and the radio listeners comprised of all literacy and economy classes. Thus according to him it is a media used by all categories of people. Chaturvedi and Brahamprakash (1983) reported that education was positively related to knowledge and attitude but its impact on the adoption behaviour was not significant.

Philip (1984) found that the listening behaviour of the farmers of low and high literacy levels were in par, because of simple manner of presentation to suit with farmers having different levels of education.

c. Farm size

Patel and Singh (1970) observed that with larger size of holding, the acceptance of new practices was greater than other wise.

Subramoniyam and Lakshmana (1973) also observed, that farm size had positive and highly significant relationship with adoption.

Sabarathnam and Rajaram (1975) found that a majority (67.78%) of the radio listeners were small land holders only 19.33% of respondents had 5 to 10 acres of land and

14% of the listeners had more than 10 acres of land.

Chandrakandam (1980) reported all categories of farmers were there among the radio listeners. 39% had small holdings of 5 acres or less and 35% belonged to 5-10 class.

Nehru (1980) found that farm size was significantly stated to the listening behaviour, mass media exposure behaviour, source utilization behaviour and communication behaviour.

Rajendran (1982) in his study amongst community radio listening found that the listeners were mostly (88%) small farmers while the non-listeners owned medium to large farms.

Chandrakandan (1982) found farm size with other variables like age, education and attitude influenced retention of knowledge, gain of knowledge and symbolic adoption.

Rajendran (1982) while comparing the listeners and non-listeners of the community radio sets found that the listeners had medium to high cropping intensity while nonlisteners had low cropping intensity.

Philip (1984) reported that farm size showed no significant difference with listening behaviour. Every farmer was likely to listen the agricultural information irrespective of their holding size.

d. Sub-Centre Contact

No related study could be reviewed in this context. However it was assumed that more the visits to sub-centre would effect the retention of knowledge about the improved agricultural practices and would create a favourable attitude towards the farm broadcast programme. Based on the above assumption it was decided to include this variable in this study.

e. Scientific Orientation

Reddy and Reddy (1975) found farmers with high scientific orientation to be more innovative in farming.

Sandhu and Darbarilal (1976) found significant correlation between value orientation and communication behaviour.

Kamarudeen (1981) found significant positive relationship between scientific orientation and attitude of farmers towards the demonstrated agricultural practices.

Philip (1984) reported that the scientific orientation of the farmer listeners was not related to listening behaviour.

f. Innovation Proneness

Rogers (1961) defined the innovativeness as the degree to which an individual is earlier than other members in a social system to adopt new idea.

⁽¹⁹⁷⁸⁾ Pillai defined innovation proneness in terms of behaviour pattern of the farmers who have interest in and desire to seek changes in farming techniques and to introduce such changes into their operations when practical and feasible.

Philip (1984) defined innovation proneness as one's readiness to accept and orient towards the new plant protection practices.

Reddy and Reddy (1975) established relationship between innovativeness of farmers and their scientific orientation. Balasubramaniam (1980), reported that mass media exposure behaviour, extension contact, nature of

family perception of loss and profit, education and social participation significantly contributed towards the innovativeness of farmers.

Moulik (1965) found positive association in the adoption of farm practices and innovation proneness of farmers. Bhilegaonkar (1976), reported positive association between adoption and innovation proneness of the farmers.

Philip (1984) reported that innovation proneness has no relation with listening behaviour.

g. Social participation

Rogers and Shoemaker (1971) defined participation is the degree to which members of a social system are involved in the decision making process.

Nehru (1980) defined social participation as the participation of farmers in various organizations and institutions.

Singh (1972) observed positive relationship between social participation and radio listening behaviour. Shakya (1973) stated that radio owning adult farmers had a high level of social participation and listening behaviour.

Roy et. al. (1968) found no relationship between social participation and mass media use Jalihal and srinivasamurthy (1974) found that the radio owning farmers had medium educational standards and read news papers.

Rahim (1960), Reddy (1962), Gupta (1965) and Nair (1969) reported that social participation had significant positive association with adoption of improved farm practices. ~~Patel (1970)~~, Kasim and Mehboob (1974) stated that social participation influenced the adoption of farming practices.

Nehru (1980) reported that mass media exposure behaviour, listening behaviour, source utilization behaviour and adoption behaviour were positively and significantly associated with social participation.

h. Radio ownership

Jalihal and srinivasamurthy (1974) found that majority of the radio owning farmers were exposed to news paper.

Phaliwal and sohal (1965) observed that educational level was positively correlated with possession of radio.

Alamgeer (1970) found that radio ownership was significantly related with farm broadcast listening behaviour.

Nehru (1980) reported that radio ownership was positively and significantly associated with listening behaviour and adoption behaviour of farm broadcast listeners.

1. Radio Accessibility

This variable was selected based on pilot study and no closely related study could be reviewed in this context. It was assumed that access to radio would influence the listening behaviour of farmer listeners and would effect on the retention of knowledge about the improved agricultural practices and would create favourable attitude towards the farm broadcast programme. Based on the above assumption in pilot study it was decided to include this variable in this study.

IV INTERVENING VARIABLE

Knight (1973) he considered two components of the listening behaviour for his study. They were regularity and duration of listening. Tampi (1979) in a study of impact of farm broadcast with rural radio forum convenors as the respondents detailed their listening habits. A

good majority of them (63%) listen the programme regularly, 44% of them were active listeners'. In general listening was very selective.

Sekhar (1982) found farm broadcast listening behaviour of extension workers was influenced by education. He also found that significant relationship existed between three variables such as awareness, knowledge and farm broadcasting listening behaviour.

Chandrakandan (1982) found a profound relation between radio listening behaviour and knowledge gain of listener farmers.

Rajamani and Sinha (1983) found that listening behaviour along with many other personal variables influenced the knowledge gain and adoption behaviour of the farmer listeners.

Regularity of Listening

Singh and Sandhu (1971) reported that 40.77% of farmers were listening regularly, 28.85% several days a week, 8.46% once a week 16.15% less than once a week, while 5.77% had seldom or never listened to them.

Singh (1972) found that 44% of listeners listened to farm programmes every day 39% listened to them in a week.

Shakya (1973) found that his respondents favoured have the frequency of thrice per week in respect of farm broadcast. They favoured a duration of 10 minutes for agricultural broadcasts.

Philip (1984) reported that one fourth of the listeners hear the programme every day, 40% most often and 36% casually. He also reported that lower late in every day listening may be due to the inconvenient broadcast time.

Duration of Listening

Singh (1972) reported that 68% of his listener respondents desired an increase of 10 to 30 minutes over the existing 30 minutes duration.

Knight (1973) found that majority of farm broadcast listeners (45.64%) listened to the programme daily and also found that a great majority (93%) listened to agricultural programme for 20 to 30 minutes in a day.

Badrinarayanan (1977), reported that 50% of his farm broadcast listeners listened to the entire farm broadcast at night. Among the rest about 43% listened to most part of programme, while a few (7%) listened only for sometime. Chandrakandan (1980) revealed that 47% of farmer listeners preferred a duration of 20 minutes for broadcast lessons. Nearly one fourth of them, think that 15 minutes is sufficient.

Sekhar (1982) found that the most suited duration for radio broadcast programmes was 10 to 15 minutes. Sreedhar (1983) advocated 30 minutes to one hour duration for farm telecast programmes as it was desired by 69% of the viewers in his study.

Philip (1984) reported that farmer listeners preferred 15 minutes programmes broadcasted between 7-8 p.m.

Intensity of Listening

Sekhar (1982) estimated that only 10% were intensive listeners, though 61% were full time listeners. The proportion of casual listeners was 29%.

Rajendran (1982) found majority of group listeners heard radio programme in their leisure time and attain it chit-chatting.

Philip (1984) reported that a good majority of farmer listeners were involved as focussed listeners and intensity was much higher than any past reports. The high intensity of listening evidenced in that case was expected from selective and specific category of listeners who volunteered to register under the programme.

Purpose of Listening

sekhar (1982) reported that announcements, question answers and discussion were the regularly listened programmes. Usefulness and timeliness were the factors responsible for regularity of listening.

Sreedhar (1983) found that the progressive farmers were the most preferred source of information and persuasion for the farm telecast viewers.

Philip (1984) reported 70% of the listeners heard the programme with educational objective. The stray listeners were only 30% of the total.

V THEORETICAL CONCEPTS AND OPERATIONAL DEFINITIONS
OF SELECTED VARIABLES

Farm Broadcasting

For the purpose of the study farm broadcasting may be operationally defined as the sending out the agricultural programmes from Radio Nepal to rural areas so as to persuade the rural people to adopt the information contained in the programmes.

Impact of Farm Broadcasts:

In this study impact of farm broadcasts was defined in terms of level of knowledge in Agriculture, attitude towards the farm broadcast and the extent of adoption of improved practices in maize cultivation amongst listeners and non-listeners as a control group.

Radio Owning Farmers/Listeners

Farmers who possess a radio receiving set who as well are listeners of farm broadcasts.

Radio Accessors/Listeners

They are neighbouring farmers of the radio owning farmers within a radius of one kilometer who have access to

radio to listen to the farm broadcasts.

Non-Listeners

They are farmers who are living outside the radius of one kilometer from radio owning farmers who neither own radio nor listen to farm broadcasts.

Listening Behaviour

Baker (1971) stated 'Listening' as the selective process of attending to hearing, understanding and remembering aural symbols.

Nehru (1980) operationalized the listening behaviour as a process of hearing with preparedness and expectation involving regular and attentive listening leading to make a decision about the programme.

Philip (1984) defined the listening behaviour as consisting of four components viz. regularity, intensity, duration and purpose.

For the purpose of the study the definition by Philip (1984) was accepted.

Age:

Age was defined as the No. of chronological years the respondent has completed at the time of this study since his/her birth.

Education:

Education was defined as the level of literacy, the ability of respondents to read and write including the extent of schooling.

Farm size:

Farm size was defined as total area of land owned and cultivated by farmer listeners.

Sub-Centre:

It is the service centre for the farmers to meet their requirements for farming services and farm inputs.

Sub-Centre Contact:

It was defined as the extent of contact with the subcentre by farmers for advice, service and inputs to meet their farming needs.

Scientific Orientation:

Supe (1969) defined scientific orientation as the

degree to which a farmer is oriented to the use of scientific methods in farming.

same definition was used for the purpose of this study.

Innovation Proneness:

In this study it was operationally defined as one's readiness to accept and orient towards the improved agricultural practices in maize cultivation.

Social Participation:

Defined as involvement of the respondents in formal and informal organizations and participation in meetings connected with the respective organization.

Radio ownership:

It was defined as possession of radio receiving set by a farmer listener in this study.

Radio Accessibility:

It was defined as the availability of radio receiving set within a radius of one kilometer from the respondent's house.

Knowledge:

English and English (1958) defined knowledge as a body of understood information possessed by an individual or by a culture.

Abdul muis (1983) defined knowledge as the degree to which an individual is acquainted with or aware of something new to him including technical know how.

For the purpose of this study knowledge was operationalised as the knowledge of listeners and non-listeners on the content of farm broadcast programme.

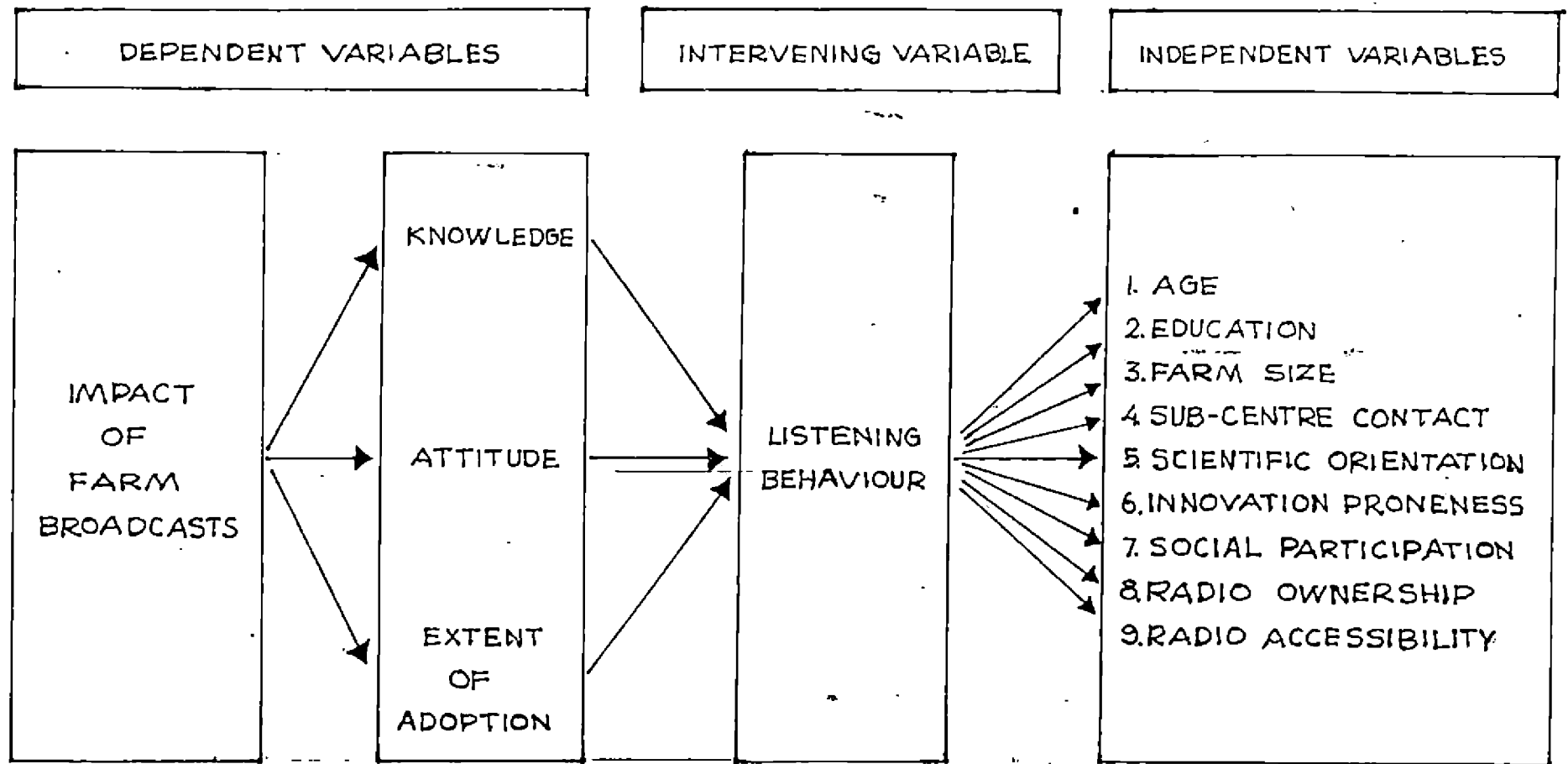
Attitude:

All port (1935) defined attitude as a mental and neural state of readiness organized through experience exerting the directive or dynamic influence upon the individual's response to all the objects and situations with which it is related.

Thurstone (1946) defined attitude as the degree of positive or negative affect associated with some psychological object towards which people can differ in varying degrees.

For the purpose of this study attitude was defined as the degree of favourable or unfavourable disposition

FIG. 1. THEORETICAL FRAME-WORK OF IMPACT OF FARM BROADCASTS ON ADOPTION OF AGRICULTURAL INNOVATIONS BY THE FARMERS



as experienced by radio listening and non-listening farmers towards the farm broadcast programme.

Extent of Adoption

Rogers (1962) defined adoption process as the mental processes through which an individual passes from first hearing about an innovation to its final adoption.

Chattopadhyaya (1963) - defined adoption as the stage in the adoption process where decision making is complete regarding the use of a practice and action with regard to such a decision commences.

Rogers and Shoemaker (1971) defined adoption as a decision to continue full use of an innovation as the best course of action.

For the purpose of this study extent of adoption is defined as the extent of utilization of improved agricultural practices of maize cultivation on the content of the farm broadcasts by radio listening and non-listening farmers of Nuwakot District of Nepal.

Accordingly the theoretical frame-work of the study is appended herewith in figure-1.

METHODOLOGY

chapter III

METHODOLOGY

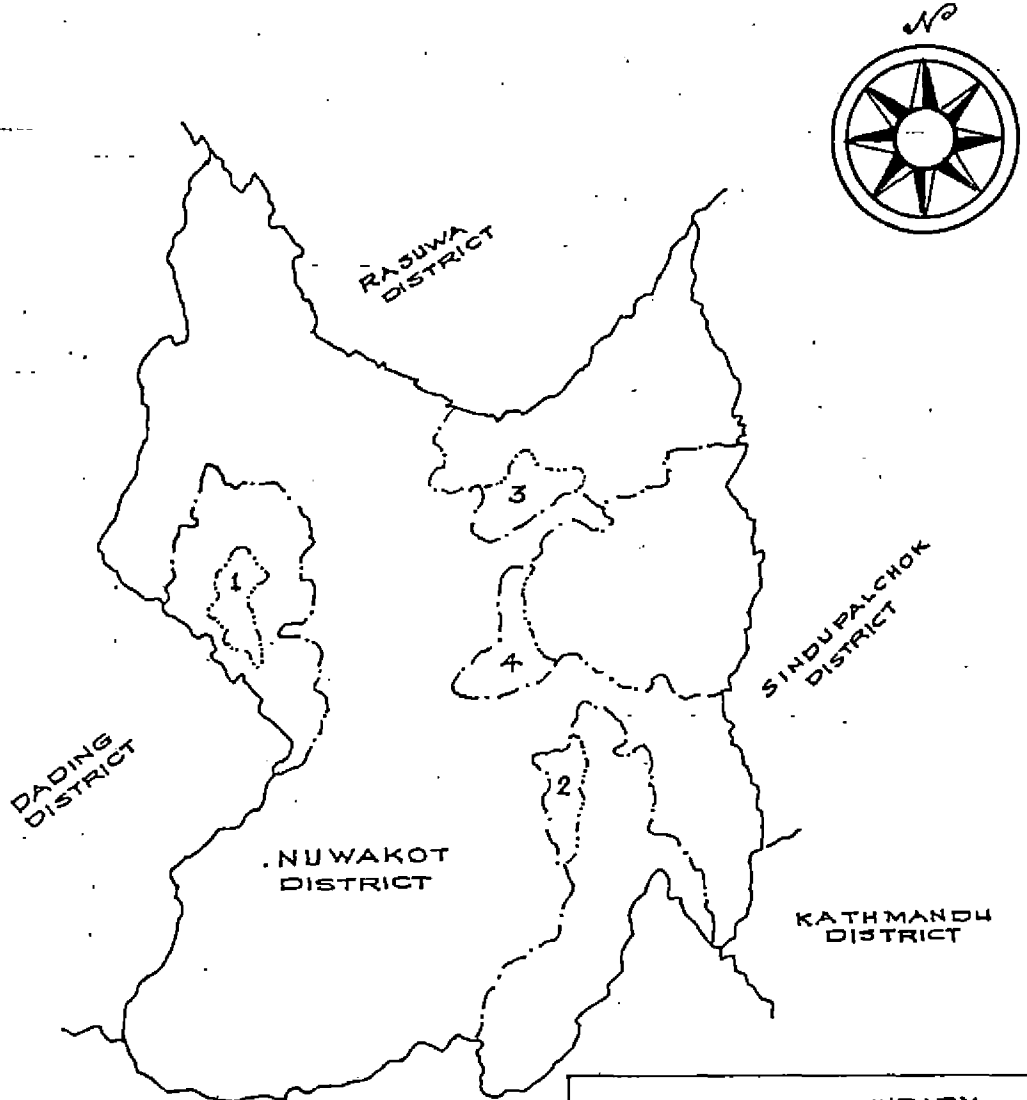
The methodology adopted in this study is described in the following sections:-

- I Location of study
- II Sampling procedure
- III Collection of data
- IV Measurement of dependent variables
- V Measurement of independent variables
- VI Measurement of intervening variables
- VII Statistical techniques used

I. Location of study

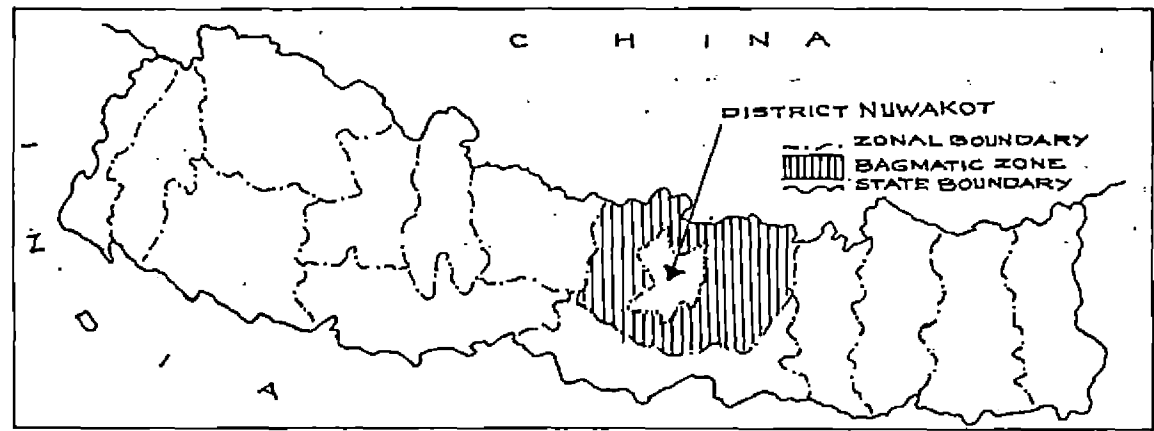
This study was confined to four sub-centres of Nuwakot District of Nepal. The sub-centres selected were Devighat, Tupche, Rani pauwa and Chaughada. From each sub-centres one panchayat was selected for study based on the higher number of farm family and population of radio. The panchayats selected were Bidur from Devighat sub-centres, Trisuli from Tupche sub-centre, chaughada from chaughada sub-centre and Madanpur from Ranipauwa sub-centre.

**FIG. 2. MAP SHOWING THE LOCATION OF STUDY
IN NEPAL.**



~~~~~ DISTRICT BOUNDARY  
 - - - - PANCHAYAT BOUNDARY  
 - - - - SUB CENTRE BOUNDARY  
 1. BIDUR (PANCHAYAT)  
 2. MADANPUR  
 3. TRISULI  
 4. CHAUGHADA

MAP OF NEPAL





## II Sampling procedure

~~stages~~ <sup>three</sup> stage sampling procedure was adopted for the selection of respondents. The first ~~stage~~ being sub-centres of Muwakot District of which four sub-centres were selected out of nine sub-centres purposively based on feasibility and accessibility to farm family. From the selected sub-centres one panchayat each was selected for study. From the selected panchayats 75 respondents who listen the farm broadcast programmes were selected purposively based on the number of farm family. Among the 75 respondents 50 respondents were selected from radio owners and 25 respondents were from radio accessors.

Another 75 respondents who never listen the farm broadcast programmes were selected purposively based on the numbers of farm family as the control group to study the impact. Sample size and distribution are presented in Table-1.

Table-1. Distribution and size of sample from four sub-centres.

| Sl. No. | Sub-centre | Panchayat | Farm family | Population | Radio population | Sample size |               |    |
|---------|------------|-----------|-------------|------------|------------------|-------------|---------------|----|
|         |            |           |             |            |                  | Listeners   | Non listeners |    |
| 1.      | Devighat   | Bidur     | 506         | 4336       | 57               | 15          | 7             | 15 |
| 2.      | Rani-Pauwa | Madanpur  | 636         | 5015       | 40               | 10          | 5             | 20 |
| 3.      | Tupche     | Trisuli   | 512         | 4093       | 61               | 15          | 8             | 25 |
| 4.      | Chaughada  | Chaughada | 386         | 3513       | 48               | 10          | 5             | 15 |

### III Collection of data

A pilot study using a dummy interview schedule was conducted with 15 farmers who were farm broadcast listeners as well as non-listeners. Based on the results of the pilot study the final interview schedule was prepared. The data was collected from the respondents by personal interview.

#### IV Measurement of Dependent variables

##### Knowledge

Shankariah and Singh (1967) measured knowledge of the respondents about improved methods of vegetable cultivation based on teacher made test.

Singh and Singh (1974) measured knowledge of the respondents using selected questions. Total knowledge score of each respondents was calculated as follows.

$$\text{Knowledge score} = \frac{X_i}{n} \times 100$$

Where,  $X_i$  = no of questions answered correct

$n$  = total no. of question asked

Singh and Prasad (1974) measured knowledge by working at knowledge quotient, calculated as follows.

$$KQ = \frac{\text{obtained knowledge score}}{\text{Actual Total score}} \times 100$$

Chandrakandan (1980) measured knowledge gain of farmer listeners by categorizing them into 5 classes.

| <u>Score</u> | <u>Class</u> |
|--------------|--------------|
| 0 - 5        | poor         |
| 5.1 - 10     | low          |
| 10.1 - 15    | Medium       |
| 15.1 - 20    | High         |
| 20.1 - 25    | Very high    |

Pre-broadcast and post-broadcast knowledge scores were compared for significant difference using Kolmogorovsmirvove test.

Paired 't' test was used to confirm significance of the difference of the mean scores. Mc Nemar test was also applied.

Chandrakandan (1982) operationalized knowledge gain as the quantum of information newly learnt by an individual due to the exposure to the broadcast. He used "difficult" and "discrimination" indices for selection of items to measure it. The scale had a score range of 0-25.

Difficulty index =  $\frac{\text{No. of correct responses for the } i\text{th item}}{\text{Total no. of respondents}}$

Discrimination index =  $\frac{\text{No. of correct responses in the high group} - \text{No. of correct responses in low group}}{\text{No. of responses in criterion group}}$

In this study it was measured using standardized knowledge test with items selected from the content of the programme on agricultural practices. vide appendix-I.

The following procedure was adopted for selecting the knowledge test items and framing the "Knowledge Test".

1. Item collection:

The content of knowledge test is composed of questions called items. A number of items on the aspects of agriculture dealt within the farm broadcast were collected in consultation with the chief of the Agricultural Information Division, Department of Agriculture Kathmandu Nepal, who is familiar with the content of programme. All together 40 items were collected. The items were converted with objective type of questions vide appendix-III.

2. Item analysis:

Item analysis was done to get the following factors.

- (i) index of item difficulty and
- (ii) index of item discrimination

The collected items were administered to 30 farmers. Score of 1 and 0 were given for correct and wrong answers respectively. The total score of each individual was then collected and arranged in ascending order vide appendix-IV.

As suggested by Anasthasi (1961) all the 30 respondents were grouped into three on the basis of their scores. 33.33% of lowest, 33.33% of highest and 33.33% medium scores were taken for calculating the indices of item difficulty and item discrimination. 33.33% with highest scores, 33.33% with medium scores and 33.33% with lowest scores were termed as high, medium and low groups respectively.

(i) Index of item difficulty

The difficulty index of each item was calculated by averaging the percentages of correct answers in high, medium and low groups.

$$p_i = \frac{n_i}{N_i} \times 100$$

where  $P_i$  = Difficulty index in percentage of  $i$ th item

$n_i$  = No of farmers giving correct answers of  $i$ th item by low, medium and high groups

$N_i$  = Total no. of respondents to whom the  $i$ th item was administered.

(ii) Index of item discrimination

The discrimination index of each item 'that is' its capacity to discriminate the well informed from the poorly informed was calculated by the formula.

$$E = \frac{S1 - S2}{N/3}$$

- Where E = discrimination index  
 S1 and S2 = Frequencies of correct answers in high and low group respectively.  
 N = Total no. of respondents in the item analysis sample.

(iii) Final selection of items

Those items which had a difficulty index of between 20 and 80 percent and discrimination index of above 0.30 were selected for inclusion in knowledge test. With this presumption 20 items were selected for the final knowledge test vide appendix-IV.

(iv) Method of scoring:

A score of 1 was given for correct answers and 0 for wrong answers. The total score for each respondent was calculated by summing up the scores obtained for each item. Thus the maximum knowledge score could be obtained by a respondent was 20 and minimum was 0. The respondents were categorized with following statistical method.

$$\begin{aligned} \text{High} &= > \left( \text{Mean} + \frac{SD}{\sqrt{n}} \right) \\ \text{Medium} &= \text{Between Mean} \pm \frac{SD}{\sqrt{n}} \\ \text{Low} &= < \left( \text{Mean} - \frac{SD}{\sqrt{n}} \right) \end{aligned}$$

### Attitude

Sekhar (1982) reported that selected programme preference, mode of delivery, duration and time as the criteria to study the opinion of the listeners about the farm broadcast programmes.

Chandrakandan (1982) defined attitude towards farm broadcast as the degree of positive or negative disposition associated with farm broadcast. He developed a scale to measure using the method of equal appearing intervals by Thurstone and Chave (1929). This scale consists of 6 statements (given in appendix V). Half of the six statements are positive and half of are negative.



In this study attitude was measured by using the scale developed by Chandrakandan (1982). The scale was subjected to all the three groups ie. Radio owners, Radio accessors and Non-listeners, in a three point continuum and scoring was followed as given below:

Disagree = 0

Neutral = 1

Agree = 2

In case of negative statements the scoring system was reversed. Then each respondent had a opportunity to secure a score of maximum 12 and minimum 0. The following statistical technique was used for grouping the respondents in all the three groups.

High =  $\frac{7}{\sqrt{n}} (\text{Mean} + \frac{SD}{\sqrt{n}})$

Medium = Between Mean  $\pm \frac{SD}{\sqrt{n}}$

Low =  $\frac{2}{\sqrt{n}} (\text{Mean} - \frac{SD}{\sqrt{n}})$

#### Extent of Adoption

Wilkening (1952) measured the adoption by using an index. The index was the percentage adopted to the

total number of practices applicable. He suggested differential weights in the adoption index.

Marsh and Coleman (1955) used a practice adoption score computed as the percentage of applicable practices.

Chattopadhyaya (1963) considered potentiality, extent of adoption, weightage of each practice and time taken in developing an adoption quotient.

Supre (1969) used an unweighted practice adoption score. He selected 10 practices of cotton and for each practice the total score for complete adoption was 6. The practices were divisible and were assigned partial scores for partial adoption.

Jaiswal and Dave (1972) developed an adoption quotient with the components such as extent of adoption and potentiality of each practices.

Nehru (1980) modified the formula developed by Jaiswal and Dave (1972) and used in his study.

$$\text{Adoption quotient} = \frac{e/p \times 100}{N}$$

Where  $e$  = extent of adoption of each practice

$p$  = potentiality of adoption of each practice

$N$  = total number of practices.

In this study for the measurement of extent of adoption 13 recommended practices given through farm broadcast about the improved agricultural practices in maize cultivation were selected. As maize was the most common and stable crop of Nuwakot District and all respondents in all the three groups were from maize growers.

For the purpose of scoring one score for each recommended practices was given to each respondent if it was adopted completely and zero was given for no adoption. There would be a maximum score of 13 and minimum of 0 that a respondent could have secured.

On the basis of score obtained by the respondents, they were categorised by using following confidence limits.

$$\text{High} = 7 \left( \text{Mean} + \frac{SD}{\sqrt{n}} \right)$$

$$\text{Medium} = \text{Between Mean} \pm \frac{SD}{\sqrt{n}}$$

$$\text{Low} = 7 \left( \text{Mean} - \frac{SD}{\sqrt{n}} \right)$$

## V Measurement of Independent Variables

### a. Age

In this study age was calculated as the number of chronological years the respondent has completed at the time of this study since his birth. The farmers were classified as follows:

|                     |   |                       |
|---------------------|---|-----------------------|
| Young farmers       | = | Less than 30 years    |
| Middle aged farmers | = | 30 - 50 years         |
| Old aged farmers    | = | greater than 50 years |

### b. Education

Trivedi (1963) used the following scoring system to measure the level of education.

|                      |   |   |
|----------------------|---|---|
| Illiterate           | = | 0 |
| Can read only        | = | 1 |
| Can read and write   | = | 2 |
| Primary school level | = | 3 |
| Middle school level  | = | 4 |
| High school level    | = | 5 |
| Graduate level       | = | 6 |
| Above                | = | 7 |

Philip (1984) modified this scale and used the following scoring system.

|                      |   |   |
|----------------------|---|---|
| Illiterate           | = | 0 |
| Can read and write   | = | 1 |
| Primary school level | = | 2 |
| High school level    | = | 3 |
| Collegiate           | = | 4 |

In this study education was measured by modifying the scale developed by Trivedi (1963) and scoring system was followed

|                       |   |   |
|-----------------------|---|---|
| Illiterate            | = | 0 |
| Can read only         | = | 1 |
| Can read and write    | = | 2 |
| Primary school level  | = | 3 |
| Middle school level   | = | 4 |
| High school and above | = | 5 |

The respondents were categorised into following four groups on the basis of distribution of literacy.

Illiterate group  
 Can read only  
 Can read and write  
 Primary school and above

c. Farm size

In this study farm size was measured as number of ropanies\* of cultivated land possessed by the respondent. It includes both upland and lowland. The scoring system for the measurement of farmsize was as follows:-

|                       |   |   |
|-----------------------|---|---|
| No land               | = | 0 |
| Less than 20 ropanies | = | 1 |
| 20-40 ropanies        | = | 2 |
| Above 40 ropanies     | = | 3 |

(\* Ropanies is the Nepalese terms for land measurement-  
 20 ropanies = 1 hectare)

The farmers were grouped into three as

|                 |                         |
|-----------------|-------------------------|
| Marginal farmer | (Less than 20 ropanies) |
| Small farmer    | ( 20 - 40 " )           |
| Big farmer      | ( Above 40 " )          |

d. Sub-Centre Contact

In this study it was measured in terms of number of visits by the respondent to sub-centre in a week. The scoring system adopted was as follows:

|                                        |   |   |
|----------------------------------------|---|---|
| Not at all/never                       | = | 0 |
| Rarely/once in a week                  | = | 1 |
| Frequently/2 times a week              | = | 2 |
| Regularly/ 3 times a week<br>and above | = | 3 |

e. Scientific Orientation

supe (1969) and Kamarudeen (1981) operationalized scientific orientation as the degree to which a farmer is oriented to the use of scientific methods in decision making in farming.

Philip (1984) defined scientific orientation as the extent and degrees of scientism in the positive operational behaviour of the farmers.

In this study definition given by supe (1969) was followed. For the measurement of this variable scale developed by supe (1969) was used. This scale consists of six statements (given in the appendix-V) regarding the use of scientific methods in farming in which five statements are positive and one is negative.

These statements were subjected to respondents in the following scoring continuum.

|                   |   |   |
|-------------------|---|---|
| Strongly          | = | 7 |
| Agree             | = | 5 |
| Undecided         | = | 4 |
| Disagree          | = | 3 |
| Strongly Disagree | = | 1 |

In case of negative statements the scoring system is reversed. Then there will be a total score of 42 and minimum of six. The respondents were grouped as follow:

$$\text{High} = 7 \left( \text{Mean} + \frac{\text{SD}}{\sqrt{n}} \right)$$

$$\text{Medium} = \text{Between Mean} \pm \frac{\text{SD}}{\sqrt{n}}$$

$$\text{Low} = 1 \left( \text{Mean} - \frac{\text{SD}}{\sqrt{n}} \right)$$



f. Innovation proneness

Rogers (1960) defined innovativeness as the degree to which an individual is earlier than in his social system to adopt new ideas.

Shailaja (1981) measured innovativeness with respect to adoption of high yielding varieties. She used a set of statements on a three point continuum as always, sometimes and never to which the scores assigned were 2, 1 and 0 respectively.

Moulik (1965) developed a self rating scale to measure the innovation proneness of farmers. The scale consists of three set of statements each set again containing three separate statements with weights 3, 2, 1 indicating high, medium and low degree of innovation proneness. After obtaining the most to least choices for each of three sets of statements, the scoring was done by summing up the ratio of the weight of the 'most like' statements to the weight of the 'least like' statements.

In this study it was defined as readiness to accept and orient towards the new agricultural practices in maize cultivation and it was measured by using the self rating scale developed by Moulik (1965). The respondents were categorized with the following statistical method.

$$\begin{aligned} \text{High} &= 7 \left( \text{Mean} + \frac{\text{SD}}{\sqrt{n}} \right) \\ \text{Medium} &= \text{Between Mean} \pm \frac{\text{SD}}{\sqrt{n}} \\ \text{Low} &= 2 \left( \text{Mean} - \frac{\text{SD}}{\sqrt{n}} \right) \end{aligned}$$

g. social participation

Nehru (1980) calculated the participation scores as per the scoring system followed in the socioeconomic status scale of Trivedi (1963) which was also used by Murthy and Singh (1974), Naidu (1978) and Rajendran (1978). The scoring was as follows:

|                                |   |   |
|--------------------------------|---|---|
| Membership in one organization | = | 1 |
| " more than one organization   | = | 2 |
| Office holder                  | = | 3 |
| Distinctive feature            | = | 6 |

In this study scoring system was modified and it was as follows:

|                                          |   |   |
|------------------------------------------|---|---|
| Non-member                               | = | 0 |
| Membership in one organization           | = | 1 |
| Membership in more than one organization | = | 2 |
| Office holder                            | = | 3 |

#### h. Radio ownership

In this study, radio ownership was measured by following scoring system.

|                                        |   |   |
|----------------------------------------|---|---|
| No possession of radio receiving set   | = | 0 |
| Possession of each radio receiving set | = | 1 |

#### i. Radio accessibility:

In this study it was measured with the following scoring system.

For each radio receiving set within a radius of one kilometre in neighbourhood from the respondent's house=1

No radio receiving set within a radius of one kilometre in neighbourhood from the respondent's house = 0

#### VI Measurement of Intervening Variable.

Singh and Sandhu (1971) defined listening behaviour as the regularity with which the farmers hear the selected farm programmes together with the extent of attention paid to the programme. He used a five point scoring to measure it.

Knight and Singh (1975) measured listening behaviour in terms of regularity and duration of listening. Responses to regularity were categorized as daily (5) more than twice a week (4), twice a week (3), once a week (2), rarely (1) and not at all (0) with the scores given along with.

Sadrinarayanan (1977) measured the listening behaviour in terms of regularity, duration and intensity. A four point scoring pattern was used by him.

Philip (1984) measured the listening behaviour in terms of regularity, intensity, duration and purpose. It was measured with respect to three selected daily agricultural broadcasts of AIR namely "Gramakshema Varthakal, Vayalum veedum and Kampola Nilavaram". He used two way mixed matrix for the purpose of scoring

| <u>Programmes</u> | <u>Regularity+</u> | <u>Intensity+</u> | <u>Duration+</u> | <u>Purpose</u>  |
|-------------------|--------------------|-------------------|------------------|-----------------|
| Gramakshema       | Every day-3        | Involved-4        | Completely-2     | Educational     |
| Varthakal         | Most often-2       | Focussed-3        | Partially-1      | -3              |
| Vayalum veedum    | Casually-1         | Full time-2       |                  | Entertainment-2 |
| Kampola Nilavaram |                    | Engaged-1         |                  | Accidental-1    |
| -----             |                    |                   |                  |                 |
| Total score       |                    |                   |                  |                 |

In this study, listening behaviour was measured in terms of regularity, intensity, duration and purpose of listening of the farm broadcast programmes. It was measured with respect to four selected once-in-a week seasonal agricultural broadcasts of radio Nepal namely Agricultural Magazine, Question and Answers, Discussion between farmers and JTA and JTA and Budhi Amma,

The following scoring system developed by Philip (1984) was used for the purpose of this study.

| <u>Programmes</u>                  | <u>Regularity+</u> | <u>Intensity+</u>         | <u>Duration+</u> | <u>Purpose</u>  |
|------------------------------------|--------------------|---------------------------|------------------|-----------------|
| Agricultural Magazines             | Every week - 3     | Involved-4                | Completely-2     | Educational-3   |
| Questions and Answers              | Most often-3       | Focussed-3<br>Leisurely-2 | Partially-1      | Entertainment-2 |
| Discussion between JTA and farmers | Casually -1        | Engaged-1                 |                  | Accidental-1    |
| JTA and Budhi Ama                  | Never-0            |                           |                  |                 |

-----  
Total score

## VII Statistical techniques used

### a. Student 't' test

It was employed to find out the significant difference between the mean scores of dependent and

independent variables in all the three groups of respondents (Radio owners, and Radio accessors and non-listeners). The following formula was used for the purpose of analysis.

$$t_{(n_1 + n_2 - 2)} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2} \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

where  $\bar{X}_1$  = mean of  $X_1$  series  
 $\bar{X}_2$  = mean of  $X_2$  series  
 $s_1^2$  = variance of  $X_1$  series  
 $s_2^2$  = variance of  $X_2$  series  
 $n_1$  = no of observations in  $X_1$  series  
 $n_2$  = no. of observations in  $X_2$  series

#### b. Correlation

Simple correlation coefficient was worked out to test the relationship between the independent and dependent variables of all the three groups.

Inter correlation analysis was carried out to find out the correlation among the dependent variables of all the three groups.

Inter correlation analysis was also carried out to find out the relationship among the independent variables of all the three groups.

The significance of correlation was tested at 5 percent level of probability.

The formula used to compute the simple correlation

$$\text{was } r_{xy} = \frac{P_{xy}}{\sigma_x \sigma_y}$$

where,  $r_{xy}$  = correlation between x and y

$P_{xy}$  = Product moment of x and y

$\sigma_x, \sigma_y$  = standard deviation of the distribution of x and y

### c. Path analysis

In this study solutions of path co-efficients were worked out to find out the direct and indirect effects of the selected independent variables on knowledge, attitude and extent of adoption by the farmer listeners and non-listeners.

The analysis of data was done by using the electronic computer of the Department of Agricultural Statistics, College of Agriculture, Vellayani.



## **RESULTS**

## Chapter IV

### RESULTS

The results of the study in accordance with the objectives set earlier are presented in this chapter under the following sections.

- I Distribution and comparison of listeners (RO and RA) and non-listeners according to dependent variables.
- II Distribution and comparison of listeners (RO and RA) and non-listeners according to their personal characteristics.
- III Inter correlation of dependent variables.
- IV Correlation between dependent variables, and independent variables and intervening variable.
- V Relationship amongst the independent variables and the intervening variable.
- VI Path analysis of dependent variables with correlated independent variables and intervening variable.
- VII Comparative analysis of listening behaviour of radio owners and radio accessors.

- I. Distribution and comparison of listeners (RO and RA) and non-listeners according to dependent variables.
- A. Distribution and comparison of listeners (RO and RA) and non-listeners according to level of knowledge in agriculture.

Data pertaining to level of knowledge in agriculture are presented in Table-2 and Table-3.

Table-2. Distribution of listeners and non-listeners according to their level of knowledge in agriculture.

| Level of Knowledge | Listeners (RO)<br>(N=50) |                | Listeners (RA)<br>(N=25) |                 | Non-listeners (NR)<br>(N=75) |                 |
|--------------------|--------------------------|----------------|--------------------------|-----------------|------------------------------|-----------------|
|                    | Freq-<br>uency           | Perce-<br>tage | Freq-<br>uency           | Perce-<br>ntage | Frequ-<br>ency               | Perce-<br>ntage |
| Low                | 13                       | 26.00          | 8                        | 32.00           | 30                           | 40.00           |
| Medium             | 21                       | 42.00          | 6                        | 24.00           | 20                           | 26.67           |
| High               | 16                       | 32.00          | 11                       | 44.00           | 25                           | 33.33           |
| Total              | 50                       | 100.00         | 25                       | 100.00          | 75                           | 100.00          |

It is seen from Table-2 that 26% of radio owners, 32% of radio accessor and 40% of non-listeners had low level of knowledge. In the case of farmers having medium

level of knowledge, the percentage of respondents were 42% radio owners, 24% RA and 26.67% non listeners.

It is noted that 32% of RO, and 44% of RA possess higher knowledge amongst the listeners with practically little difference between that of the control group (33.33%).

Table-3. Comparison of listeners (RO and RA) and non-listeners according to their mean knowledge scores.

| Categories          | Mean scores | Standard deviations | t-value            |
|---------------------|-------------|---------------------|--------------------|
| Listeners (RO)      | 13.80       | 2.61                | (RO-RA)<br>2.84*   |
| Listeners (RA)      | 11.98       | 2.52                | (RO-NRO)<br>11.23* |
| Non-listeners (NRO) | 8.24        | 2.77                | (RA-NRO)<br>5.93*  |

\*Significant at 5 percent level of probability

Table-3, evidences a significantly wide gap between the mean knowledge scores of listeners (RO and RA) and that of the non-listeners. The computed t values indicated a significance difference between RO and NRO & RA and NRO.

A significance in the mean knowledge scores has been noted between the RO & RA of the listener group wherein the level of knowledge of the RA was found to be lower than that of the knowledge gained by RO.

B. Distribution and comparison of listeners (RO and RA) and non-listeners according to their attitude towards farm broadcasts.

Data regarding the distribution and comparison on the basis of their attitude score are presented in Table-4 and Table-5.

Table-4. Distribution of listeners and non-listeners according to their attitude towards farm broadcasts.

| Level of attitude | Listeners (RO)<br>(N=50) |                 | Listeners (RA)<br>(N=25) |                 | Non-listeners(NRO)<br>(N=75) |                 |
|-------------------|--------------------------|-----------------|--------------------------|-----------------|------------------------------|-----------------|
|                   | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency               | Perce-<br>ntage |
| Low               | 8                        | 16.00           | 8                        | 32.00           | 31                           | 41.34           |
| Medium            | 30                       | 60.00           | 7                        | 28.00           | 24                           | 32.00           |
| High              | 12                       | 24.00           | 10                       | 40.00           | 20                           | 26.66           |
| Total             | 50                       | 100.00          | 25                       | 100.00          | 75                           | 100.00          |

Table-4 revealed that 60% RO, 28% RA and 32% non-listeners belonged to medium level of attitude category, while 16% RO, 32% RA & 41.34% of non-listeners were having only low level of attitude. But it is interesting to note that 40% of the RA had high attitude towards farm broadcast as against only 24% of the radio owner listeners.

Table-5. Comparison of listeners (RO and RA) and non-listeners according to their mean attitude scores.

| Categories          | Mean scores | Standard deviation | t - value       |
|---------------------|-------------|--------------------|-----------------|
| Listeners (RO)      | 9.44        | 1.52               | (RO-RA) 4.25*   |
| Listeners (RA)      | 7.52        | 2.31               | (RO-NRO) 13.07* |
| Non-listeners (NRO) | 4.30        | 2.34               | (RA-NRO) 5.94*  |

\* Significant at 5 percent level of probability.

The mean attitude score of RO was 9.44 and that of RA was 7.52. The lowest score was that of non-listeners (4.30) as shown in Table-5. The difference was substantiated by t-value revealing the significance difference between each groups. Naturally the non radio owner had the least attitude towards farm broadcast for want of radio sets.

C. Distribution and comparison of listeners (RO and RA) and non-listeners according to extent of adoption of recommended agricultural practices.

Data are presented in Table-6 and Table-7.

Table-6. Distribution of listeners and non-listeners according to their extent of adoption of recommended agricultural practices.

| Extent of Adoption | Listeners (RO)<br>(N=50) |                 | Listeners (RA)<br>(N=25) |                 | Non-listeners (NRO)<br>(N=75) |                 |
|--------------------|--------------------------|-----------------|--------------------------|-----------------|-------------------------------|-----------------|
|                    | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency                | Perce-<br>ntage |
| Low                | 9                        | 18.00           | 8                        | 32.00           | 18                            | 24.00           |
| Medium             | 21                       | 42.00           | 12                       | 48.00           | 33                            | 44.00           |
| High               | 20                       | 40.00           | 5                        | 20.00           | 24                            | 32.00           |
| Total              | 50                       | 100.00          | 25                       | 100.00          | 75                            | 100.00          |

The data in Table-6 revealed that majority of listeners (RO, 42%), listeners (RA, 48%) and non listeners (44%) were medium adopters, while 18% of RO, 32% of RA and 24% non-listeners were low adopters.

It is interesting to note that only 20% RA belonged to high adoption category whereas 40% RO and 32% non-listeners belonged to the same category.

FIG. 3. COMPARISON OF KNOWLEDGE, ATTITUDE AND EXTENT OF ADOPTION OF LISTENERS (RO & RA) AND NON-LISTENERS OF FARM BROADCASTS (TABLE 3, 5 AND 7)

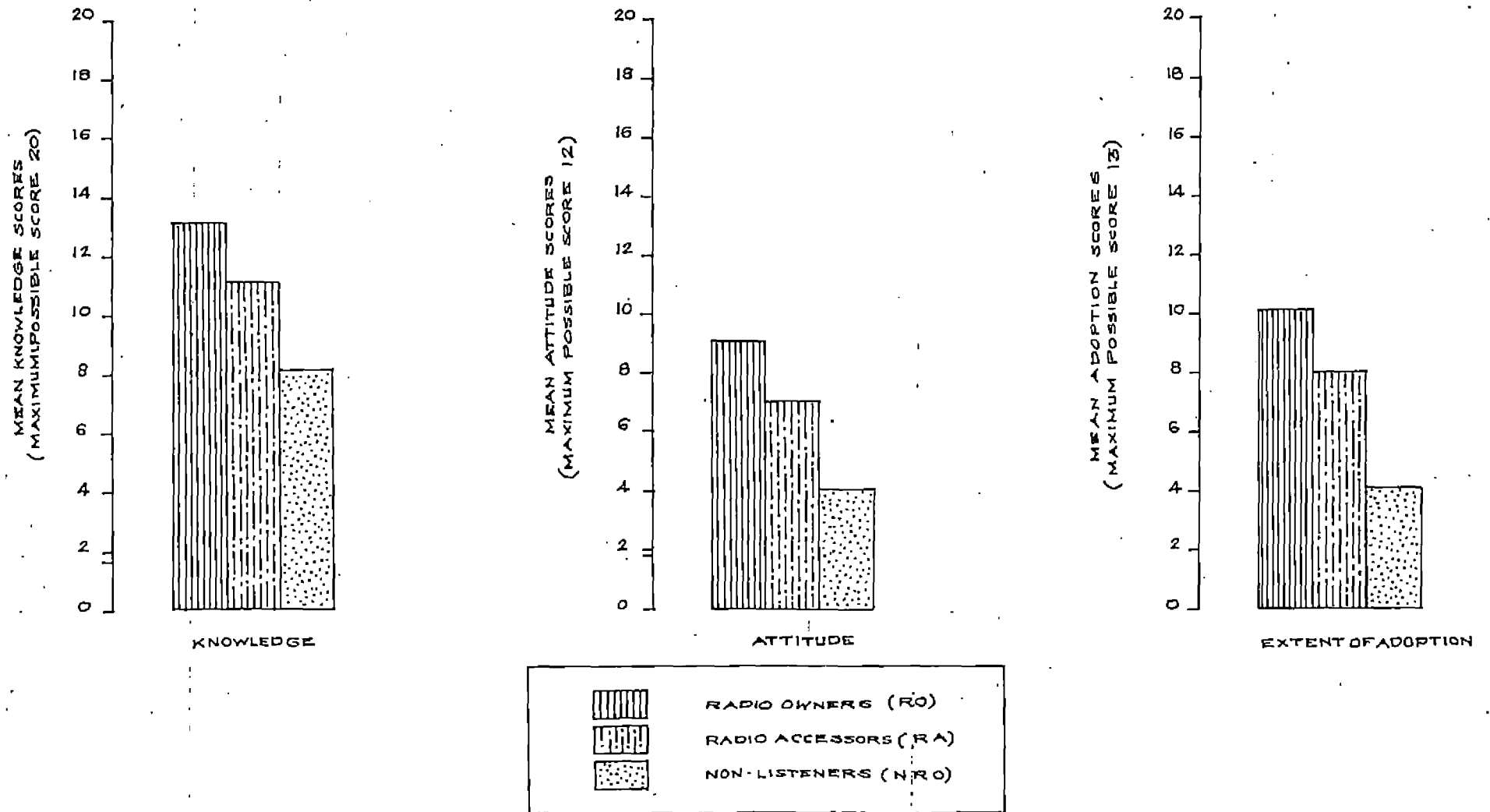




Table-7. Comparison of listeners and non listeners  
according to their mean extent of adoption scores.

| Categories          | Mean scores | Standard deviation | t - value       |
|---------------------|-------------|--------------------|-----------------|
| Listeners (RO)      | 10.04       | 1.69               | (RO-RA) 4.77*   |
| Listeners (RA)      | 8.00        | 1.64               | (RO-NRO) 17.01* |
| Non-listeners (NRO) | 4.65        | 1.76               | (RA-NRO) 8.52*  |

\* = significant at 5 percent level of probability.

Table-7 showed that the mean adoption score of the listeners (RO) and (RA) and non-listeners were 10.04, 8.00, 4.65 respectively. It clearly indicated the mean adoption score of RO was higher than that of RA and Non-listeners. The adoption score of RA was also higher than that of (NRO).

It was further proved that by the computed value of 't' revealing significant difference between each 3 groups in respect to their mean scores on extent of adoption of recommended practices in maize cultivation.

Mean scores of knowledge, attitude and extent of adoption of listeners (RO and RA) and non-listeners has been compared and presented in bar diagrammes (Fig.-3) vide Tables-3, 5 and 7.

II Distribution and comparison of listeners (RO and RA) and non-listeners according to their personal characteristics.

A. Distribution and comparison of listeners (RO and RA) and non-listeners according to their age.

The data for distribution and comparison of RO, RA and NRO are presented in Table-8 and Table-9.

Table-8. Distribution of listeners (RO and RA) and non-listeners according to their age groups.

| Age groups | Listeners (RO)<br>(N=50) |                 | Listeners (RA)<br>(N=25) |                 | Non-listeners(NRO)<br>(N=75) |                 |
|------------|--------------------------|-----------------|--------------------------|-----------------|------------------------------|-----------------|
|            | Frequ-<br>ency           | Perce-<br>ntage | Frequ-<br>ency           | Perce-<br>ntage | Freq-<br>uency               | Perce-<br>ntage |
| Young      | 13                       | 26.00           | 5                        | 20.00           | 1                            | 1.34            |
| Middle     | 37                       | 74.00           | 20                       | 80.00           | 41                           | 54.66           |
| Old        | 0                        | 0.00            | 0                        | 0.00            | 33                           | 44.00           |
| Total      | 50                       | 100.00          | 25                       | 100.00          | 75                           | 100.00          |

The data presented in Table-8 relating to the distribution of listeners and non-listeners according to their age clearly shows that majority of farmers belong to middle aged in all the three groups. But no response was there from old farmers in listeners (RO and RA) while 44% was there from non-listeners. Young farmers were evenly distributed in RO and RA but only 1.34% was there in non-listeners group.

Table-9. Comparison of listeners (RO and RA) and non-listeners according to their mean age scores.

| Categories          | Mean scores | standard deviation | t - value         |
|---------------------|-------------|--------------------|-------------------|
| Listeners (RO)      | 33.38       | 6.57               | (RO-RA) 0.67 N.S. |
| Listeners (RA)      | 32.24       | 7.36               | (RO-NRO) 8.934*   |
| Non-listeners (NRO) | 48.14       | 10.34              | (RA-NRO) 7.066*   |

\* = significant at 5 percent level

N.S = Not significant

Though a significant difference was noticed between RO and NRO and between RA and NRO from the results presented in Table-9 regarding their mean age scores, there was no significant difference between the mean age scores of RO and RA.

B. Distribution and comparison of listeners (RO and RA) and non-listeners according to their level of education.

The data for distribution and comparison of listeners (RO and RA) and non-listeners according to their mean scores for education are presented in Table-10 and Table-11.

Table-10 Distribution of listeners (RO and RA) and non-listeners according to their educational level.

| Level of education       | Listeners(RO)<br>(N=50) |                 | Listeners(RA)<br>(N=25) |                 | Non-listeners(NRO)<br>(N=75) |                 |
|--------------------------|-------------------------|-----------------|-------------------------|-----------------|------------------------------|-----------------|
|                          | Freq-<br>uency          | Perce-<br>ntage | Freq-<br>uency          | perce-<br>ntage | Freq-<br>uency               | percen-<br>tage |
| Illiterate               | 4                       | 8.00            | 3                       | 12.00           | 29                           | 38.67           |
| can read only            | 4                       | 8.00            | 4                       | 16.00           | 10                           | 13.33           |
| Can read and write       | 18                      | 36.00           | 12                      | 48.00           | 20                           | 26.66           |
| Primary school and above | 24                      | 48.00           | 6                       | 24.00           | 16                           | 21.34           |
| Total                    | 50                      | 100.00          | 25                      | 100.00          | 75                           | 100.00          |

It is evidenced from an observation of Table-10 that majority of non-listeners were illiterate (38.67%) in contrast to RO (8%) and RA (12%)

In the listeners (RO) 48% were from primary school and above while in RA only 24% and 21.34% in non-listeners. Majority of listeners (RA-48%) were from can read and write.

Table-11. Comparison of listeners (RO and RA) and non-listeners according to their mean education scores.

| Categories          | Mean scores | Standard deviation | t - value           |
|---------------------|-------------|--------------------|---------------------|
| Listeners (RO)      | 2.52        | 1.26               | (RO-RA) 2.027*      |
| Listeners (RA)      | 1.92        | 1.05               | (RO-NRO) 4.647*     |
| Non-listeners (NRO) | 1.40        | 1.36               | (RA-NRO) 1.734 N.S. |

\* = Significant at 5 percent level of probability

N.S. = Not significant.

According to Table-11 it was noticed that there was a significant difference between RO and RA, and between RO and NRO with respect to their mean education scores, but no significant difference was there between RA and NRO. Thus from the Table-11 it is cleared that listeners (RO) belonged to higher educational level than RA and NRO.

C. Distribution and Comparison of listeners (RO and RA) and non-listeners according to their farm size.

For the distribution and comparison of listeners (RO and RA) and non-listeners on the basis of farm size, data are presented in Table-12 and Table-13.

Table-12 Distribution of listeners (RO and RA) and non-listeners according to their farm size.

| Farm size           | Listeners(RO)<br>(N=50) |                 | Listeners(RA)<br>(N=25) |                 | Non-listeners(NRO)<br>(N=75) |                 |
|---------------------|-------------------------|-----------------|-------------------------|-----------------|------------------------------|-----------------|
|                     | Freq-<br>uency          | Perce-<br>ntage | Freq-<br>uency          | Perce-<br>ntage | Freq-<br>uency               | Perce-<br>ntage |
| Marginal<br>Farmers | 26                      | 52.00           | 13                      | 52.00           | 44                           | 58.67           |
| Small Farmers       | 20                      | 40.00           | 4                       | 16.00           | 31                           | 41.33           |
| Big Farmers         | 4                       | 8.00            | 8                       | 32.00           | 0                            | 0.00            |
| Total               | 50                      | 100.00          | 25                      | 100.00          | 75                           | 100.00          |

A cursery view of the Table-12 shows that majority of listeners (RO-52%), (RA-52%) and non-listeners (58.67%) belonged to marginal farmer categories. Of the remaining 40% radio owners, 16% radio accessors, and 41.33% of non-listeners belonged to small farmer categories.

In the big farmer categories there were only 8% (RO) and 32% (RA).

Table-13 Comparison of listeners (RO and RA) and non-listeners according to their mean farm size scores.

| Categories          | Mean scores | Standard deviation | t- value          |
|---------------------|-------------|--------------------|-------------------|
| Listeners (RO)      | 1.56        | 0.64               | (RO-RA) 1.32 N.S. |
| Listeners (RA)      | 1.80        | 0.89               | (RO-NRO) 1.972*   |
| Non-listeners (NRO) | 1.34        | 0.59               | (RA-NRO) 2.92*    |

\* = Significant at 5 per cent level.

N.S.= Not significant.

A glance at Table-13 revealed that the listeners (RA) and (RO) possessed higher mean scores than non-listeners (NRO). The difference was found to be significant and hence it is evident that the listeners possessed more holdings than non-listeners.

But no significance difference was observed between RO and, RA and hence land ownership between them was in par.

D. Distribution and comparison of listeners (RO and RA) and non-listeners according to their sub-centre contact.

Data for the purpose of distribution and comparison of listeners (RO and RA) and non-listeners according to their sub-centre contact are presented in Table-14 and Table-15.

**Table-14 Distribution of listeners and non-listeners  
according to their sub-centre contact.**

| Sub-centre<br>contact | Listeners (RO)<br>(N=50) |                 | Listeners (RA)<br>(N=25) |                 | Non-listeners (NRO)<br>(N=75) |                 |
|-----------------------|--------------------------|-----------------|--------------------------|-----------------|-------------------------------|-----------------|
|                       | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency           | Perce-<br>ntage | Freq-<br>uency                | Perce-<br>ntage |
| Regular               | 8                        | 16.00           | 0                        | 0.00            | 0                             | 0.00            |
| Frequently            | 10                       | 20.00           | 9                        | 36.00           | 11                            | 14.67           |
| Rarely                | 24                       | 48.00           | 16                       | 64.00           | 38                            | 50.66           |
| Never                 | 8                        | 16.00           | 0                        | 0.00            | 26                            | 34.67           |
| <b>Total</b>          | <b>50</b>                | <b>100.00</b>   | <b>25</b>                | <b>100.00</b>   | <b>75</b>                     | <b>100.00</b>   |

An examination of the Table-14 shows that majority of RO (48%), RA (64%) & NRO (50.66%) had rarely exposure to sub-centre. Only 16% of RO were regular in sub-centre contact, while 20% of RO, 36% RA and 14.67% NRO were from frequent contact to sub-centre. Only 16% of RO and 34.67% of NRO never visited to sub-centre.



Table-15 Comparison of listeners (RO and RA) and non-listeners according to their mean sub-centre contact scores.

| Categories          | Mean scores | standard deviation | t - value         |
|---------------------|-------------|--------------------|-------------------|
| Listeners (RO)      | 1.36        | 0.93               | (RO-RA) 0.00 N.S. |
| Listeners (RA)      | 1.36        | 0.48               | (RO-NRO) 3.899 *  |
| Non listeners (NRO) | 0.80        | 0.67               | (RA-NRO) 3.835 *  |

\* = Significant at 5 percent level

N.S. = Not significant.

As seen in table-15, evidenced a wide gap between the mean scores for sub-centre contact of listeners (RO and RA) and non-listeners. The computed t - value also indicated a significant difference between them with respect to their sub-centre contact.

Hence it is clear that listeners have more contact to sub-centre than non-listeners.

E. Distribution and comparison of listeners (RO and RA) and non-listeners according to scientific orientation.

The distribution and mean scores for scientific orientation of listeners and non-listeners are presented in Table-16 and Table-17.

Table-16 Distribution of listeners (RO & RA) and non-listeners according to their level of scientific orientation.

| Scientific Orientation | Listeners (RO) (N=50) |              | Listeners (RA) (N=25) |              | Non-listeners (NRO) (N=75) |              |
|------------------------|-----------------------|--------------|-----------------------|--------------|----------------------------|--------------|
|                        | Freq- uency           | Perce- ntage | Freq- uency           | Perce- ntage | Freq- uency                | percen- tage |
| Low                    | 10                    | 20.00        | 10                    | 40.00        | 25                         | 33.34        |
| Medium                 | 25                    | 50.00        | 4                     | 16.00        | 26                         | 34.66        |
| High                   | 15                    | 30.00        | 11                    | 44.00        | 24                         | 32.00        |
| Total                  | 50                    | 100.00       | 25                    | 100.00       | 75                         | 100.00       |

It is evident from Table-16 that 30% of RO 44% of RA and 32% of NRO had high scientific orientation. While 50%, RO, 16% RA and 34.66% NRO had medium scientific orientation. Only 20% RO, 40% RA and 33.34% NRO had low scientific orientation.

Table-17 Comparison of listeners and non-listeners according to their mean scientific orientation scores.

| Categories          | Mean scores | standard deviation | t - value          |
|---------------------|-------------|--------------------|--------------------|
| Listeners (RO)      | 28.30       | 2.87               | (RO-RA) 0.862 N.S. |
| Listeners (RA)      | 29.24       | 6.48               | (RO-NRO)9.479 *    |
| Non-listeners (NRO) | 20.84       | 5.03               | (RA-NRO)6.656 *    |

\* = Significant at 5 per cent level of probability

N.S.= Not significant.

The data in Table-17 revealed that the mean scores for scientific orientation of listeners (RO) was (28.30), of listeners (RA) was 29.24 and of non-listeners was 20-84. The table clearly indicates that the mean scores for scientific orientation of listeners (RO and RA) were significantly higher than that of non-listener group. The difference was substantiated by t- value revealing significant difference between listeners (RO & RA) and non-listeners.

But no significant difference was observed with in the listeners (RO and RA) with respect to their mean scores for scientific orientation. The results made it clear that listeners (RO and RA) are more scientific oriented than non-listeners.

F. Distribution and Comparison of listeners (RO & RA) and non-listeners according to innovation proneness.

The distribution and the mean scores of listeners and non-listeners according to innovation proneness are presented in Table-18 and Table-19.

Table-18. Distribution of listeners and non listeners according to their level of innovation proneness.

| Level of innovation proneness | Listeners(RO)<br>(N=50) |                 | Listeners(RA)<br>(N=25) |                 | Non-listeners(NRO)<br>(N=75) |                 |
|-------------------------------|-------------------------|-----------------|-------------------------|-----------------|------------------------------|-----------------|
|                               | Freq-<br>uency          | perce-<br>ntage | Freq-<br>uency          | Perce-<br>ntage | Freq-<br>uency               | Perce-<br>ntage |
| Low                           | 17                      | 34.00           | 8                       | 32.00           | 41                           | 54.67           |
| Medium                        | 12                      | 24.00           | 7                       | 28.00           | 11                           | 14.66           |
| High                          | 21                      | 42.00           | 10                      | 40.00           | 23                           | 30.67           |
| Total                         | 50                      | 100.00          | 25                      | 100.00          | 75                           | 100.00          |

An examination of Table-18 shows that listeners and non-listeners were more or less equally distributed with their level of innovation proneness. In case of listeners (RO) and (RA) there was not so difference in the distribution in their innovation proneness. However 24% RO and 32% RA belonged to low level, 24% RO, and 28% RA to medium level and the remaining 42% RO, and 40% RA to high level.

But 54.67% low level, 14.66% medium and only 30.67% high level were noticed in non-listeners.

Table-19 Comparison of listeners (RO and RA) and non-listeners according to their mean innovation proneness scores.

| Categories          | Mean scores | Standard deviation | t - value       |
|---------------------|-------------|--------------------|-----------------|
| Listeners (RO)      | 1.83        | 0.49               | (RO-RA) 0.416*  |
| Listeners (RA)      | 1.18        | 0.48               | (RO-NRO) 7.39*  |
| Non-listeners (NRO) | 0.63        | 0.28               | (RA-NRO) 6.935* |

\* = Significant at 5 per cent level of probability

The data in Table-19 indicates that the listeners (RO) were significantly higher in innovation proneness followed by listeners (RA) and non-listeners. The difference was substantiated by t - value.

G. Distribution and comparison of listeners (RO & RA) and non-listeners according to social participation.

The data regarding the membership in organization are presented in Table-20.

Table-20 Distribution listeners (RO and RA) and non-listeners according to social participation.

| Social participation                        | Listeners(RO) (N=50) |                | Listeners(RA) N=25 |                | Non-listeners(NRO) N=75 |                 |
|---------------------------------------------|----------------------|----------------|--------------------|----------------|-------------------------|-----------------|
|                                             | Frequ-<br>ency       | Perc-<br>ntage | Freq-<br>uency     | Perc-<br>ntage | Freq-<br>uency          | Perce-<br>ntage |
| Non-member                                  | 20                   | 40.00          | 8                  | 32.00          | 27                      | 36.00           |
| Membership in one organi-<br>zation         | 17                   | 34.00          | 12                 | 48.00          | 22                      | 29.34           |
| Membership in more than one<br>organization | 13                   | 26.00          | 5                  | 20.00          | 26                      | 34.66           |
| Total                                       | 50                   | 100.00         | 25                 | 100.00         | 75                      | 100.00          |

Data in the Table-20 revealed that only 40% RO, 32% RA and 36% non-listeners were nonmember in social, organization whereas 34% RO, 48% RA and 29.34% nonlisteners possessed membership in one organization.

Remaining 26% RO, 20% RA and 34.66% non-listeners participated in more than one social organization as a member.

Table-21 Comparison of listeners (RO & RA) and non-listeners according to their mean social participation scores.

| Categories          | Mean scores | standard deviation | t - value         |
|---------------------|-------------|--------------------|-------------------|
| Listeners (RO)      | 0.86        | 0.80               | (RO-RA).104 N.S.  |
| Listeners (RA)      | 0.88        | 0.71               | (RO-NRO).795 N.S. |
| Non-listeners (NRO) | 0.98        | 0.84               | (RA-NRO).531 N.S. |

N.S. = Not significant

The above table revealed that there was no significance difference between the cumulative scores of listeners (RO) and (RA) and non-listeners, and no significance difference was also noticed within the listeners groups.

Hence it is evidenced that all the three groups equally participated in social organizations.

### III. Inter-correlation of dependent variables.

In order to find out the inter relationship of the three dependent variables included in the study, intercorrelation analysis was employed. Inter-relationship of the dependent variables are presented in Table-22.

Table-22 Inter correlation matrix of dependent variables of listeners (RO & RA) and non-listeners.

| Variables                   | Listeners (RO) |                |                | Listeners (RA) |                |                | Non-listeners (NRO) |                |                |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|----------------|----------------|
|                             | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | Y <sub>1</sub>      | Y <sub>2</sub> | Y <sub>3</sub> |
| Knowledge (Y <sub>1</sub> ) | 1              | .276           | .411*          | 1              | .662*          | .318           | 1                   | .366*          | .580*          |
| Attitude (Y <sub>2</sub> )  |                | 1              | -.176          |                | 1              | .114           |                     | 1              | .221           |
| Adoption (Y <sub>3</sub> )  |                |                | 1              |                |                | 1              |                     |                | 1              |

\* = significant at 5 percent level of probability

Table-22 shows that inter relationship between knowledge and extent of adoption in listeners (RO) was positive and significant.

In case of listeners (RA), knowledge and attitude was positively and significantly correlated while knowledge and adoption showed only positive relation.

In non-listeners knowledge was positively and significantly correlated with attitude and adoption but attitude showed only positive relationship with adoption.



IV. Correlation between dependent variables and independent and intervening variables of listeners (RO & RA) and non-listeners.

A. Correlation between knowledge and independent variables and intervening variable of listeners (RO & RA) and non-listeners.

The relationship between knowledge of listeners and non-listeners with other characteristics are presented in Table-23.

Table-23 Correlation between knowledge and independent variables and intervening variable of listeners (RO & RA) and non listeners.

| Variables              | Correlation Co-efficient ('r' Value) |        |        |
|------------------------|--------------------------------------|--------|--------|
|                        | RO                                   | RA     | NRO    |
| Age                    | -.0924                               | .0968  | -.2007 |
| Education              | .2379                                | -.1373 | .6071* |
| Farm size              | .0856                                | .3466* | .1852  |
| Sub-centre contact     | .3045*                               | .0237  | .2906* |
| Scientific Orientation | .3846*                               | .6600* | .5864* |
| Innovation proneness   | .4918*                               | -.0074 | .2756* |
| Social participation   | .1331                                | .5508* | .1454  |
| Radio ownership        | -.0630                               | -      | -      |
| Radio accessibility    | -                                    | -.0998 | -      |
| Listening behaviour    | .4170*                               | .3623* | -      |

\* = significant at 5 per cent level of probability.

Table-23 reveals that in the case of listeners (RO), the correlation co-efficients 'r' showed significant and positive correlation for sub centre contact, scientific orientation, innovation proneness and listening behaviour with knowledge.

In case of listeners (RA), scientific orientation, social participation and listening behaviour were significantly and positively correlated with knowledge.

But it is interesting to note that in case of non-listeners, education, sub-centre contact, scientific orientation and innovation proneness were significantly and positively correlated with knowledge.

Where as in the case of listeners (RA) their scientific orientation, social participation and listening behaviour seems to influence them to go to their neighbouring RO and listen the farm broadcasts. Though not significant radio ownership seems to have negative relationship with regard to their listening of farm broadcasts.

B. Correlation between attitude and independent variables and intervening variable of listeners (RO & RA) and non-listeners.

The relationship between the attitude and characteristics of listeners and non-listeners was worked out by computing the correlation co-efficient. The results of correlation analysis are presented in Table-24.

Table-24 Correlation between attitude and independent variables, and intervening variables of listeners (RO & RA) and non-listeners.

| Variables              | Co-rrelation co-efficient (rvalue) |         |         |
|------------------------|------------------------------------|---------|---------|
|                        | RO                                 | RA      | NRO     |
| Age                    | .2127                              | -.2151  | -.1782  |
| Education              | -.2939 *                           | .3114   | .0408   |
| Farm size              | .2291                              | .0501   | -.0945  |
| Sub-centre contact     | .1978                              | .2632   | -.1216  |
| Scientific orientation | .1342                              | .6307 * | .2244   |
| Innovation proneness   | .2866 *                            | .1951   | .2625 * |
| Social participation   | .2634                              | .3291   | .1915   |
| Radio ownership        | -.1215                             | -       | -       |
| Radio accessibility    | -                                  | -.1683  | -       |
| Listening behaviour    | .0855                              | .1227   | -       |

\* = Significant at 5 percent level of probability

The computed 'r' value as per Table-24 revealed that in case of listeners (RO) education was negatively and

significantly correlated with their attitude whereas innovation proneness was positively and significantly correlated with their attitude. Among the other variables though not significant radio ownership showed negative relation with their attitude towards farm broadcasts.

Similarly though not significant, age and radio accessibility showed negative relation with attitude of RA. Their scientific orientation was significantly and positively related with their attitude.

In the case of non-listeners only their innovation proneness was positively and significantly correlated with their attitude whereas though not significant age, farm size and sub-centre contact showed negative relation with their attitude towards farm broadcast.

It is interesting to note that innovation proneness of both listeners (RO) and non-listeners were proved to be equally related in terms of their attitude towards farm broadcast.

C. Correlation between extent of adoption and independent variables and intervening variable of listeners (RO and RA) and non-listeners.

The relationship of extent of adoption with independent and intervening variables of listeners (RO & RA) and non-listeners are presented in Table-25.

Table-25 Correlation between extent of adoption and independent variables, and intervening variable of listeners (RO & RA) and non-listeners.

| Variables              | Co-rrelation Co-efficient ('r' value) |        |         |
|------------------------|---------------------------------------|--------|---------|
|                        | RO                                    | RA     | NRO     |
| Age                    | -.4192*                               | -.2461 | -.2342* |
| Education              | .3434*                                | .2107  | .4877*  |
| Farm size              | .3230*                                | .5266* | .2421*  |
| Sub-centre contact     | .4078*                                | .1659  | .2854*  |
| Scientific orientation | .1956                                 | .4402* | .6326*  |
| Innovation proneness   | .3800*                                | .0553  | .4161*  |
| Social participation   | .4755*                                | .2472  | -.0768  |
| Radio ownership        | .3289*                                | -      | -       |
| Radio accessibility    | -                                     | -.0818 | -       |
| Listening behaviour    | .3147                                 | -.1123 | -       |

\* = Significant at 5 per cent level of probability.

The computed 'r' values in Table-24 revealed that all the characteristics except age and scientific orientation were having positive and significant relationship with extent of adoption by listeners (RO). But their age was found to be negatively and significantly correlated with their extent of adoption.

In the case of listeners (RA) only two characters namely farm size, and scientific orientation were positively and significantly correlated with their extent of adoption. A negative relation was also observed between their age, radio accessibility, and listening behaviour with their extent of adoption.

In non-listeners (NRO), all characters except social participation were significantly correlated with extent of adoption while age showed negative significant relation with adoption.

V. Relationship amongst the independent variables and the intervening variable.

To find out the relationship between the independent variables included in the study, inter correlation analysis was done. Inter relationship of the independent variables amongst the listeners (RO and RA) and non-listeners are presented in Table-26, Table-27, and Table-28 respectively.

Table-26. Relationship amongst the independent and intervening variables of listeners (RO).

|                | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X <sub>4</sub> | X <sub>5</sub> | X <sub>6</sub> | X <sub>7</sub> | X <sub>8</sub> | X <sub>9</sub> |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| X <sub>1</sub> | 1              | -.3594*        | -.0026         | -.2962*        | -.1215         | -.1754         | .0329          | -.2290         | -.0701         |
| X <sub>2</sub> |                | 1              | .1399          | .4839*         | .3852*         | .1723          | -.0858         | .2009          | .6517*         |
| X <sub>3</sub> |                |                | 1              | .7658*         | .2264          | .0649          | .5139*         | .6547*         | .0082          |
| X <sub>4</sub> |                |                |                | 1              | .3627*         | .4308*         | .5229*         | .6230*         | .2303*         |
| X <sub>5</sub> |                |                |                |                | 1              | .2958*         | .2427          | -.0890         | .5894*         |
| X <sub>6</sub> |                |                |                |                |                | 1              | .3288*         | .2000          | .4379*         |
| X <sub>7</sub> |                |                |                |                |                |                | 1              | .5152*         | -.1106         |
| X <sub>8</sub> |                |                |                |                |                |                |                | 1              | .0697          |
| X <sub>9</sub> |                |                |                |                |                |                |                |                | 1              |

\* = Significant at 5 per cent level of probability

X<sub>1</sub> = Age

X<sub>2</sub> = Education

X<sub>3</sub> = Farm size

X<sub>4</sub> = Sub-centre contact

X<sub>5</sub> = Scientific orientation

X<sub>6</sub> = Innovation proneness

X<sub>7</sub> = Social participation

X<sub>8</sub> = Radio ownership

X<sub>9</sub> = Listening behaviour

A glance at Table-26 revealed that in case of listeners, (RO) though not significant age had negative relationship with all the characteristics except social participation. The relationship between age and education was significantly negative. The relationship with sub-centre contact, scientific orientation and listening behaviour was significant with the listeners' (RO) educational status.

It was also seen that farm size though not significant had positive relation with all the independent characters studied but the relationship of listeners with sub-centre contact, social participation and radio ownership was significant.

The relationship of sub-centre contact with all the independent characters namely scientific orientation, innovation proneness, social participation, radio ownership and listening behaviour was significant and positive amongst the listeners owning the radio.

Scientific orientation of owner listeners was positively and significantly related with their innovation proneness and listening behaviour. Though not significant, scientific orientation was negatively related to social participation and radio ownership.



Innovation proneness was positively and significantly related with social participation and listening behaviour. Though not significant, innovation proneness showed positive relation with radio ownership.

Social participation had positive and significant relation with radio ownership.

Ownership of radio had positive relation with the listening behaviour of farmer listeners.

Table-27 Relationship amongst the independent and intervening variables of listeners (RA).

|       | $X_1$ | $X_2$   | $X_3$   | $X_4$   | $X_5$   | $X_6$  | $X_7$  | $X_8$   | $X_9$   |
|-------|-------|---------|---------|---------|---------|--------|--------|---------|---------|
| $X_1$ | 1     | -.4692* | -.4028* | -.6759* | -.4566* | -.1603 | -.0684 | .4116*  | .5910*  |
| $X_2$ |       | 1       | .1101   | .3727   | .2600   | -.2362 | .2537  | -.0023  | .0014   |
| $X_3$ |       |         | 1       | .3540   | .3877   | -.3150 | .5912* | -.0419  | -.1347  |
| $X_4$ |       |         |         | 1       | .2936   | .3816  | .0093  | -.4322* | -.5665* |
| $X_5$ |       |         |         |         | 1       | .1324  | .4141* | -.2495  | .0977   |
| $X_6$ |       |         |         |         |         | 1      | -.3205 | -.0996  | -.3501  |
| $X_7$ |       |         |         |         |         |        | 1      | .3902   | .4571*  |
| $X_8$ |       |         |         |         |         |        |        | 1       | .2532   |
| $X_9$ |       |         |         |         |         |        |        |         | 1       |

\* = Significant at 5 per cent level of probability

$X_1$  = Age

$X_2$  = Education

$X_3$  = Farm size

$X_4$  = Sub centre contact

$X_5$  = Scientific orientation

$X_6$  = Innovation proneness

$X_7$  = Social participation

$X_8$  = Radio accessibility

$X_9$  = Listening behaviour

Table-27 revealed that education, farm size, sub-centre contact and scientific orientation had negatively significant relationship with age of the listeners (RA) whereas radio ownership and listening behaviour were positively significant in their relationship with age of listeners (RA). But the relation of innovation proneness and social participation though not significant evidenced negative trend with age of listeners (RA).

No characteristics were significantly correlated with education yet though not significant innovation proneness and radio accessibility showed negative relation with the level of education of listeners (RA).

Table revealed that farm size had positive and significant relation with social participation but though not significant, innovation proneness, radio accessibility and listening behaviour showed negative relation with farm size.

Sub-centre contact had significantly negative influence with radio accessibility and listening behaviour of the listeners (RA). But though not significant, it had positive relation with regard to scientific orientation and innovation proneness.

Scientific orientation of the listeners (RA) had significantly positive relation with social participation but insignificant negative relation with radio accessibility.

Innovation proneness had negative but not significant relationship with social participation, radio accessibility and listening behaviour of listeners (RA).

Social participation had positive and significant correlation with listening behaviour and positive trend of relationship but insignificant with radio accessibility.

Though not significant, positive relation was observed between radio accessibility and listening behaviour of the listeners (RA).

Table-28 Relationship amongst the independent variables of non-listeners (NRO).

|       | $X_1$ | $X_2$   | $X_3$  | $X_4$  | $X_5$   | $X_6$   | $X_7$  |
|-------|-------|---------|--------|--------|---------|---------|--------|
| $X_1$ | 1     | -.3283* | .2912* | -.0154 | -.4346* | -.4854* | -.0320 |
| $X_2$ |       | 1       | .1073  | .4058* | .4976*  | .3402*  | .0975  |
| $X_3$ |       |         | 1      | .3367* | .1816   | .1112   | -.0437 |
| $X_4$ |       |         |        | 1      | .2933*  | .1551   | .3251* |
| $X_5$ |       |         |        |        | 1       | .4345*  | .1160  |
| $X_6$ |       |         |        |        |         | 1       | .0575  |
| $X_7$ |       |         |        |        |         |         | 1      |

\* = Significant at 5 per cent level of probability

$X_1$  = Age

$X_4$  = Sub-centre contact

$X_2$  = Education

$X_5$  = Scientific orientation

$X_3$  = Farm size

$X_6$  = Innovation proneness

$X_7$  = Social participation

Table-28 gives clear indication that the age of non-listeners had positive and significant relation with farm size. But had negative and significant correlation with education, scientific orientation, and innovation proneness.

Though not significant, a negative influence was observed between age and social participation as well as sub-centre contact of non-listeners.

Sub-centre contact, innovation proneness, scientific orientation were positively and significantly correlated with education of non-listeners. But the association of farm size and social participation with education was not significant.

Result evidenced positive and significant relationship between farm size and sub-centre contact, but scientific orientation and innovation proneness had no significant relation with farm size.

Scientific orientation and listening behaviour had positive and significant relationship with sub-centre contact of the non-listeners.

A positive and significant relation was also observed between innovation proneness and scientific orientation of non-listeners.

Significant relationship did not exist between innovation proneness and social participation of the non-listeners.

VI. Path analysis of dependent variables with correlated independent variables and intervening variable of listeners (RO & RA) and non-listeners.

Since certain independent variables were found to be significantly correlated with knowledge, attitude and extent of adoption of listeners (RO & RA) and non-listeners. Path co-efficient analysis has been taken up to understand the contribution of these independent variables directly and indirectly on the dependent variables.

For working out the path co-efficient analysis following 9 independent variables and one intervening variable were selected.

1. Age
2. Education
3. Farm size
4. Sub-centre contact
5. Scientific orientation
6. Innovation proneness
7. Social participation
8. Radio ownership
9. Radio accessibility
10. Listening behaviour (Intervening variable)

A. Path analysis of knowledge, attitude, and extent of adoption of listeners (RO).

1. Path co-efficient analysis of knowledge of listeners (RO)

Path analysis of knowledge of listeners (RO) has performed by taking the independent variables  $X_2$ ,  $X_4$ ,  $X_5$ ,  $X_6$  and  $X_7$  and intervening variable  $X_{10}$ . The path analysis helped to analyse the factors which directly and indirectly influenced the knowledge. The results are presented in Table-29.

Table-29. Direct and indirect effects of independent variables on knowledge of listeners (RO).

|          | $X_2$        | $X_4$        | $X_5$        | $X_6$        | $X_7$        | $X_{10}$      | correlation with knowledge |
|----------|--------------|--------------|--------------|--------------|--------------|---------------|----------------------------|
| $X_2$    | <u>.0204</u> | .0096        | .0884        | .0573        | -.0091       | .0995         | .2379                      |
| $X_4$    | .0098        | <u>.0200</u> | .0832        | .1434        | .0841        | .0320         | .3045*                     |
| $X_5$    | .0078        | .0072        | <u>.2296</u> | .0985        | -.0259       | .0919         | .3846*                     |
| $X_6$    | .0035        | .0086        | .0679        | <u>.3330</u> | .0351        | .0608         | .4918*                     |
| $X_7$    | -.0017       | .0104        | -.0557       | .1095        | <u>.1069</u> | -.0153        | .1331                      |
| $X_{10}$ | .0133        | .0046        | .1353        | .1458        | -.0118       | <u>0.1389</u> | .4170*                     |

N.8:- The under lined figures show direct effect, others show indirect effect.

\* = Significant at 5 per cent level

$X_2$  = Education

$X_6$  = Innovation proneness

$X_4$  = Sub-centre contact

$X_7$  = Social participation

$X_5$  = Scientific orientation

$X_{10}$  = Listening behaviour

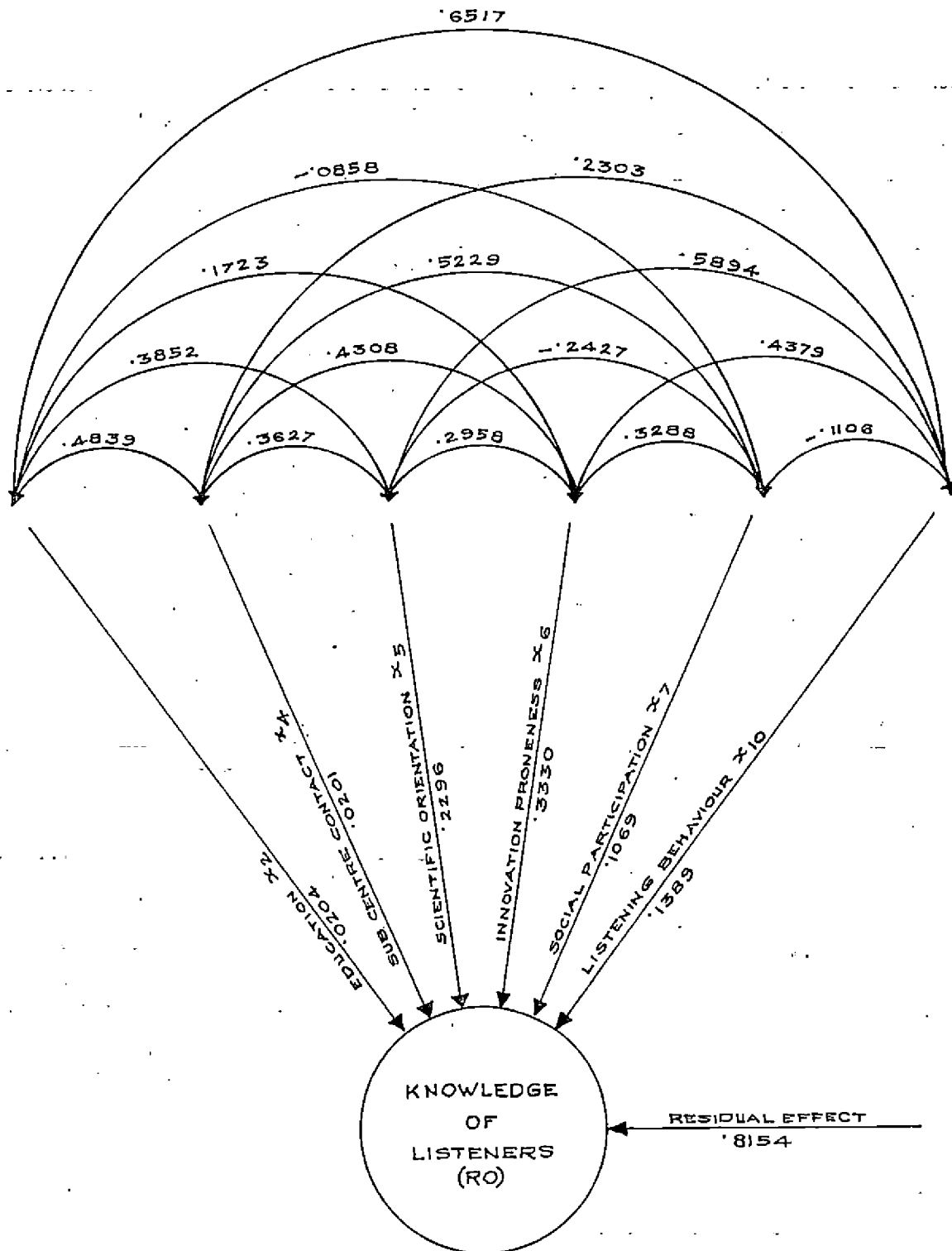


From Table-29 it could be seen that the maximum direct effect was observed for innovation proneness (.33) followed by scientific orientation (.22). The correlation of innovation proneness with knowledge was .49, though its direct effects was .33. This increase in correlation was due to the indirect effect of innovation proneness through education, sub-centre contact, scientific orientation, social participation and listening behaviour. The indirect effects of education and sub-centre contact were negligible while scientific orientation and listening behaviour contributed equally.

Maximum indirect effects were observed for innovation proneness followed by listening behaviour while social participation influenced knowledge through negative indirect effects and sub-centre contact influenced with positive indirect effect.

The correlation of scientific orientation with knowledge of RO was .36 and its direct effect was only .22. This increase in correlation was due the positive indirect effect of scientific orientation through listening behaviour and innovation proneness.

FIG. 4. PATH ANALYSIS AND CORRELATION STUDIES ON KNOWLEDGE OF LISTENERS (RO).



The direct effect of listening behaviour was only 0.13. Seventy per cent positive indirect effect was contributed through scientific orientation and innovation proneness.

Path diagram is presented herewith in Fig.4.

## 2. Path co-efficient analysis of attitude of listeners (RO)

Path analysis of attitude of listeners (RO) was done by taking independent variables  $X_2$ ,  $X_5$  and  $X_6$ . The results are presented in Table-30.

Table-30. Direct and indirect effects of independent variables on attitude of listeners (RO).

|       | $X_2$         | $X_5$        | $X_6$        | correlation with attitude |
|-------|---------------|--------------|--------------|---------------------------|
| $X_2$ | <u>-.4263</u> | .0810        | .0513        | -.2939*                   |
| $X_5$ | -.1642        | <u>.2103</u> | .0981        | .1342                     |
| $X_6$ | -.0734        | .0622        | <u>.2978</u> | .2866*                    |

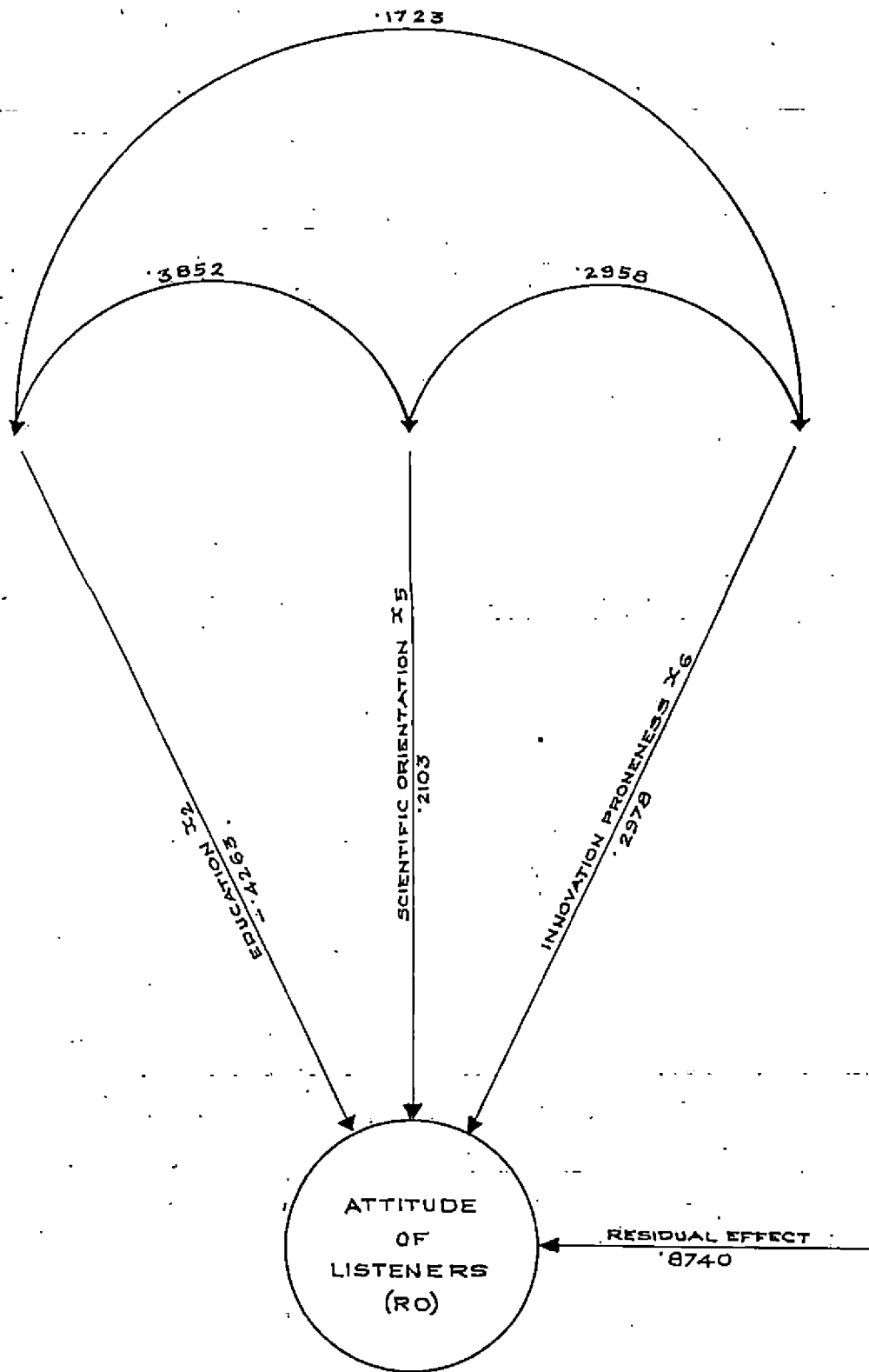
N.B:- The under lined figures show direct effect, others show indirect effect.

\* = significant at 5 per cent level

$X_2$  = Education,  $X_5$  = Scientific orientation

$X_6$  = Innovation proneness.

FIG. 5. PATH ANALYSIS AND CORRELATION STUDIES ON ATTITUDE OF LISTENERS (RO).



From Table-30, it could be seen that maximum negative direct effect was observed for education (-.42) and positive direct effect for innovation proneness (.29). The correlation of education with attitude was (-.29). The decrease in negative correlation was due to the positive indirect effect of education through scientific orientation and innovation proneness. Scientific orientation and innovation proneness influenced the attitude of listeners (RO) directly and substantially.

Path diagram is presented herewith in fig.5.

3. Path co-efficient analysis of extent of adoption by farmers listeners (RO).

Path co-efficient analysis of extent of adoption by the farmers listeners (RO) was performed by taking the variables  $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$ ,  $X_5$ ,  $X_6$ ,  $X_7$ ,  $X_8$  and  $X_{10}$ . The results are presented in Table-31.

Table-31. Direct and indirect effects of independent variables on extent of adoption by listeners (RO).

|          | $X_1$         | $X_2$        | $X_3$        | $X_4$          | $X_5$        | $X_6$        | $X_7$        | $X_8$        | $X_{10}$      | Correlation with adoption |
|----------|---------------|--------------|--------------|----------------|--------------|--------------|--------------|--------------|---------------|---------------------------|
| $X_1$    | <u>-.4933</u> | -.2162       | -.0017       | .3396          | -.0331       | -.0618       | .0259        | -.0211       | .0079         | -.4192*                   |
| $X_2$    | .1773         | <u>.6014</u> | .0938        | .5803          | .1208        | .0607        | -.0677       | .0185        | -.0742        | .3434*                    |
| $X_3$    | .0013         | .0841        | <u>.6705</u> | -.8709         | .0710        | .0223        | .4052        | .0603        | -.0009        | .3230*                    |
| $X_4$    | .1461         | .2910        | .5135        | <u>-1.1371</u> | .1137        | .1518        | .4123        | .0574        | -.0262        | .4078*                    |
| $X_5$    | .0599         | .2317        | .1518        | -.4124         | <u>.3137</u> | .1042        | -.1914       | -.0082       | -.0671        | .1986                     |
| $X_6$    | .0865         | .1036        | .0435        | -.4899         | .0928        | <u>.3524</u> | .2593        | .0184        | -.0498        | .3800*                    |
| $X_7$    | -.0162        | -.0516       | .3446        | -.5946         | -.0761       | .1159        | <u>.7885</u> | .0474        | .0126         | .4755*                    |
| $X_8$    | .1129         | .1208        | .4330        | -.7085         | -.0279       | .0704        | .4063        | <u>.0921</u> | .0079         | .3289*                    |
| $X_{10}$ | .0346         | .3920        | .0055        | -.2619         | .1849        | .1543        | -.0872       | -.0064       | <u>-.1139</u> | .3147*                    |

N.B:- The under lined figures show direct effect  
others figures show indirect effect

\* = significant at 5 per cent level

|       |                          |          |                        |
|-------|--------------------------|----------|------------------------|
| $X_1$ | = Age                    | $X_6$    | = Innovation proneness |
| $X_2$ | = Education              | $X_7$    | = Social participation |
| $X_3$ | = Farm size              | $X_8$    | = Radio ownership      |
| $X_4$ | = Sub-centre contact     | $X_{10}$ | = Listening behaviour  |
| $X_5$ | = Scientific orientation |          |                        |

From Table-31 it was clear that maximum negative direct effects was observed for sub-centre contact behaviour (-1.13) and positive for social participation (.78). The correlation of sub-centre contact with extent of adoption was .40. The increase in correlation was due the positive indirect effect of sub-centre contact through age, education, farm size, scientific orientation, innovation proneness and social participation.

The direct effects of social participation was .78 but the correlation with adoption was .47. The decrease in correlation was due to negative indirect effects of social participation through age, education, sub-centre contact and scientific orientation. The indirect effect through farm size and innovation proneness were positive.

The direct effect of age was -.48 but the correlation with adoption was -.4192, ie age influenced adoption with negative indirect effect.

The direct effect of education was .60 but the correlation with adoption .34. The decrease in correlation was due to the negative indirect effect vide sub-centre contact, social participation and listening behaviour. The indirect effects vide age and innovation proneness were 0.17 and 0.12 respectively.

The direct effect of farm size was .60 but the correlation with adoption was .34. The reduction in correlation was due to negative indirect effects *vide* sub-centre contact. The indirect effect *vide* social participation was .40. The indirect effect through other characters under study were negligible.

A negative indirect effect (-1.137) was observed for sub-centre contact and the correlation with adoption was .40. The drastic increase in correlation was due to its positive indirect effect through all the characters except listening behaviour.

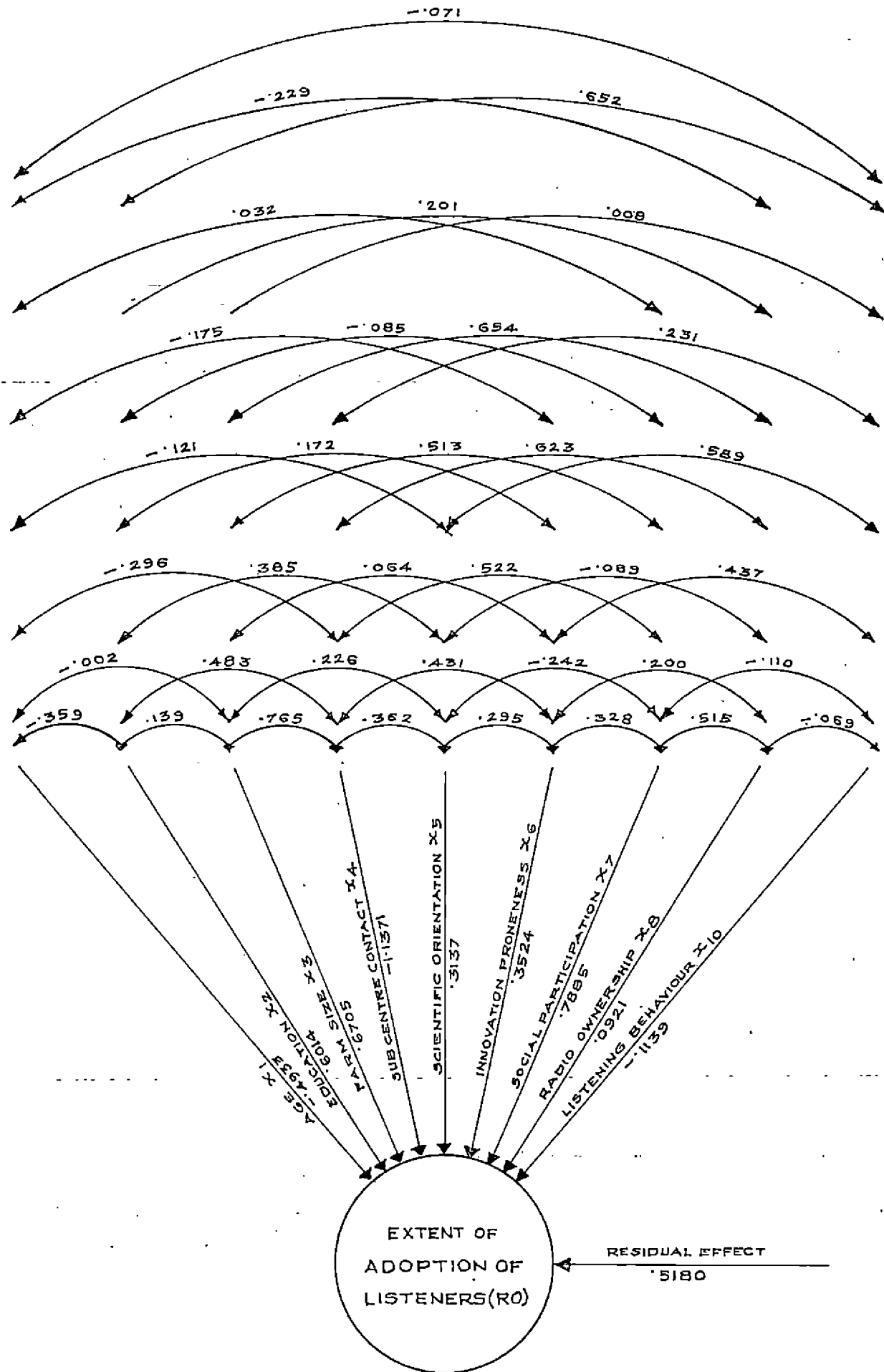
Innovation proneness influenced adoption directly as its direct effect was .35 and correlation with adoption was .38. The slight increase in correlation was due to the negative indirect effect *via* sub centre contact and listening behaviour.

The direct effect of radioownership negligible while its correlation with adoption was (.32) significant. The increase in correlation was due to its positive indirect effect through farm size and social participation.

Listening behaviour influenced adoption with negative direct effect (-.11) while its correlation with adoption was significant (.31). The increase in correlation may be due to the negative indirect effects *viz* sub-centre contact and



FIG. 6. PATH ANALYSIS AND CORRELATION STUDIES ON EXTENT OF ADOPTION OF LISTENERS (RO).



social participation. The indirect effects through other characters were positive except radio ownership which was negligible. Path diagram is presented herewith in fig.6.

B. Path analysis of knowledge, attitude and extent of adoption of listeners (RA).

1. Path co-efficient analysis of knowledge of listeners (RA).

Path co-efficient analysis of knowledge of listeners (RA) was performed by taking the characters  $X_2$ ,  $X_4$ ,  $X_5$ ,  $X_6$ ,  $X_7$  and  $X_{10}$ . The results are presented in Table-32.

Table-32. Direct and indirect effects of independent and intervening variables on knowledge of listeners (RA).

|          | $X_2$         | $X_4$        | $X_5$        | $X_6$        | $X_7$        | $X_{10}$     | Correlation with knowledge |
|----------|---------------|--------------|--------------|--------------|--------------|--------------|----------------------------|
| $X_2$    | <u>-.4638</u> | .0791        | .1547        | -.0226       | .0668        | .0031        | -.1371                     |
| $X_4$    | -.1728        | <u>.2122</u> | .1747        | .0365        | .0024        | -.1561       | .0237                      |
| $X_5$    | -.1206        | .0623        | <u>.5950</u> | .0126        | .1090        | .2503        | .6600*                     |
| $X_6$    | .1095         | .0810        | .0787        | <u>.0958</u> | -.0844       | -.0965       | -.0074                     |
| $X_7$    | -.1176        | .0019        | .2464        | -.0307       | <u>.2632</u> | .1261        | .5508*                     |
| $X_{10}$ | -.0052        | -.1202       | .0581        | .0335        | .1203        | <u>.2758</u> | .3623*                     |

N.B: The under lined figures show direct effect others show indirect effect.

\* = significant at 5 per cent level

$X_2$  = Education

$X_4$  = Sub-centre contact

$X_6$  = Innovation proneness

$X_{10}$  = Listening behaviour.

$X_5$  = Scientific orientation

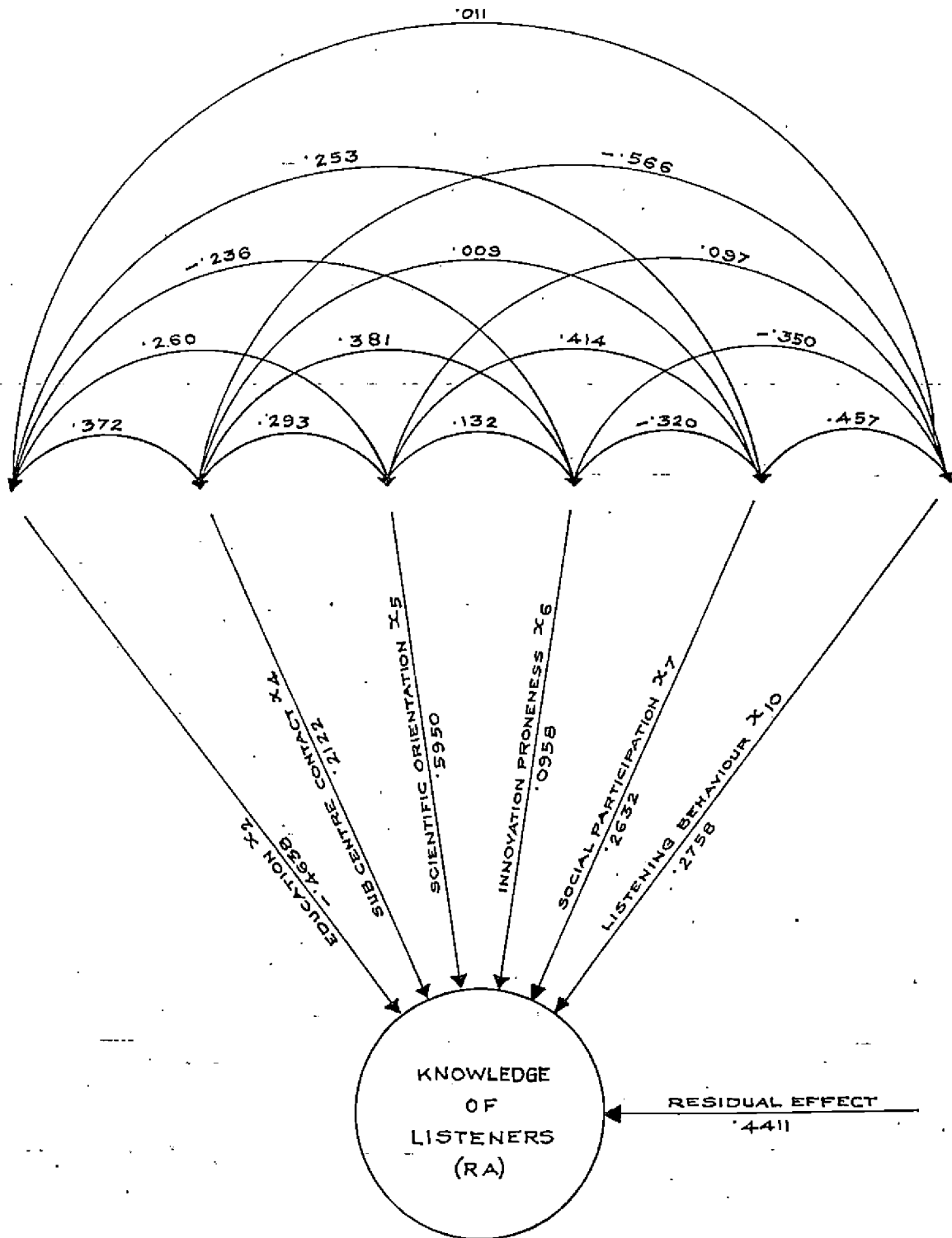
$X_7$  = Social participation

Table-32 revealed that the maximum direct effect was observed for scientific orientation (.59) followed by listening behaviour (.27). The direct effect of education was negative (-.46). The direct effects of innovation proneness and social participation were found to be positive (.09, .26). But the direct effect of sub-centre contact was 0.2%.

The correlation of adoption with scientific orientation was .66. The slight increase in correlation co-efficient was due to the positive indirect effect through listening behaviour (.25). The indirect effect through education was negative (-.12), but through social participation was positive.

The correlation of listening behaviour with adoption was (.36), while its direct effect was (.27). The slightly increase in correlation was due to the indirect effect of listening behaviour through social participation. The indirect effects through education and sub-centre contact were negative while through scientific orientation and innovation proneness were negligible.

FIG. 7. PATH ANALYSIS AND CORRELATION STUDIES ON KNOWLEDGE OF LISTENERS(RA).



The correlation of social participation with adoption was (.55) and its direct effect was .26. The increase in correlation was due to its positive indirect effect through scientific orientation (.24) and listening behaviour (.12). The indirect effect through other characters were negligible except age which influenced adoption with negative indirect effect.

The correlation of sub-centre contact with adoption was .02 and its direct effect was .21. The reduction in correlation co-efficient was due to the negative indirect effect through education (-.17) and listening behaviour (-.15). The indirect effect through scientific orientation was positive (.17) but through innovation proneness and social participation were negligible.

The correlation of age with adoption was -.13 and its direct effect was -.46. The increase in negative direct effect was due to its positive indirect effects through scientific orientation (.15) sub-centre contact (.08) and social participation (.07). The indirect effects through listening behaviour and innovation proneness were negligible.

Path diagram is presented herewith in fig.7.

2. Path co-efficient analysis of attitude of listeners (RA).

Path co-efficient analysis of attitude of listeners (RA) was carried out by taking the independent variables  $X_2$ ,  $X_5$  and  $X_6$ . The results are presented in Table-33.

Table-33. Direct and indirect effects of independent variables on attitude of listeners (RA).

|       | $X_2$        | $X_5$        | $X_6$        | correlation with attitude |
|-------|--------------|--------------|--------------|---------------------------|
| $X_2$ | <u>.2076</u> | .1441        | -.0403       | .3114                     |
| $X_5$ | .0550        | <u>.5541</u> | .0226        | .6307*                    |
| $X_6$ | -.0490       | .0733        | <u>.1709</u> | .1951                     |

N.B:- The underlined figures show direct effect others show indirect effect.

\* = significant at 5 per cent level

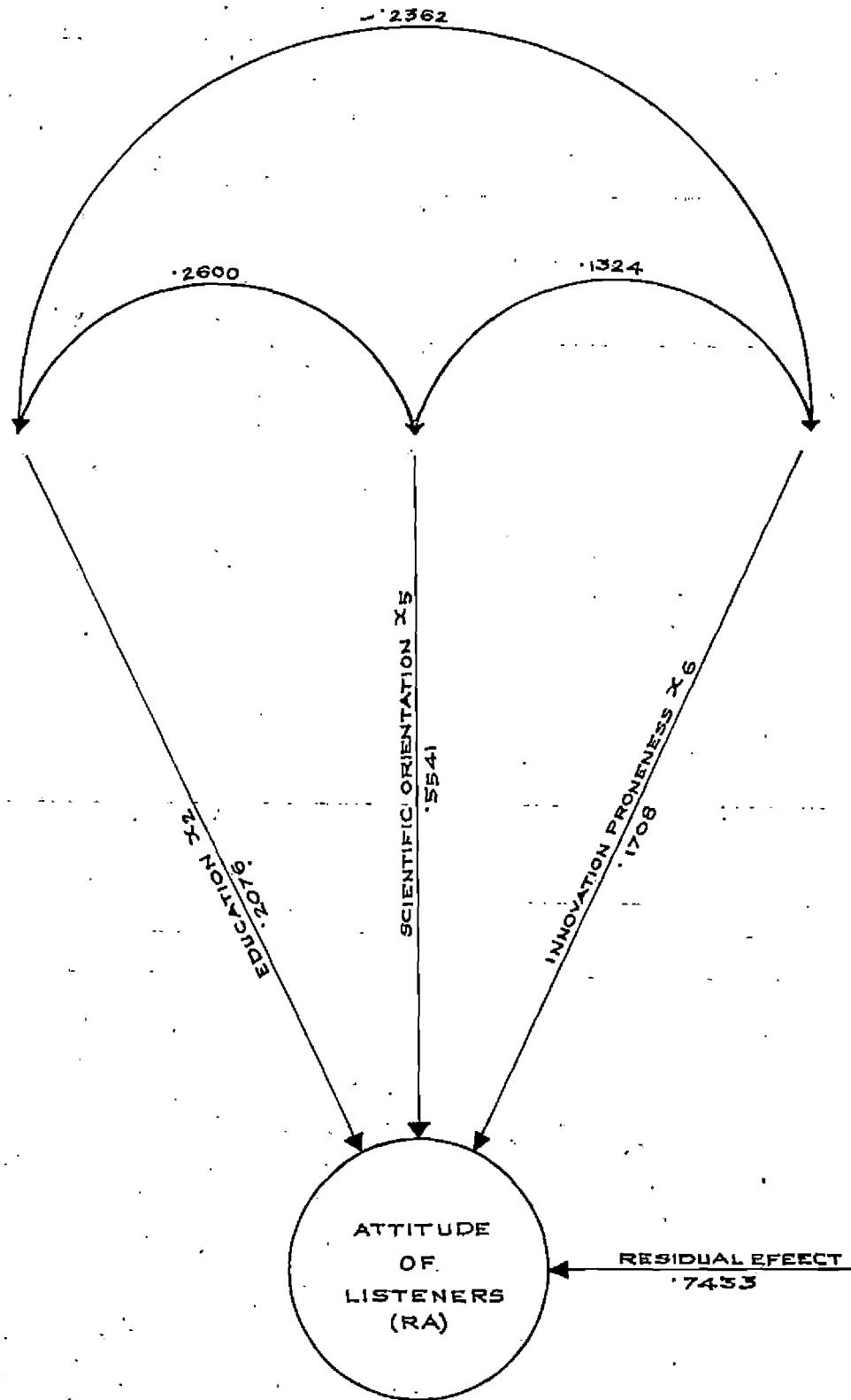
$X_2$  = Education

$X_5$  = Scientific orientation

$X_6$  = Innovation proneness

Table-33 reveals that maximum direct effect was observed for scientific orientation (.55) followed by education (.20). The direct effect of innovation proneness

FIG. 8. PATH ANALYSIS AND CORRELATION STUDIES ON ATTITUDE OF LISTENERS (RA).



was also positive (.17). The correlation of scientific orientation with attitude was .63 and its direct effect was .55. The slight increase in correlation was due to its indirect effect through education (.05) and innovation proneness (.02). The correlation of education with attitude was .31 and its direct effect was .20. The increase in correlation was influenced by indirect effect through scientific orientation (.14) and innovation proneness (-.04).

Path diagram is presented herewith in fig.8.

3. Path co-efficient analysis of extent of adoption of listeners (RA).

Path co-efficient analysis of extent of adoption of listeners (RA) was performed by taking the independent variables  $X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_9$  and one intervening variable  $X_{10}$ . The results are presented in Table-34.



**Table-34. Direct and indirect effects of independent and intervening variables on extent of adoption of listener (RA).**

|          | $X_1$         | $X_2$         | $X_3$         | $X_4$          | $X_5$        | $X_6$         | $X_7$        | $X_9$         | $X_{10}$      | correlation with adoption |
|----------|---------------|---------------|---------------|----------------|--------------|---------------|--------------|---------------|---------------|---------------------------|
| $X_1$    | <u>-.9215</u> | -.5537        | -.5210        | .3779          | -.0353       | -.1785        | -.0144       | -.3149        | -.4268        | -.2461                    |
| $X_2$    | -.4324        | <u>1.1801</u> | .1425         | -.4840         | .0204        | -.2629        | .0536        | .0018         | -.0082        | .2107                     |
| $X_3$    | -.3712        | .1300         | <u>1.1294</u> | -.4598         | .0305        | -.3507        | .1249        | .0320         | .0973         | .5266*                    |
| $X_4$    | -.6229        | .4398         | .4579         | <u>-1.2937</u> | .0231        | .4248         | .0019        | .3307         | .4091         | .1659                     |
| $X_5$    | -.4208        | .3069         | .5016         | -.3313         | <u>.0737</u> | .1474         | .0875        | .1803         | -.0705        | .4402*                    |
| $X_6$    | -.1477        | -.2787        | -.4075        | -.4956         | .0104        | <u>1.1132</u> | -.0577       | .0762         | .1326         | .0550                     |
| $X_7$    | -.0630        | .2994         | .7647         | -.0121         | .0326        | -.3568        | <u>.2113</u> | -.2935        | -.3301        | .2472                     |
| $X_9$    | .3793         | -.0027        | -.0542        | .5614          | -.0196       | -.1109        | .0824        | <u>-.7650</u> | -.1829        | -.1123                    |
| $X_{10}$ | .5447         | .0134         | -.1743        | .7357          | .0076        | -.3898        | .0966        | -.1937        | <u>-.7222</u> | -.0818                    |

N.B:- Under lined figures show direct effect and other figures show indirect effect.

$X_1$  = Age

\* = significant at 5 per cent level

$X_2$  = Education

$X_4$  = Sub-centre contact

$X_3$  = Farm size

$X_5$  = Scientific orientation

$X_6$  = Innovation proneness

$X_7$  = Social participation

$X_9$  = Radio accessibility

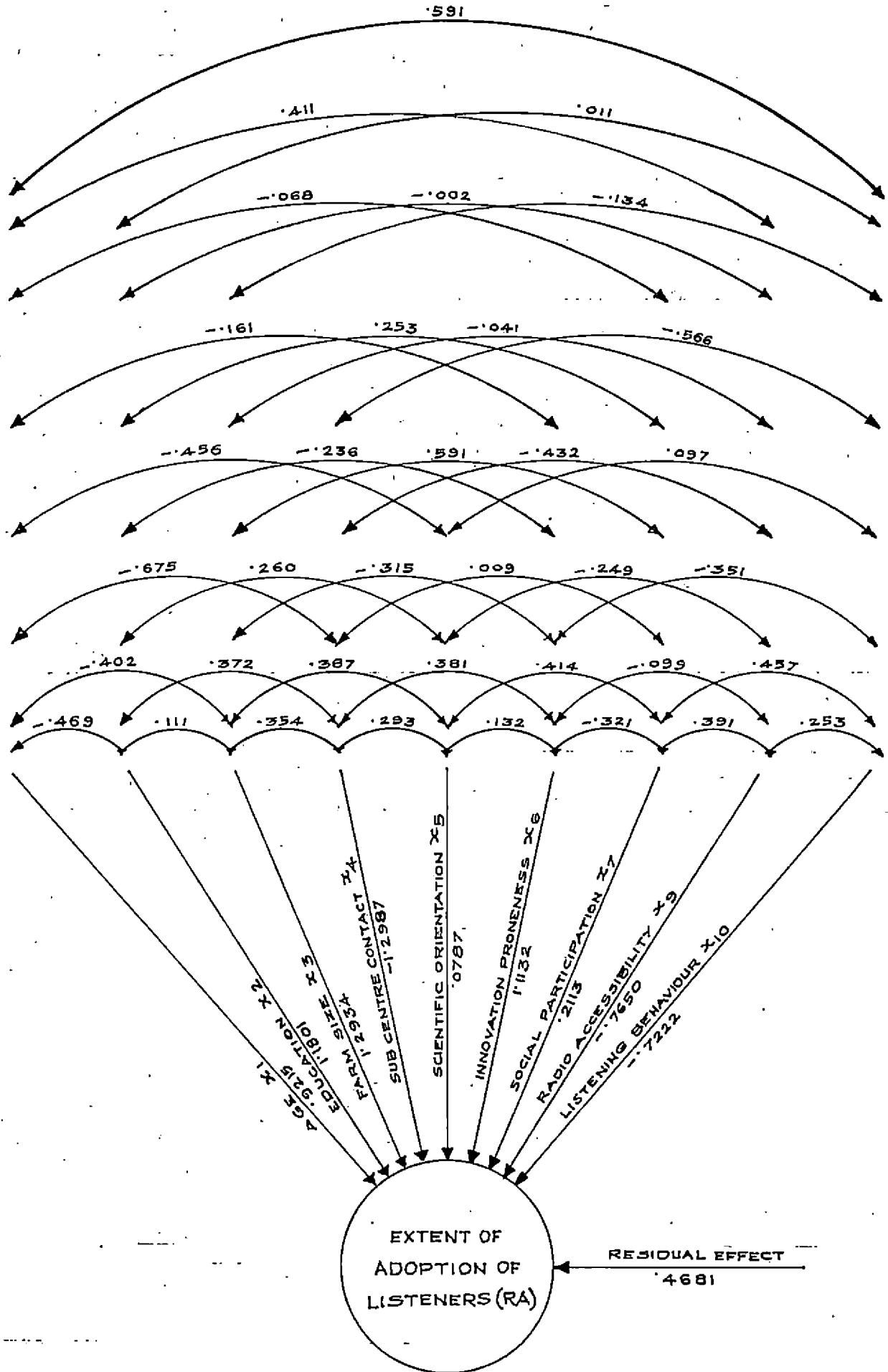
$X_{10}$  = Listening behaviour

From the Table-34 it is evidenced that the maximum direct effect was observed for farm size (1.29) followed by education (1.18). The direct effects of innovation proneness and age on extent of adoption were 1.12 and 0.92 respectively. Negative direct effects were observed for sub-centre contact (-1.29), radio accessibility (-.76) and listening behaviour (-.72). The direct effects of scientific orientation and social participation were positive.

The correlation of farm size with extent of adoption was .52 while its direct effect was 1.29. The reduction in correlation was due to its negative indirect effect through age (-.37), sub-centre contact (-.45), and innovation proneness (-.35). The indirect effects through education, scientific orientation, social participation, radio accessibility and listening behaviour were positive.

The correlation of education with extent of adoption was .21 and its direct effect was 1.18. The reduction in correlation co-efficient was due to its negative indirect effect through age (-.43), sub-centre contact (-.48) and innovation proneness (-.26). The indirect effect through farm size was positive while through

FIG. 9. PATH ANALYSIS AND CORRELATION STUDIES ON EXTENT OF ADOPTION OF LISTENERS (RA).



scientific orientation, social participation radio accessibility and listening behaviour were negligible.

The direct effect of scientific orientation was (.078) while its correlation with extent of adoption was (.44). The increase in correlation co-efficient was due its positive indirect effects through education (.30), farm size (.50), innovation proneness (.15) and radio accessibility (.19). Negative indirect effects were also observed through age, sub-centre contact, and listening behaviour.

sub-centre contact, radio accessibility and listening behaviour influenced the extent of adoption by negative direct effect.

The correlation of age with adoption was negative (-.24) while its direct effect was positive (.92). This is because of negative indirect effect of age through all the characters except sub-centre contact.

Path diagram is presented herewith in fig.9.

C. Path analysis of knowledge, attitude, and extent of adoption of non listeners (NRO).

1. Path co-efficient analysis of knowledge of non-listeners.

Path co-efficient analysis of knowledge of non-listeners was carried out by taking the independent characters  $X_2$ ,  $X_4$ ,  $X_5$ ,  $X_6$  &  $X_7$ . The results are presented in Table-35.

Table-35. Direct and indirect effects of independent variables on knowledge of non-listeners.

|       | $X_2$        | $X_4$         | $X_5$        | $X_6$         | $X_7$        | Correlation with knowledge |
|-------|--------------|---------------|--------------|---------------|--------------|----------------------------|
| $X_2$ | <u>.4264</u> | -.0049        | .1928        | -.0134        | .0063        | .6071*                     |
| $X_4$ | .1730        | <u>-.0122</u> | .1136        | -.0061        | .0219        | .2906*                     |
| $X_5$ | .2122        | -.0035        | <u>.3874</u> | -.0172        | .0075        | .5864*                     |
| $X_6$ | .1451        | -.0018        | .1683        | <u>-.0396</u> | .0037        | .2756*                     |
| $X_7$ | .0415        | -.0039        | .0449        | -.0021        | <u>.0651</u> | .1454                      |

N.B:- Under lined figures show direct effects and other figures show indirect effects.

\* = Significant at 5 per cent level

$X_2$  = Education

$X_4$  = sub-center contact

$X_5$  = Scientific orientation

$X_6$  = Innovation process

$X_7$  = Social participation

FIG. 10. PATH ANALYSIS AND CORRELATION STUDIES ON KNOWLEDGE OF NON-LISTENERS (N 60).

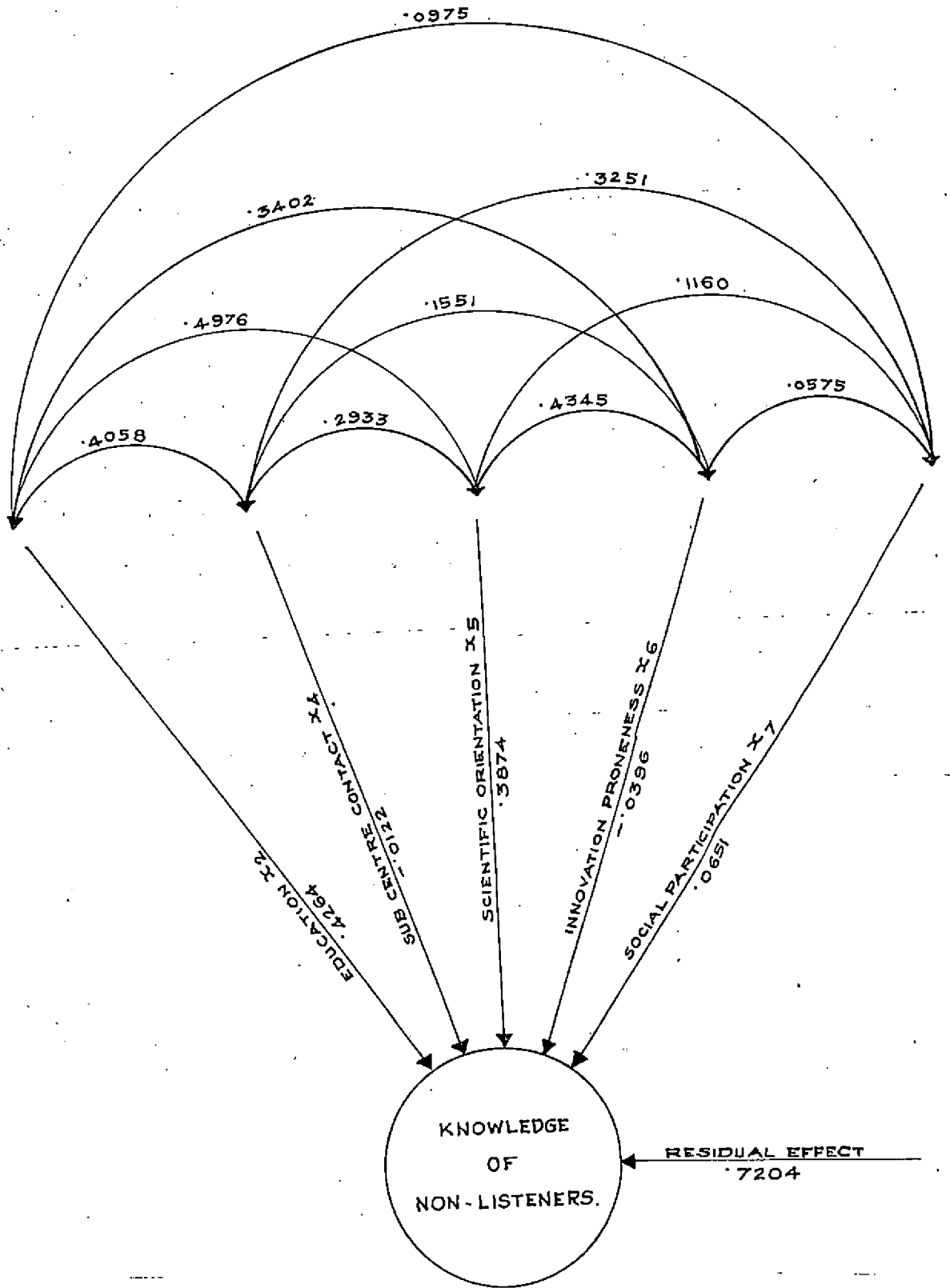
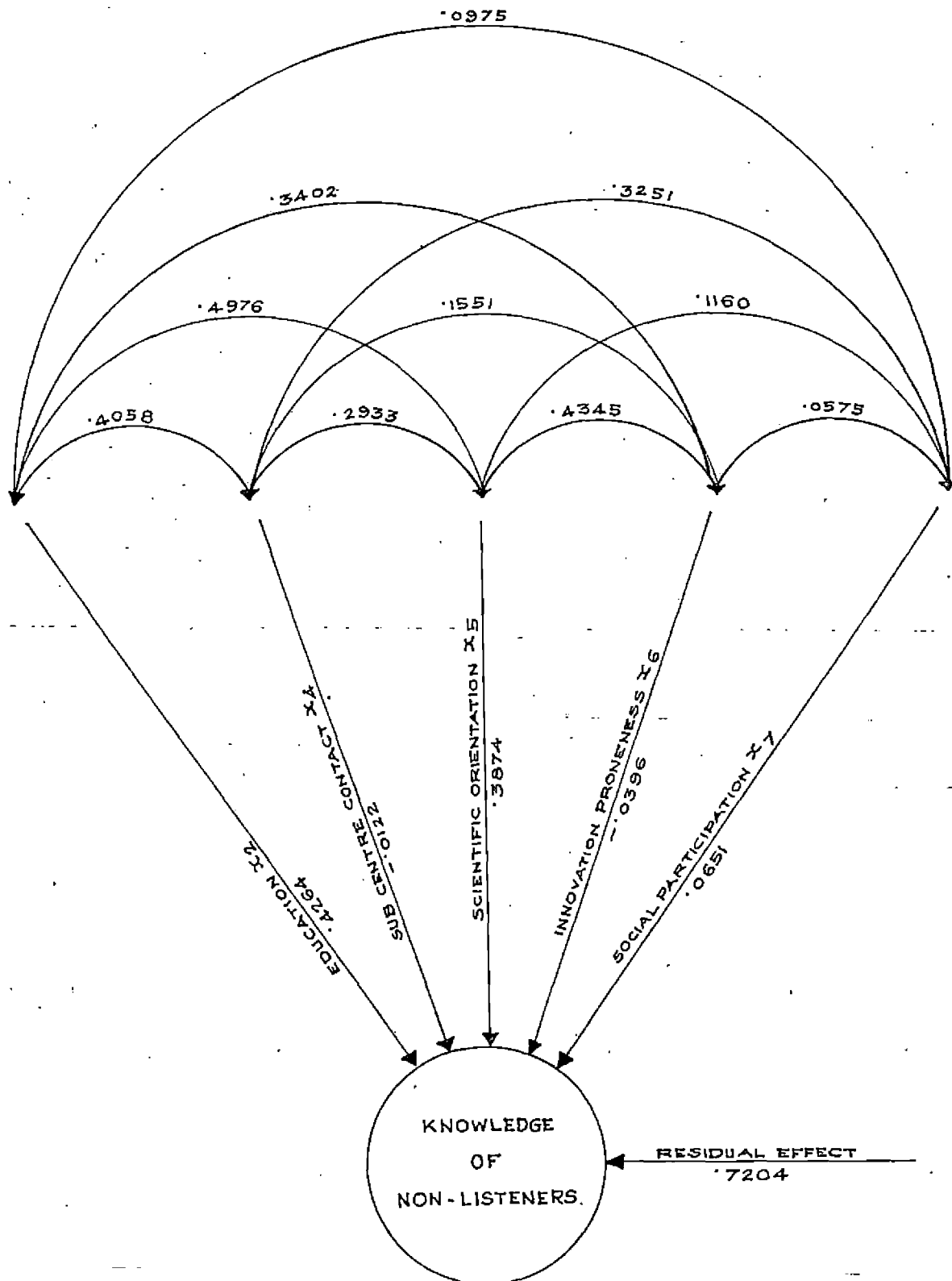


FIG.10. PATH ANALYSIS AND CORRELATION STUDIES ON KNOWLEDGE OF NON-LISTENERS (N 10).



The maximum direct effect was observed for education (0.42) followed by scientific orientation (.38). The direct effects of sub-centre contact and innovation proneness were negative.

The correlation of education with knowledge of NRO was (0.61) and its direct effect was only 0.42. The increase in correlation was due to specially the positive indirect effects of education vide scientific orientation.

A substantial indirect effect was noticed in case of sub-centre contact through education and scientific orientation.

The direct effect of scientific orientation was (0.39) and its correlation with knowledge was 0.59. The increase in correlation was due to its positive indirect effect through education. The indirect influence of other characters was negligible.

Innovation proneness and social participation influenced the knowledge of non-listeners with positive indirect effect through education and scientific orientation.

Innovation proneness influenced negatively, both directly and indirectly the education.

Path diagram is presented herewith in fig.10.



2. Path co-efficient analysis of attitude of non-listeners.

Path co-efficient analysis of attitude of non-listeners was done by taking the independent variables  $X_2$ ,  $X_5$  &  $X_6$ . The results are presented in Table-36.

Table-36. Direct and indirect effects of independent variables on attitude of non-listeners (NRO).

|       | $X_2$         | $X_5$        | $X_6$        | correlation with Attitude |
|-------|---------------|--------------|--------------|---------------------------|
| $X_2$ | <u>-.1310</u> | .0958        | .0760        | .0408                     |
| $X_5$ | -.0652        | <u>.1925</u> | .0971        | .2244                     |
| $X_6$ | -.0445        | .0836        | <u>.2234</u> | .2625*                    |

N.B:- Underlined figures show direct effect other figures show indirect effect.

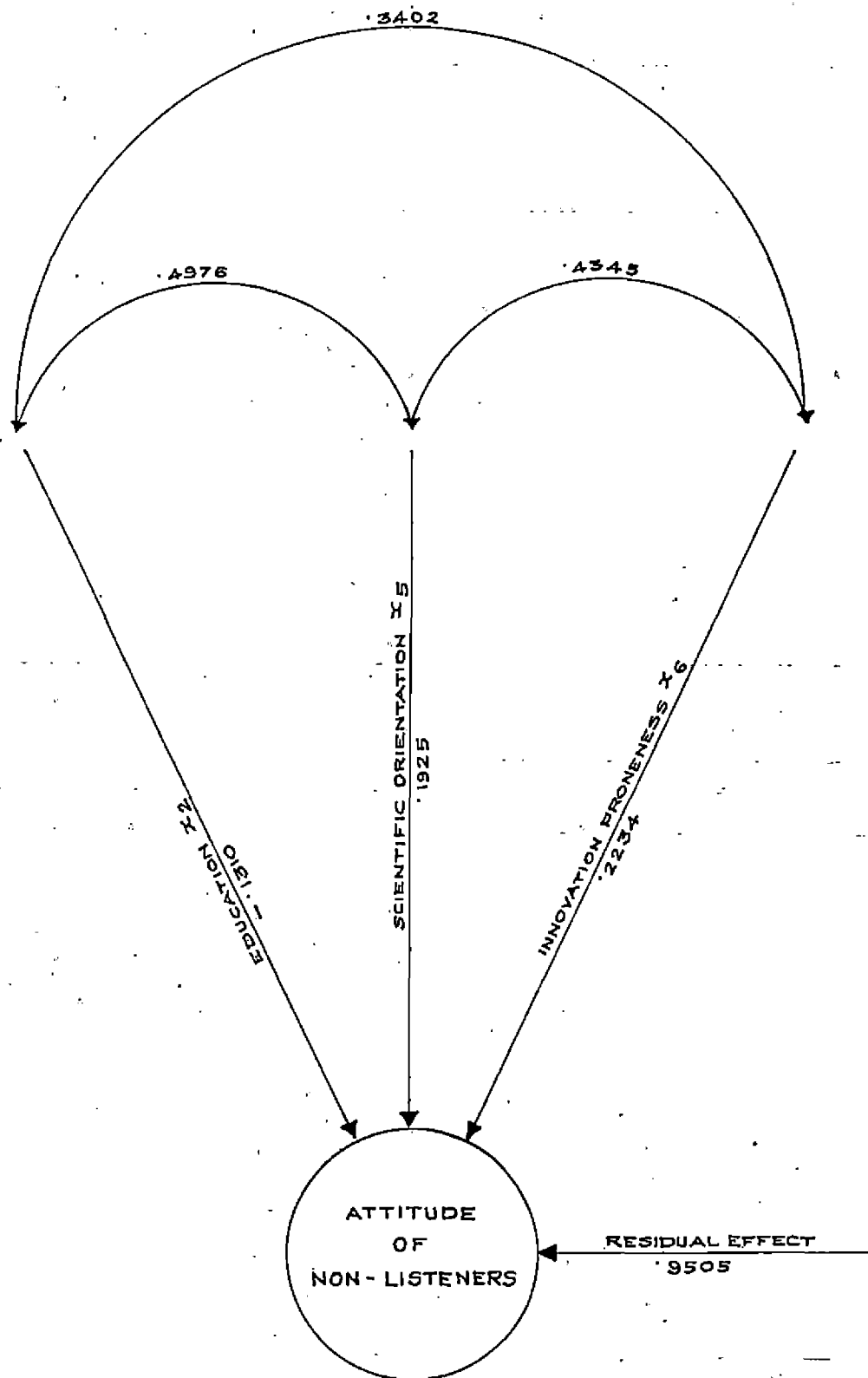
\* = Significant at 5 per cent level

$X_2$  = Education

$X_5$  = scientific orientation

$X_6$  = Innovation proneness

FIG. 11. PATH ANALYSIS AND CORRELATION STUDIES ON ATTITUDE OF NON-LISTENERS.



The maximum direct effect was observed for innovation proneness (.22) followed by scientific orientation (.19) and education of non-listeners influenced attitude with negative direct effect (.13).

The correlation of scientific orientation with attitude was .22 and its direct effect was .19 which is nearly equal as seen in Table-36.

The correlation of innovation proneness with attitude was .26 and its direct effect was .22. The slight increase in correlation was due to its indirect effect through scientific orientation and education.

Path diagram is presented herewith in fig.11.

3. Path co-efficient analysis of extent of adoption of non-listeners.

Path co-efficient analysis of extent of adoption of non-listeners was carried out by taking the independent characters  $X_1, X_2, X_3, X_4, X_5, X_6$  &  $X_7$ . The results are presented in Table-37.

Table-37. Direct and indirect effects of independent variables on extent of adoption of non-listeners.

|       | $X_1$        | $X_2$        | $X_3$        | $X_4$        | $X_5$        | $X_6$        | $X_7$         | correlation with extent of adoption |
|-------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|-------------------------------------|
| $X_1$ | <u>.1204</u> | -.0665       | .0127        | -.0010       | -.2160       | -.0897       | .0058         | -.2342*                             |
| $X_2$ | -.0395       | <u>.2025</u> | .0046        | .0274        | .2473        | .0628        | -.0176        | .4877*                              |
| $X_3$ | .0350        | .0217        | <u>.0437</u> | .0228        | .0903        | .0205        | .0079         | .2421*                              |
| $X_4$ | -.0018       | .0822        | .0147        | <u>.0677</u> | .1458        | .0286        | -.0589        | .2854*                              |
| $X_5$ | -.0523       | .1008        | .0079        | .0198        | <u>.4970</u> | .0802        | -.0210        | .6326*                              |
| $X_6$ | -.0584       | .0689        | .0048        | .0105        | .2160        | <u>.1847</u> | -.0104        | .4161*                              |
| $X_7$ | -.0038       | .0197        | -.0019       | .0220        | .0576        | .0106        | <u>-.1812</u> | -.0768                              |

N.B:- Under lined figures are direct effect and other figures are indirect effect.

\* = Significant at 5 per cent level

$X_1$  = Age,  $X_2$  = Education,  $X_3$  = Farm size

$X_4$  = Sub-centre contact,  $X_5$  = Scientific orientation

$X_6$  = Innovation proneness,  $X_7$  = Social participation.

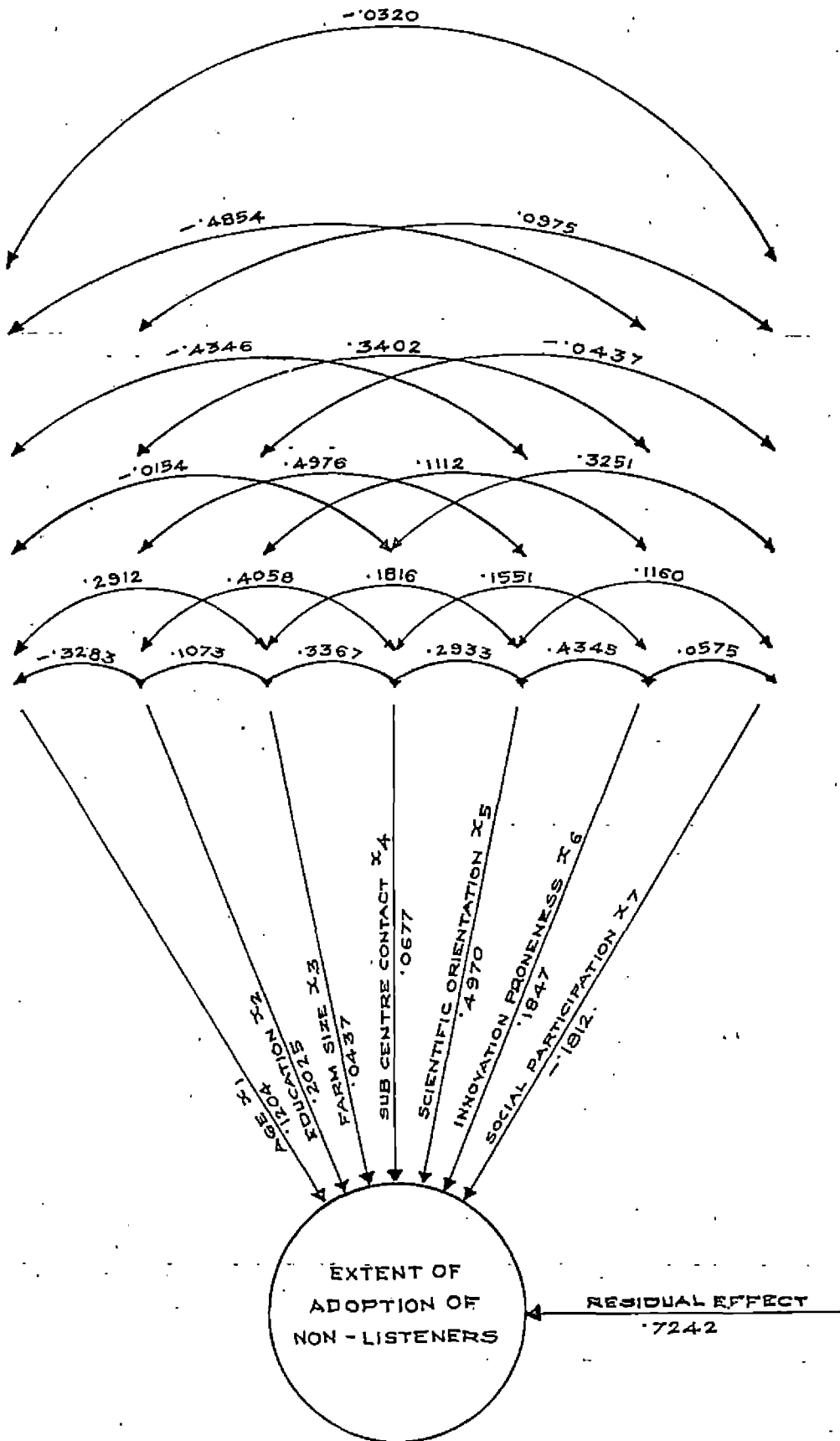
Table-37 revealed that in case of non-listeners the extent of adoption was influenced with the maximum direct effect (.49) of scientific orientation followed by education (.20). The direct effects of innovation proneness and age were 0.18 and .12 respectively. The direct effects of farm size and sub centre contact were minimum.

The correlation of scientific orientation with adoption was 0.63 though its direct effect was only 0.49. The increase in correlation was due to the positive indirect effect through education and innovation proneness.

The direct effect of education to the adoption of non-listeners was 0.20 but its correlation with adoption was .48. The increase in correlation may be due to the positive indirect effect through scientific orientation, innovation proneness and sub-centre contact.

The correlation of innovation proneness with adoption was 42%. Innovation proneness influenced the adoption of non-listeners by 19% directly. The remaining 23% was influenced with positive indirect effect through scientific orientation and education.

FIG. 12. PATH ANALYSIS AND CORRELATION STUDIES ON EXTENT OF ADOPTION OF NON-LISTENERS (NR0).



It is interesting to note that the age of NRO influenced positively and directly to the extent of adoption by fifty two percent though it had negative correlation with adoption (-.23). The age also influenced with negative indirect effect through all the characters except farm size and social participation.

The correlation of farm size with the extent of adoption of non-listeners was 0.24 but its direct effect was only 0.04 (17%). The increase in correlation was due to its positive in direct effect through all the characters selected for this purpose.

The direct effect of sub-centre contact to the extent of adoption of NRO was 0.06 and its significant correlation with extent of adoption was 0.28. The increase in correlation is due to the positive indirect effect of sub-centre contact through scientific orientation (.14) and education (.08). The indirect effects of other characters were negligible.

Path diagram is presented herewith in fig.12.

VII. Comparative analysis of listening behaviour of radio owners and radio accessors of the two programmes.

The listening behaviour of radio owners and radio accessors are presented in Table-38.

Table-38. Listening behaviour of Radio owners and Radio accessors compared.

| Listening behaviour | Radio owners<br>(N=50) |    |              |    | Radio accessors<br>(N=25) |    |              |    | Mean score | t-value |
|---------------------|------------------------|----|--------------|----|---------------------------|----|--------------|----|------------|---------|
|                     | JTA and Budhi-amma     |    | Dis-cus-sion |    | JTA and Budhi-amma        |    | Dis-cus-sion |    |            |         |
|                     | F                      | P  | F            | P  | F                         | P  | F            | P  |            |         |
| <u>Regularity</u>   |                        |    |              |    |                           |    |              |    |            |         |
| Every week          | 29                     | 58 | 4            | 8  | 14                        | 56 | 1            | 4  |            |         |
| Most often          | 15                     | 30 | 8            | 16 | 7                         | 28 | 2            | 8  |            |         |
| Casual              | 2                      | 4  | 15           | 30 | 1                         | 4  | 9            | 36 |            |         |
| <u>Intensity</u>    |                        |    |              |    |                           |    |              |    |            |         |
| Involved            | 22                     | 44 | 2            | 4  | 7                         | 28 | 0            | 0  |            | 2.69*   |
| Focussed            | 22                     | 44 | 12           | 24 | 2                         | 8  | 5            | 20 |            |         |
| Leisure             | 2                      | 4  | 8            | 16 | 13                        | 52 | 4            | 16 |            |         |
| Engaged             | 0                      | 0  | 5            | 10 | 0                         | 0  | 3            | 12 |            |         |
| <u>Duration</u>     |                        |    |              |    |                           |    |              |    |            |         |
| Complete            | 44                     | 88 | 15           | 30 | 15                        | 60 | 4            | 16 | 13.74      | 11.04   |
| Partial             | 2                      | 4  | 12           | 24 | 7                         | 28 | 8            | 32 |            |         |
| <u>Purpose</u>      |                        |    |              |    |                           |    |              |    |            |         |
| Education           | 22                     | 44 | 2            | 4  | 8                         | 32 | 0            | 0  |            |         |
| Entertainment       | 24                     | 48 | 19           | 38 | 11                        | 44 | 4            | 16 |            |         |
| Accidental          | 0                      | 0  | 6            | 12 | 3                         | 12 | 8            | 32 |            |         |
| Non-listeners       | 4                      | 8  | 23           | 46 | 3                         | 12 | 13           | 52 |            |         |

\* = Significant at 5% level

F = Frequency      P = percentage



The data in Table-38 revealed that 92% of radio owners enrolled under the "JTA and Budhiama" programme, where as 54% enrolled under the "Discussion" programme. While 88% of radio accessors listened the "JTA and Budhiama" and 48% listened the "Discussion" programmes.

Among the radio owners majority (58%) listened the "JTA and Budhiama" programme every week and 30% listened most often. 30% listened the "Discussion" programme casually and only 8% enrolled in every week listeners.

44% of radio owners were focussed as well as involved listeners of the "JTA and Budhiama" programme where as only 24% were focussed listeners of the "Discussion" programme and 4% were involved listeners.

88% and 30% of RO listened the "JTA and Budhiama" programme and the "Discussion" programme respectively, and remaining 24% were partial listeners. 44% of RO listened the "JTA and Budhiama" programme with educational purpose, 48% with entertainment purpose, while only 4% listened the "Discussion" programme with educational purpose and 36% as entertainment and remaining 12% as accidental listeners.

Among the radio accessors, majority (56%) listened the "JTA and Budhiama" programme every week, 28% most often and only 4% were casual listeners. While in the "Discussion" programme 36% were casual listeners and only 4% listened every week.

28% and 8% of RA were involved and focussed listeners and 52% listened leasurely of the "JTA and Budhiama" programme. While 20% were focussed listeners and 16% listened the "Discussion" programme leasurely.

60% of RA listened the "JTA and Budhiama" programme completely and 28% as partial listeners where 16% listened the 2nd programme completely and 32% listened partially.

44% of RA listened the 1st programme with entertainment purpose and only 32% listened as educational purpose where as 32% listened the "Discussion programme" accidentally and 16% as entertainment.

8% of RO and 12% of RA were not enrolled in the "JTA and Budhiama" programme, where as 46% of RO and 52% of RA of the total sampled respondents never listened the "Discussion" programme.

A cursory view on Table-38 on total listening score of RO and RA also evidenced a significant difference between them and the mean listening score of RO was higher than the mean listening score of RA. The test made it clear that radio owners were better listener than radio accessors.

## **DISCUSSION**

## Chapter V

### DISCUSSION

The discussion of the results is presented under the following sections.

- I Distribution and comparison of listeners (RO and RA) and non-listeners according to dependent variables.
  - II Distribution and comparison of listeners (RO and RA) and non-listeners according to their personal characteristics.
  - III Correlation between dependent variables and independent variables, and intervening variable.
  - IV Relationship amongst the independent variables and intervening variable.
  - V Path analysis of dependent variables with other correlated independent variables.
  - VI Comparative analysis of listening behaviour of radio owners and radio accessors.
- I Distribution and comparison of listeners (RO and RA) and non-listeners according to dependent variables.

Discussion on tables 2, 4, and 6, the results evidenced that nearly half of the RO (42%) who form the part of listeners have medium level of knowledge and attitude (60%)

as compared to 44% of the radio accessors who have high level of knowledge in agriculture and attitude (40%) towards farm broadcasts. At the same time it is interesting to note that even with high knowledge and high attitude both RO and RA have only medium level of adoption as indicated in Table-6. This finding is in agreement with that of Singh and Singh (1974), Supe and Salode (1975), Behera and Sahoo (1975), Pathak et al. (1979), Kamarudeen (1981) and Chandrakandan (1980) who reported similar findings.

Though the high level of knowledge and attitude is found to exist in a sizable number of farmers, the adoption remains to be mediocre due to the lack of accessibility and availability of inputs for practicing improved agricultural practices. This reasoning is very well correlated with the terrain of the country. In fact 32% of RA exhibited low knowledge, attitude and level of adoption which shall be reasoned to the same accessibility factors. Even then the 't' value of the mean scores of these categories of farmer listeners is found to be significant which strengthens the reason for non-adoption.

Comparing the listeners and non-listeners the Tables 2 and 4 exhibit a sizable percentage of non-listeners farmers to have low levels of knowledge, attitude towards the

improved agricultural practices. Still vide Table-6 a sizable number of non-listeners still can be grouped under medium level of adoption. In case of adoption it is interesting to note that both listeners and non-listeners are medium adopters. This finding is likely to be in line with that of Alangeer (1970) and Chandrakandan (1980). The above finding also confirms the difficulties are more for adoption which implies that the programmes broadcasted in agriculture do not seem to give any impact in terms of adoption of improved agricultural practices.

II Distribution and Comparison of listeners (RO and RA) and non-listeners according to their personal characteristics.

Discussing on the personal characteristics of the listeners it is interesting to note that more than seventy five per cent of listeners are middle aged farmers namely farmers between the age of 30 and 50 years. This finding is in agreement with that of Sandhu (1970) and Singh (1972). Of these above finding about fifty per cent of them can read and write and remaining have education of primary school and above. This fact is evidenced by a higher education score. Amongst the listeners it is seen that RO seems to be

more educated than RA as depicted by a sizable marginal difference between their mean education scores. Referring to non listeners about fifty five percent of farmers were also middle aged. With in this group it is interesting to see that about forty per cent of them are found to be illiterate. Shakya (1973) also reported similar finding.

Discussing on the educational level of farmers under study it is interesting to note that level of education does not seem to influence higher level of adoption amongst farmers as evidenced by the non significant 't' value on the level of education on non-listeners. This finding was supported by Supe and Salode (1975).

Referring to the personal characteristics of farmers namely the farm size and sub-centre contact, Tables 12 and 14 depict that more than half of both listeners and non-listeners are marginal farmers having areas of less than 20 ropanies. At the same time 40% of radio owners are small farmers as compared to 16% farmers as RA. It is also interesting to note that 32% of RA are big farmers having a farm holding of more than 40 ropanies. About fifty per cent and more of the listeners rarely contact



the sub-centre for technical advice and inputs for improved agricultural practices. Probably 36% and 70% of RA and RO respectively who frequently contact the sub-centre may be the farmers who have higher farm size. Discussing in this fact the reason for such differential contacts in the sub-centre shall be due to the difference in farmholdings. It is likely to prove that the marginal farmers who hold a farm size less than 20 ropanies might not be taking pains to contact the sub-centre for technical advices and inputs services on improved farming. Comparing listeners and non-listeners it is interesting to note that the total sample of non-listeners studied happened to be all marginal and small farmers. This is evidenced vide Table 14 that 34.67% of non-listeners never contacted the sub-centre and almost the remaining rarely contacted the sub-centre. Reasoning for this shall be due to lack of communication through the media. Any how the Tables 12 and 14 depict no or very little regularity amongst the marginal and small farmers in their practice of contacting sub-centre for technical advice and inputs for improved agricultural practices.

It is very interesting to note that about forty per cent of listeners have a high level of innovation proneness as well as high level of scientific orientation. This finding is supported by Shakya (1973) and Rai (1984).

This shall be due to the reason of they being influenced by their radio listening behaviour wherein the farm broadcast programmes which usually of a higher scientific and technology oriented. It is interesting to see in Tables 16 and 18 that a sizable percentage of RA have low percentage of innovation proneness and scientific orientation when compared to RO. The reason shall be the ownership of the radio to influence the radio owning farmers to listen farm broadcast frequently.

About sixty percent of the non-listeners have evidenced low or medium level of innovation proneness and scientific orientation but it is interesting to note that about one third of them belonged to high group. This might be due to their personal interest towards farm technology without prejudice to their lack of ownership of radio for listening the programme. This finding also supported the medium level of knowledge, attitude and adoption prevailing among the both listeners and non-listeners.

Looking to the social participation of the listeners and non-listeners it is seen from the Table-20 that almost one third and above of both listeners and non-listeners do not have any membership in any organization. At the same time one third and above of the listeners have membership in

one organization. This shall be due to the reason of their listening behaviour as well as the extent of larger holdings and their frequent contact with the sub-centre of their locality.

III Correlation between dependent variables and independent variables and intervening variable.

Discussing on the relationship of knowledge with other dependent and independent variables it is seen from Tables 22, 23 24 and 25 that the knowledge of the listeners and the non-listeners has been significantly related to adoption. Incidentally the knowledge of the listeners namely radio accessors has found to be related only to their attitude towards farm broadcast as in the case of the attitude of the non-listeners also. Kamarudeen (1981) also reported similar finding. In this case it is interesting to comment on that the extent of adoption probably equal of the listeners who owned radio implying very little difference in adoption between listeners and non-listeners. This shall be due to the lack of influence of the programme content of the radio broadcast put across through radio. In Table-23 the knowledge of the listeners and the non-listeners seems to be influenced by their scientific

orientation which is in agreement with the findings of Dhanokar (1970), Supe and Salode (1975) and Kamarudeen (1981). This is evidenced by the above fact that the contribution of knowledge specially amongst the listeners seems to be more through their sub-centre contact. It is also seen in Table 23 that the relationship existed between listeners and their listening behaviour but the knowledge of the radio owners seems to be influenced more by their sub-centre contact, and innovation proneness for improving the knowledge in scientific farming.

It is very interesting to note that education of the non listeners is significantly related to their knowledge which is supported by Supe and Salode (1975), and Kaleel (1978) as against though not significant a negative relation amongst radio accessors. It is also interesting to note that the sub-centre contact, scientific orientation, and innovation proneness of non-listeners do influence their knowledge on scientific farming.

Regarding the listeners' attitude as said in above para though relationship existed in their knowledge, Table 24 shows a negative relation with their level of education specially in case of radio owning farmers. Incidentally their

attitude is found to be positively significant to their innovation proneness, the only variable which is similarly comparable with regard to that of their innovation proneness of the non-listeners where as scientific orientation is only variable found to be significant in terms of its relationship with the knowledge of radio accessors which is in agreement with the findings of Supe and Salode (1975) and Kamarudeen (1981) who reported significant relation between knowledge and scientific orientation of the farmers. In the above table it is interesting to note that though not significant negative relation existed between the attitude and age as well as radio accessibility of the farmers who are accessible to radio. This may imply to the fact that they might be listening the radio not essentially to acquire the knowledge in scientific agriculture but may also be for the sake of entertainment. Similarly though not significant negative relation seems to exist between the attitude of non-listeners and their age, farm size and sub-centre contact. This may imply that non-listeners' acquisition of knowledge does not seem to be purposive during their visit to sub-centre.

Referring to extent of adoption and independent variables amongst the listeners its relationship existed only in the knowledge gained by radio owners and not with the radio

accessors vide Table 22. Kamarudeen (1981) and Rai (1984) reported similar findings. This is in support of the finding in Table 25 where in the relation of adoption of RO is almost significant with all their independent variables except scientific orientation where as on the reverse only farm size and scientific orientation was found to be significantly related to adoption behaviour of RA which is supported by Kamarudeen (1981) who reported similar finding. The above finding implies the significant listening behaviour of RO as against non significant negative relationship of the listening behaviour of RA with the extent of adoption. Rajamani and sinha (1983) reported similar findings. The reason for the above finding shall be due to the potentialities of adopting improved agricultural practices among the radio owners as compared to that of radio accessors. In this context it shall also be that the radio owners belong to medium and big farm size groups.

It is interesting to note that in Table 25 all the independent variables other than social participation of NRO found to be significantly related to their extent of adoption though they are neither owners nor accessible to radio. which implies parity in adoption between listeners and non-listeners. Supe and Salode (1975) also reported that no relation existed between social participation and adoption behaviour of farmers.

IV Relationship amongst the independent variables and  
intervening variable.

Referring to the relationship of the independent variables of the non-listeners and the listener groups of farmers it is evidenced from Table 26, 27 and 28 that significant negative relation existed between the age and level of education of the non-listeners and the listeners which is in agreement with the finding of Kamarudeen (1981) who reported negative relation between age and education of control farmers. This implies that education does not seem to influence the age of the listeners and non-listeners. Similarly significant relationship existed between the level of education and sub-centre contact of the non-listeners and that of radio owners as evidenced by the tables is quite relevant as the farmers irrespective of listening their radio gets equal share of knowledge on improved farming practices. The relationship of farm holding and sub-centre contact of the non-listeners and that of radio owners has also been found to be significant. This has been evidenced by the significant relationship between their scientific orientation as well as innovation proneness and sub-centre contact.

This finding is likely to be in line with that of Reddy and Reddy (1975) and Kamarudeen (1981). It is also interesting to note that significance difference existed between the age of radio owners as well as that of non-listeners with regard to their scientific orientation, Rajendran (1982) also reported similar finding. The reason may be due to different level of education achieved by the marginal and small farmers. Tables also evidenced significant relationship between non-listeners and radio owners with regard to their sub-centre contacts and social participation. The reason shall be the nonavailability of radio and their non accessible to scientific information given through the media.

In case of radio accessors and non-listeners as in the case of their age and education significant relationship also existed between their scientific orientation amongst different age groups of farmers. This is normally found true in many studies where scientific orientation increases with age as Kamarudeen (1981) also reported similar finding.

V Path analysis of dependent variables with other correlated independent variables.

Path analysis showed (Table 29) that innovation proneness had maximum direct effect on level of knowledge of radio owners followed by scientific orientation, listening behaviour and sub-centre contact. Comparatively



higher direct effect was contributed by innovation proneness and scientific orientation. Since innovation proneness showed the maximum positive direct effect and also highest positive correlation value with knowledge of radio owners, this variable should be a criterion in understanding the knowledge level of radio owners in scientific agriculture. Because of comparatively higher contribution of scientific orientation this variable is also to be considered for conceptualizing the knowledge level of radio owners.

Regarding the knowledge of listeners (RA) Table 32 showed that scientific orientation had maximum direct effect followed by listening behaviour and social participation. Comparatively higher direct effect was contributed by listening behaviour and social participation. Since scientific orientation showed the maximum positive direct effect and also highest positive correlation value with knowledge, this variable should be a criterion in understanding the knowledge level of radio accessors in scientific agriculture. Because of comparatively higher contribution of listening behaviour this variable is also to be considered for conceptualizing the knowledge of radio accessors.

Table 35 showed that education had maximum direct effect followed by scientific orientation on knowledge of non-listeners. These two variables should be taken into consideration for understanding and conceptualizing the knowledge level of non-listeners in scientific agriculture.

Regarding the attitude towards farm broadcast Tables 30 and 33 indicate the results of path analysis showed that innovation proneness of listeners (RO) and scientific orientation of listeners (RA) had maximum positive direct effect and also highest positive correlation value with attitude of radio owners and radio accessors respectively. These two variables should be a criterion in understanding the attitude of listeners towards farm broadcasts.

In case of non-listeners Table 36 showed that only innovation proneness had maximum direct effect on attitude of non-listeners. Due to the contribution of more and positive direct effect this variable is taken as a criterion in understanding the attitude of non-listeners.

Results of path analysis in Table 31 showed that social participation had maximum direct effect on adoption of improved agricultural practices by listeners (RO) followed by farm size, education and innovation proneness.

since social participation showed the maximum positive direct effect and also highest positive correlation value with adoption, this variable should be a criterion in understanding the adoption of improved agricultural practices. Because of the comparative higher contribution of farm size which is also to be considered for finding out the adoption of improved agricultural practices by listeners (RO).

But in case of listeners (RA) farm size had maximum direct effect (Table-34) on adoption of improved agricultural practices followed by scientific orientation. Since farm size showed maximum positive direct effect with highest correlation value with adoption, this variable should be a criterion in understanding the adoption of modern improved agricultural practices of listeners (RA).

Table-37 showed that scientific orientation exhibit maximum direct effect followed by education and innovation proneness on adoption of improved agricultural practices by non-listeners. Since scientific orientation showed maximum direct effect with highest correlation value with adoption behaviour of non-listeners, this variable should be a criterion in understanding the adoption of improved

agricultural practices by non-listeners. Because of comparative higher contribution education should also be considered for finding out the adoption of improved agricultural practices of non-listeners.

VI Comparative analysis of listening behaviour of radio owners and radio accessors.

Results (Table-38) indicates that more than half (58%) of the listeners (RO) and 56% (RA) hear the "JTA and Budhiama" programme every week, 30% and 28% most often and 4% each casually.

While nearly one third of listeners (30% RO and 36% RA) hear the "Discussion" programme casually, 8% and 4% every week, and 16% and 8% most often respectively.

Singh and Sandhu (1971) reported regular listening by 41% of farmers. Singh (1972) found that 44% of listeners are regular every day listeners. Knight (1973) also gave a similar report (46%).

Higher rate in every week listening of "JTA and Budhiama" programme evidenced by this study may be due to

unpreferred mode of presentation and lack of improved technology in the programme content.

Table-38 also indicates that a good majority of farmer listeners (44% RO, 28% RA) are involved as well as focussed listeners (44% RO, 8% RA) of "JTA and Budhiama" programme and nearly one fourth of listeners (24% RO, 20% RA) were focussed listeners of "Discussion" programme. The intensity was much higher than many past reports (from India) by Sekhar (1982) who reported only 10% were intense listeners and Rajendran (1982) who found majority are leisure time listeners.

High intensity of listening of radio owning listeners than the radio accessors may be due to the ownership of radio. The high intensity of listening of the listeners in this study may also evidenced due to technology and scientific oriented farm broadcast programme and the preferred mode of presentation.

It is indicated in Table 38 that 88% of RO and 60% RA were complete listeners of "JTA and Budhiama" programme as compared to 30% RO and 16% RA of the "Discussion" programme.

This finding is likely to be in line with those of Badrinarayan (1977) who reported that 50% were complete listeners and sekhar (1982) who found that 61% were full time listeners.

The higher rate of complete listeners in case of "JTA and Sudhi Ama" programme is also may be due to preferred mode of presentation. It is found (Table-38) that nearly half of the listeners (40% RO, 44%RA) heard the "JTA and Budhiama" programme with entertainment purpose as compared to 8% of RO and 16% of RA listened the "Discussion" programme with the same purpose. Still it is seen in the table that 44% RO and 32% of RA listened the first programme with the education objective. Chandrakandan (1980) also reported a high rate (87%) of purposive listening by the listeners of the farm broadcast programme.

In this study high rate of purposive listening with entertainment than with the educational purpose is may be due to preferred mode of presentation with lack of improved technology in the programme content.

Table-38 indicates that there was a significant different between the radio owners and radio accessors with respect to their listening behaviour as indicated by 't'

value. The mean listening scores showed that radio owners are better listeners than radio accessors. The reason may be due to ownership of radio which is normally found in many studies.

## **SUMMARY**



## Chapter VI

### SUMMARY

The farm broadcasting in Nepal was started in 1955 with a new programme relating to the farmers in order to modernize farming system in Nepal, which is running down at present under the control of Agricultural Information section within the Department of Agriculture. This section runs its own studio and produce farm broadcast programmes in four farmats each of 15 minutes in a week

During the last twenty years a lot of messages on farm modernization has flowed over Radio Nepal but no impact study had been undertaken on these messages so far. The audience of Nepalese farm broadcasting live in hilly regions (Approximately 66 per cent). Because of the above reason and extremely broken terrain a hilly district was selected for this study entitled "Impact of farm broadcasts on the adoption of agricultural innovations by the farmers of Nuwakot District of Nepal" with the following objectives.

- (1) To assess the level of knowledge of the radio listening farmers in agriculture.

- (2) To study the attitude of the farmer listeners towards farm broadcast.
- (3) To measure the extent of adoption on recommendations given through farm broadcasts.
- (4) To analyse the listening behaviour of the farmers with respect to personal characteristics.

Age, education, farm size, sub-centre contact, innovation proneness, scientific orientation, social participation, radio ownership, radio accessibility, were the independent variables. Listening behaviour was considered as the intervening variable for this study. Knowledge, attitude and adoption were the dependent variables.

Age was measured in number of years, education using Trivedi's scale modified, farm size, in number of ropanies, sub-centre contact interms of no. of visits to sub-centre in a week, innovation proneness using the scale of Moulik (1965). Scientific orientation using the scale developed by Supe (1969), social participation using Trivedi's scale modified, radio ownership interms of possession of number of radio receiving sets, and radio accessibility was measured in terms of availability of

radio receiving sets within a radius of one Kilometer from the respondent's house

Among the dependent variables knowledge in agriculture was measured by standardized knowledge test. Twenty test items were selected using difficulty and discrimination indices. Attitude was measured using the scale developed by Chandrakandan (1982). Extent of adoption was measured using 13 selected recommended practices in maize cultivation.

The listening behaviour was measured in terms of regularity, intensity, duration and purpose of listening. Each of these components were measured in different continuum and scored accordingly.

A pilot study was undertaken to finalize the materials and methods of the study and the interview schedule was finalized accordingly. Seventy five listeners (Fifty radio owners and twenty five radio accessors) and seventy five non-listeners were selected purposively from four sub-centres of Nuwakot District of Nepal by purposive sampling method.

Data was collected through personal interview. Student 't' test, correlation, and path analysis were the various statistical techniques used in this study.

The salient findings of this study are the following:

- (1) The results of test of significance revealed that the mean scores for knowledge, attitude and adoption of listeners (RO & RA) were found to be significantly higher than that of non-listeners.
- (2) Within the listeners radio owners possessed higher knowledge, favourable attitude and high adoption than that of radio accessors as indicated by significant t-value.
- (3) The mean scores of age, education, farm size, sub-centre contact, scientific orientation, innovation proneness and listening behaviour, of listeners (RO) were significantly higher than that of non-listeners.
- (4) No significant difference was noticed between radio owners and non-listeners on their social participation.

(5) Listeners (Radio accessors) and non-listeners were compared based on their personal characteristics age, farm size, sub-centre contact, scientific orientation, Innovation proneness showed significant difference between them but no significant difference was noticed on the their level of education and social participation.

(6) Listeners (Radio owners and radio accessors) were compared based on their personal characteristics age, education, innovation proneness and listening behaviour showed significant difference between them and no significant difference was noticed between them with respect to their farm size, sub-centre contact, scientific orientation, and social participation.

(7) Results of correlation analysis revealed that knowledge of (RO) was positively and significantly correlated with adoption, sub-centre contact, scientific orientation, innovation proneness and listening behaviour.

(8) Attitude of listeners (RO) was significantly and positively correlated with innovation proneness but negatively and significantly correlated with education.

9. Extent of adoption of listeners (RO) was positively and significantly correlated with education, farm size, sub-centre contact, innovation proneness, social participation, radio ownership and listening behaviour while age was negatively correlated.
10. Knowledge of listeners (RA) was positively and significantly correlated with attitude, scientific orientation, social participation and listening behaviour.
11. Attitude of listeners (RA) was positively and significantly correlated with scientific orientation.
12. Extent of adoption of listeners (RA) was positively and significantly correlated with farm size and scientific orientation.
13. In case of non-listeners education, sub-centre contact, scientific orientation and innovation proneness were significantly and positively correlated with their level of knowledge.
14. Only innovation proneness was significantly correlated with attitude of non-listeners.

15. The extent of adoption of non-listeners was positively and significantly correlated with their age, education, farm size, sub-centre contact, scientific orientation and innovation proneness.
16. Result of path analysis showed that level of knowledge of listeners (RO & RA) and non-listeners was influenced with a maximum direct effect of innovation proneness and social participation respectively.
17. The attitude of listeners (RO & RA) was influenced with a positive maximum direct effect of innovation proneness and scientific orientation while the attitude of non-listeners was influenced only by innovation proneness.
18. The adoption of listeners (RO & RA) was influenced by social participation and farm size while the adoption of non-listeners was influenced by scientific orientation.
19. While comparing radio owners and radio accessors with respect to their listening behaviour, a significant difference was noticed with respect to their listening behaviour.

20. . . . . Ninety two per cent of listeners (RO) and eighty two per cent of listeners (RA) were found to listen "JTA and Budhiama" programme regularly, intensively, completely and purposely.

21. . . . . The enrollment of listeners in "Discussion" programme was about half of the total respondents.

22. . . . . No respondents were found to listen the "Magazine" and "Question Answer" programmes.



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\* original not seen



# APPENDICES

Appendix I

Agricultural Programmes Broadcasted from Radio  
Nepal during the first quarter of the year

(Baisakh, Jestha and Asadh) ie; 1985 (mid April to mid July)

1. Pest control of Maize crop
2. Temperate fruits and their management
3. Tobacco cultivation
4. Important Fungicides and their proper utilisation
5. Raising of Mango seedling
6. Weed management in Rice crop
7. Radish farming
8. Diseases of mango and their control measures
9. Storage of wheat.
10. High yielding variety of maize for hilly areas
11. Bordeaux mixture for apple garden
12. Mulching and water management in maize crop
13. Fingermillet cultivation-a brief review.
14. Control of stored grain pests
15. Potato cultivation
16. Bee keeping
17. Importance of soil for fruit growing
18. Groundnut as a oil seed crop

19. Important summer vegetables and their cultivation  
-an introduction
20. Poultry farming
21. Important Breeds of goat for hilly regions
22. Livestock production and management -a brief discussion
23. Raising of Nursery beds in rice crop
24. Control of some important disease of cattle
25. Importance diseases of rice and their control-a brief  
discussion.
26. Rearing of silk worms
27. Rearing of pigs
28. Different methods of rat control-a brief discussion.
29. Fish farming in paddy field
30. Artificial insemination in cattle and its advantage

Appendix II

Programme format and Schedule of Broad cast

| <u>Sl. No.</u> | <u>Format</u>                                                                                                                                                                           | <u>day</u> | <u>Time</u>    |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|
| 1.             | Agricultural magazine which includes several items of 3-5 minutes duration on various agricultural subjects in the form of straight talk and some-times discussion between two persons. | Sunday     | 6:45pm to 7pm  |
| 2.             | Question-and-Answer, in which questions received in the form of letter from the listeners are answered by a technique of dialogue between two persons.                                  | Monday     | 6:45pm to 7pm  |
| 3.             | Discussion between a group of farmers (acted by AIS Staff members) and Junior Technical Assistant (JTA), acted by a staff member-on seasonal topics of farming interest.                | Tuesday    | 6:45pm to 7pm  |
| 4.             | JTA and Budhi Ama which is a discussion format in a typical village setting between a worldly-wise old farming lady and JTA-a young extension worker.                                   | Friday     | 6:45pm to 7pm. |

Appendix III

Item selected from the content of the broadcasts to  
develop the knowledge test in Agriculture.

| Sl.No. | Items                                                               | Score                        |
|--------|---------------------------------------------------------------------|------------------------------|
| 1.     | Sevin is a insecticide for controlling army worm of maize           | Yes (1)<br>No (0)            |
| 2.     | Which is the herbicide that is best suited for killing grass weed.  | Correct (1)<br>Incorrect (0) |
| 3.     | Loose smut of wheat is due to fungal attack.                        | Yes (1)<br>No (0)            |
| 4.     | Bordeaux mixture is used for controlling apple scab.                | Yes (1)<br>No (0)            |
| 5.     | Give the dose of complex fertilizer per ropani in maize crop.       | Correct (1)<br>Incorrect (0) |
| 6.     | Name the chemical that can be used for the treatment of maize seed. | Correct (1)<br>Incorrect (0) |
| 7.     | Give the dose of urea per ropani in rice crop.                      | Correct (1)<br>Incorrect (0) |
| 8.     | The nit size for Mango seedling is 3x3x3 ft.                        | Yes (1)<br>No (0)            |
| 9.     | Give the proper spacing in maize crop.                              | Correct (1)<br>Incorrect (0) |
| 10.    | It is not fair to mix herbicide and pesticide together.             | Yes (1)<br>No (0)            |
| 11.    | Give one reason for mango malformation.                             | Correct (1)<br>Incorrect (0) |

| Sl. No. | Items                                                                    | Score                               |
|---------|--------------------------------------------------------------------------|-------------------------------------|
| 12.     | How will you protect the tobacco seedling in nursery?                    | <u>Correct</u> (1)<br>Incorrect (0) |
| 13.     | Weed control is not necessary in radish field.                           | <u>Yes</u> (1)<br>No (0)            |
| 14.     | Name one resistant variety of paddy against fungal disease.              | <u>Correct</u> (1)<br>Incorrect (0) |
| 15.     | Khumal yellow is the high yielding variety of maize.                     | <u>Yes</u> (1)<br>No (0)            |
| 16.     | Irrigation is urgently needed at knee height stage of maize.             | <u>Correct</u> (1)<br>Incorrect (0) |
| 17.     | Name one symptom of rust disease of wheat.                               | <u>Correct</u> (1)<br>Incorrect (0) |
| 18.     | Selphos is used to control stored grain pests.                           | <u>Yes</u> (1)<br>No (0)            |
| 19.     | Name one delicious variety of apple                                      | <u>Correct</u> (1)<br>Incorrect (0) |
| 20.     | Walnut can be grown only above 4000 ft. from mean sea level              | <u>Correct</u> (1)<br>Incorrect (0) |
| 21.     | Peach leaf curl is a disease caused by fungus.                           | <u>Correct</u> (1)<br>Incorrect (0) |
| 22.     | Lucknow 49 is a variety of guava.                                        | <u>Yes</u> (1)<br>No (0)            |
| 23.     | Finger millet requires more chemical fertilizer.                         | <u>Yes</u> (1)<br>No (0)            |
| 24.     | Soil with a hard pan in sub soil layer is not suited for any fruit crop. | <u>Yes</u> (1)<br>No (0)            |
| 25.     | Sandy loam soil is best suited for potato crop.                          | <u>Yes</u> (1)<br>No (0)            |

| Sl. No. | Items                                                                              | Score                               |
|---------|------------------------------------------------------------------------------------|-------------------------------------|
| 26.     | Name one fungal disease of groundnut                                               | <u>Correct (1)</u><br>Incorrect (0) |
| 27.     | Pine apple is the sweet variety of Mandarin.                                       | <u>Correct (1)</u><br>Incorrect (0) |
| 28.     | zinc phosphide is used for controlling rats.                                       | Yes (1)<br>No (0)                   |
| 29.     | Name one chemical which is used for controlling of leaf spot disease of rice       | <u>Correct (1)</u><br>Incorrect (0) |
| 30.     | Shannan is widely adopted goat variety for hilly region.                           | Yes (1)<br>No (0)                   |
| 31.     | Name one best breed of buffalo.                                                    | <u>Correct (1)</u><br>Incorrect (0) |
| 32.     | Late blight is a serious disease of potato.                                        | Yes (1)<br>No (0)                   |
| 33.     | Name one variety of brinjal.                                                       | <u>Correct (1)</u><br>Incorrect (0) |
| 34.     | The main advantage of artificial insemination is to obtain good self               | Yes (1)<br>No (0)                   |
| 35.     | Detol is used to control ticks in cattle.                                          | Yes (1)<br>No (0)                   |
| 36.     | Ranikhet disease in poultry can be controlled only by vaccination.                 | Yes (1)<br>No (0)                   |
| 37.     | Name one symptoms of anthrac disease of cattle                                     | <u>Correct (1)</u><br>Incorrect (0) |
| 38.     | What is the floor space requirement for one cattle                                 | <u>Correct (1)</u><br>Incorrect (0) |
| 39.     | Name the agency which supplies agricultural inputs                                 | <u>Correct (1)</u><br>Incorrect (0) |
| 40.     | Contour system of planting should adopted while planting the fruit in hilly areas. | Yes (1)<br>No (0)                   |

Appendix IV

Item analysis for knowledge test in agriculture

| Respond-<br>ents | Scores | Scores in<br>ascending<br>order | High<br>group | Medium<br>group | Low<br>group |
|------------------|--------|---------------------------------|---------------|-----------------|--------------|
| 1                | 9      | 3                               | 26            | 15              | 3            |
| 2                | 5      | 5                               | 27            | 17              | 5            |
| 3                | 3      | 6                               | 26            | 17              | 6            |
| 4                | 11     | 8                               | 30            | 19              | 8            |
| 5                | 19     | 9                               | 31            | 20              | 9            |
| 6                | 21     | 10                              | 32            | 21              | 10           |
| 7                | 32     | 11                              | 33            | 23              | 11           |
| 8                | 17     | 12                              | 33            | 24              | 12           |
| 9                | 15     | 13                              | 35            | 24              | 13           |
| 10               | 23     | 14                              | 38            | 25              | 14           |
| 11               | 38     | 15                              |               |                 |              |
| 12               | 31     | 17                              |               |                 |              |
| 13               | 25     | 17                              |               |                 |              |
| 14               | 24     | 19                              |               |                 |              |
| 15               | 28     | 20                              |               |                 |              |
| 16               | 10     | 21                              |               |                 |              |
| 17               | 36     | 23                              |               |                 |              |
| 18               | 30     | 24                              |               |                 |              |
| 19               | 26     | 24                              |               |                 |              |
| 20               | 12     | 25                              |               |                 |              |



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| Respon-<br>dents | Scores | Scores in<br>ascending<br>order | High<br>group | Medium<br>group | Low<br>group |
|------------------|--------|---------------------------------|---------------|-----------------|--------------|
| 21               | 32     | 26                              |               |                 |              |
| 22               | 24     | 27                              |               |                 |              |
| 23               | 35     | 28                              |               |                 |              |
| 24               | 27     | 30                              |               |                 |              |
| 25               | 20     | 31                              |               |                 |              |
| 26               | 17     | 32                              |               |                 |              |
| 27               | 13     | 33                              |               |                 |              |
| 28               | 8      | 33                              |               |                 |              |
| 29               | 33     | 35                              |               |                 |              |
| 30               | 14     | 38                              |               |                 |              |

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| Items | Correct answer in (N=30) |                         |                      | Diffi-<br>culty<br>index<br>$\frac{\sum ni}{N} \times 100$ | Discrimi-<br>nation<br>index<br>$\frac{\sum H-L}{N}$<br>3 |
|-------|--------------------------|-------------------------|----------------------|------------------------------------------------------------|-----------------------------------------------------------|
|       | High<br>group<br>(10)    | Medium<br>group<br>(10) | Low<br>group<br>(10) |                                                            |                                                           |
| 1*    | 8                        | 4                       | 3                    | 50.00                                                      | 0.5                                                       |
| 2     | 10                       | 10                      | 8                    | 93.33                                                      | 0.2                                                       |
| 3*    | 9                        | 9                       | 4                    | 73.33                                                      | 0.5                                                       |
| 4     | 5                        | 6                       | 8                    | 63.33                                                      | -0.3                                                      |
| 5     | 6                        | 7                       | 5                    | 60.00                                                      | 0.1                                                       |
| 6*    | 8                        | 7                       | 4                    | 63.33                                                      | 0.4                                                       |
| 7     | 2                        | 0                       | 0                    | 6.66                                                       | 0.2                                                       |
| 8*    | 6                        | 4                       | 2                    | 40.00                                                      | 0.4                                                       |
| 9     | 6                        | 3                       | 10                   | 63.33                                                      | -0.4                                                      |
| 10    | 3                        | 10                      | 7                    | 66.66                                                      | -0.4                                                      |
| 11    | 6                        | 3                       | 9                    | 60.00                                                      | -0.3                                                      |
| 12*   | 6                        | 4                       | 2                    | 40.00                                                      | 0.4                                                       |
| 13    | 2                        | 1                       | 0                    | 10.00                                                      | 0.2                                                       |
| 14*   | 8                        | 7                       | 4                    | 63.33                                                      | 0.4                                                       |
| 15    | 6                        | 7                       | 5                    | 60.00                                                      | 0.1                                                       |
| 16    | 5                        | 6                       | 8                    | 63.33                                                      | -0.3                                                      |
| 17*   | 9                        | 9                       | 4                    | 73.33                                                      | 0.5                                                       |
| 18    | 10                       | 10                      | 8                    | 93.33                                                      | 0.2                                                       |
| 19*   | 8                        | 4                       | 3                    | 50.00                                                      | 0.5                                                       |
| 20*   | 5                        | 0                       | 1                    | 20.00                                                      | 0.4                                                       |
| 21    | 4                        | 3                       | 8                    | 50.00                                                      | 0.1                                                       |
| 22    | 8                        | 10                      | 10                   | 93.33                                                      | -0.2                                                      |

| Items | Correct answer in (N=30) |                         |                      | Diffi-<br>culty<br>index<br>$\frac{\sum ni}{N} \times 100$ | Discri-<br>mination<br>index<br>$\frac{\sum H-L}{\frac{N}{3}}$ |
|-------|--------------------------|-------------------------|----------------------|------------------------------------------------------------|----------------------------------------------------------------|
|       | High<br>group<br>(10)    | Medium<br>group<br>(10) | Low<br>group<br>(10) |                                                            |                                                                |
| 23    | 9                        | 4                       | 9                    | 73.83                                                      | 0.0                                                            |
| 24*   | 8                        | 6                       | 5                    | 63.33                                                      | 0.3                                                            |
| 25    | 7                        | 6                       | 5                    | 60.00                                                      | 0.2                                                            |
| 26*   | 8                        | 7                       | 4                    | 63.33                                                      | 0.4                                                            |
| 27    | 3                        | 2                       | 0                    | 16.66                                                      | 0.3                                                            |
| 28*   | 7                        | 4                       | 2                    | 43.33                                                      | 0.5                                                            |
| 29    | 4                        | 6                       | 5                    | 50.00                                                      | -0.1                                                           |
| 30*   | 5                        | 6                       | 1                    | 40.00                                                      | 0.4                                                            |
| 31    | 5                        | 4                       | 2                    | 36.66                                                      | 0.3                                                            |
| 32*   | 9                        | 10                      | 5                    | 80.00                                                      | 0.4                                                            |
| 33*   | 8                        | 9                       | 2                    | 63.33                                                      | 0.6                                                            |
| 34    | 4                        | 8                       | 3                    | 50.00                                                      | 0.2                                                            |
| 35*   | 9                        | 9                       | 4                    | 73.33                                                      | 0.5                                                            |
| 36*   | 6                        | 5                       | 2                    | 43.33                                                      | 0.4                                                            |
| 37*   | 4                        | 6                       | 0                    | 33.33                                                      | 0.4                                                            |
| 38*   | 7                        | 0                       | 1                    | 26.66                                                      | 0.6                                                            |
| 39    | 5                        | 1                       | 4                    | 33.33                                                      | 0.1                                                            |
| 40*   | 10                       | 7                       | 2                    | 63.33                                                      | 0.8                                                            |

\*Items selected for study



3. Farm size

Please give land measurement in ropanias.

| Type of land | Own land operated | Land leased out | Land leased in | Total land          | Scoring system |
|--------------|-------------------|-----------------|----------------|---------------------|----------------|
| Khet         |                   |                 |                | No land             | (0)            |
| (low land)   |                   |                 |                | Less than 20 Rop.   | (M.F) (1)      |
| Pakho        |                   |                 |                | 20-40 Rop.          | (S.F) (2)      |
| (upland)     |                   |                 |                | Grater than 40 Rop. | (L.F) (3)      |

4. Sub-centre contact

Please indicate your visits to sub centre

| Visits                              | Score |
|-------------------------------------|-------|
| Not at all/never                    | (0)   |
| Rarely/once a week                  | (1)   |
| Frequently/ 2 times a week          | (2)   |
| Regularly /3 times a week and above | (3)   |

5. Scientific orientation (Supe 1969)

| Strongly agree | Agree | Undecided | Disagree | Strongly disagree |
|----------------|-------|-----------|----------|-------------------|
| (7)            | (5)   | (4)       | (3)      | (1)               |

- (+) 1. New methods of farming give better results to a farmer than old method.

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|                        |            |                     |               |                           |
|------------------------|------------|---------------------|---------------|---------------------------|
| Stro-<br>ngly<br>agree | Ag-<br>ree | Un-<br>deci-<br>ded | Dis-<br>agree | Stro-<br>ngly<br>disagree |
| (7)                    | (5)        | (4)                 | (3)           | (1)                       |

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- (-) 2. The way of farming of our forefathers is still the best way to farm today.
- (+) 3. Even a farmer with lots of experience should use new methods of farming.
- (+) 4. Though it takes time for a farmer to learn new methods in farming it is worth the efforts.
- (+) 5. A good farmer experiments with new ideas in farming.
- (+) 6. Traditional methods of farming have to be changed in order to rise the level of living of a farmer

#### 6. Innovation Proneness (Moulik 1965)

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| No.   | Items                                                                                                                                           | Most<br>Like | Least<br>like | <u>Most like</u><br><u>least like</u> |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------------------------------------|
| 1. a. | I try to keep myself upto date with information on new farm practices but that does not mean that I try out all the new methods in any farm-(2) |              |               |                                       |
| b.    | I feel restless till I try out a new farm practice I have heard about. (3)                                                                      |              |               |                                       |
| c.    | They talk of many new farm practices these days but who knows if they are better than the old ones.(1)                                          |              |               |                                       |

| No. | Items                                                                                                                             | Most<br>like | least<br>like | <u>Most like</u><br><u>least like</u> |
|-----|-----------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------------------------------------|
| 2.  | a. From time to time I have heard of several new farm practices and I have tried out most of them in the last few years. (3)      |              |               |                                       |
|     | b. I usually wait to see the results of my neighbours obtain before I try out the new farm practices. (2)                         |              |               |                                       |
|     | c. Some how I believe that the traditional way of farming are the best. (1)                                                       |              |               |                                       |
| 3.  | a. I am cautious about trying a new practice. (2)                                                                                 |              |               |                                       |
|     | b. After all our forefathers were wise in their farming practices and I do not see any reason for changing these old methods. (1) |              |               |                                       |
|     | c. Often new farm practices are not successfu, however, if they are promising, I would surely like to adopt them. (3)             |              |               |                                       |

-----  
Total Score  
-----

7. social participation (modified - Trivedi 1963)

Please indicate whether you are a member or office bearer in the following organisations.

| Sl. No. | Organisations         | Member | Office holder | Scoring system                               |
|---------|-----------------------|--------|---------------|----------------------------------------------|
| 1.      | Panchayat             |        |               | Non-member (0)                               |
| 2.      | Co-operative Society  |        |               | Membership in one Organisation (1)           |
| 3.      | 4-H club              |        |               | Membership in more than one organisation (2) |
| 4.      | Farmer's Organisation |        |               |                                              |
| 5.      | Youth Organisation    |        |               |                                              |
| 6.      | Labour organisation   |        |               | Office holder (3)                            |

8. Radio Ownership: How many radio receiving sets do you possess? Please indicate the following.

| Radio receiving set         | Number | Scoring system                             |
|-----------------------------|--------|--------------------------------------------|
| Radio                       |        | No possession of radio receiving set (0)   |
| Transister                  |        | Possession of each radio receiving set (1) |
| Radio cum cassette recorder |        | Total score                                |

9. Radio accessibility: How many radio receiving set are available in neighbourhood within a radius of 1 Km?

Please indicate following:

| Radio receiving set         | Number | Scoring system                                                        |
|-----------------------------|--------|-----------------------------------------------------------------------|
| Radio                       |        | No availability of radio receiving set within a radius of 1 Km. (0)   |
| Transister                  |        | Availability of each radio receiving set within a radius of 1 Km. (1) |
| Radio cum cassette recorder |        | Total Score                                                           |



10. Extent of knowledge in agriculture (on programme broadcasted.)

Below are given a set of questions to test the knowledge of the listeners and non-listeners of farm broadcasts. Please answers them (for correct answers give 1 mark and for in correct answers give zero mark).

| Sl. No. | Items                                                                   | Scoring                       |
|---------|-------------------------------------------------------------------------|-------------------------------|
| 1.      | Sevin is a insecticide for controlling army worm of maize.              | Yes (1)<br>No (0)             |
| 2.      | Loose smut of wheat is due to fungal attack.                            | Yes (1)<br>No (0)             |
| 3.      | Name of the chemical that can be used for the treatment of maize seed.  | Correct (1)<br>In correct (0) |
| 4.      | The pit size for Mango seedling is 3x3x3 ft.                            | Yes (1)<br>No (0)             |
| 5.      | How will you protect the tobacto seedling in nursery.                   | Correct (1)<br>Incorrect (0)  |
| 6.      | Name one resistant variety of paddý against fungal disease.             | Correct (1)<br>Incorrect (0)  |
| 7.      | Name one symptom of rust disease of wheat.                              | Correct (1)<br>Incorrect (0)  |
| 8.      | Name one delicious variety of apple.                                    | Correct (1)<br>Incorrect (0)  |
| 9.      | Walnut can be grown only above 4000 ft. from mean sea level.            | Correct (1)<br>Incorrect (0)  |
| 10.     | soil with a hard pan in subsoil layer is not suited for any fruit crop. | Yes (1)<br>No (0)             |
| 11.     | Name one fungal disease of groundnut.                                   | Correct (1)<br>Incorrect (0)  |

| Sl. No. | Items                                                                                       | Scoring                      |
|---------|---------------------------------------------------------------------------------------------|------------------------------|
| 12.     | zinc phosphide is used for controlling rats.                                                | Yes (1)<br>No (0)            |
| 13.     | Shannan is widely adopted goat variety for hilly region.                                    | Yes (1)<br>No (0)            |
| 14.     | Late blight is a serious disease potato.                                                    | Yes (1)<br>No (0)            |
| 15.     | Name one variety of Brinjal.                                                                | Correct (1)<br>Incorrect (0) |
| 16.     | Detol is used to control ticks in cattle.                                                   | Yes (1)<br>No (0)            |
| 17.     | Ranikhet disease in poultry can be controlled only by vaccination.                          | Yes (1)<br>No (0)            |
| 18.     | Name one symptom of anthrac disease of cattle.                                              | Correct (1)<br>Incorrect (0) |
| 19.     | What is the floor space requirement for one cattle?                                         | Correct (1)<br>Incorrect (0) |
| 20.     | Contour system of planting should be adopted while planting the fruit trees in hilly areas. | Yes (1)<br>No (0)            |

11. Attitude towards farm broadcasts (Chandrakandan 1982)

| Nos. | Items                                                                                                  | Agree | Neutral | Disagree |
|------|--------------------------------------------------------------------------------------------------------|-------|---------|----------|
|      |                                                                                                        | (2)   | (1)     | (0)      |
| + 1. | By listening to the farm programme in radio it is useful to farmers.                                   |       |         |          |
| - 2. | It is waste of time to hear these programmes.                                                          |       |         |          |
| + 3. | Regularity in listening of these programmes will help the farmers in increasing yield and income.      |       |         |          |
| - 4. | The practices recommended in these programmes are suited only for high income farmers.                 |       |         |          |
| + 5. | If farmers make use of the recommendations given in these programmes they would surely get more yield. |       |         |          |
| -6 . | There is a doubt in the credibility of these farm broadcast programmes.                                |       |         |          |

12. Extent of adoption of recommendations given through farm broadcasts about the improved practices of maize cultivation.

| Sl. No. | Areas   | Recommendations given through farm broadcasts. | Extent of adoption |                    |
|---------|---------|------------------------------------------------|--------------------|--------------------|
|         |         |                                                | Adopted<br>(1)     | Not adopted<br>(0) |
| 1.      | Variety | a. Khumal yellow                               |                    |                    |
|         |         | b. Hetauda composite                           |                    |                    |
|         |         | c. Rampur yellow                               |                    |                    |
|         |         | d. Janaki                                      |                    |                    |

| Sl. No. | Areas            | Recommendations given through farm broadcasts.                                              | Extent of adoption |                 |
|---------|------------------|---------------------------------------------------------------------------------------------|--------------------|-----------------|
|         |                  |                                                                                             | Adopted (1)        | Not adopted (0) |
| 10.     | Insects          | a. Cut worms - BHC dust @ 1 kg/ropani                                                       |                    |                 |
|         |                  | b. Borers - sevin grannules @ 4-7 grannules/plant                                           |                    |                 |
|         |                  | c. Army worm - Metacid/1 mil. in 1 lit. of the spray.                                       |                    |                 |
| 11.     | Diseases control | a. Stem rot - Increase spacing, donot increase the dose of fertilizer and provide drainage. |                    |                 |
|         |                  | b. Mildew - use resistant variety                                                           |                    |                 |
|         |                  | c. Cob rot - Diethane-M45 at 16 days interval.                                              |                    |                 |
| 12.     | Harvesting       | 130-140 days after sowing                                                                   |                    |                 |
| 13.     | Storage          | Store in air tight drum and put 1-2 selphos tablet per metric tonne of grain.               |                    |                 |
|         |                  | Total                                                                                       | Scores             |                 |

### 13. Listening Behaviour (Philip 1984)

Below are given 4 radio programmes. How do you listen to them? make tick marks in the appropriate columns in each of the 4 programmes.

| Programmes                                      | Regularity +  |               |                    |            | Intensity +   |               |                        | Duration +   |                      | Purpose             |                       |                              | To-<br>tal<br>score. |                      |
|-------------------------------------------------|---------------|---------------|--------------------|------------|---------------|---------------|------------------------|--------------|----------------------|---------------------|-----------------------|------------------------------|----------------------|----------------------|
|                                                 | Every<br>week | Most<br>often | Cas-<br>ual-<br>ly | Ne-<br>ver | Invo-<br>lved | Foc-<br>ussed | Lea-<br>rning-<br>only | Eng-<br>aged | Com-<br>ple-<br>tely | Part-<br>ial-<br>ly | Edu-<br>cat-<br>ional | Int-<br>er-<br>tain-<br>ment |                      | Acc-<br>iden-<br>tal |
|                                                 | (3)           | (2)           | (1)                | (0)        | (4)           | (3)           | (2)                    | (1)          | (2)                  | (1)                 | (3)                   | (2)                          | (1)                  |                      |
| 1. Agricult-<br>ural Magaz-<br>ines.            |               |               |                    |            |               |               |                        |              |                      |                     |                       |                              |                      |                      |
| 2. Question<br>and Answer.                      |               |               |                    |            |               |               |                        |              |                      |                     |                       |                              |                      |                      |
| 3. Discussion<br>between<br>farmers and<br>JTA. |               |               |                    |            |               |               |                        |              |                      |                     |                       |                              |                      |                      |
| 4. JTA and<br>Budhi Anna.                       |               |               |                    |            |               |               |                        |              |                      |                     |                       |                              |                      |                      |

Total score =

11. Attitude towards farm broadcastg (Chandrakandan 1982)

| Nos. | Items                                                                                                  | Agree | Neutral | Disagree |
|------|--------------------------------------------------------------------------------------------------------|-------|---------|----------|
|      |                                                                                                        | (2)   | (1)     | (0)      |
| + 1. | By listening to the farm programme in radio it is useful to farmers.                                   |       |         |          |
| - 2. | It is waste of time to hear these programmes.                                                          |       |         |          |
| + 3. | Regularity in listening of these programmes will help the farmers in increasing yield and income.      |       |         |          |
| - 4. | The practices recommended in these programmes are suited only for high income farmers.                 |       |         |          |
| + 5. | If farmers make use of the recommendations given in these programmes they would surely get more yield. |       |         |          |
| -6 . | There is a doubt in the credibility of these farm broadcast programmes.                                |       |         |          |

12. Extent of adoption of recommendations given through farm broadcasts about the improved practices of maize cultivation.

| Sl. No. | Areas   | Recommendations given through farm broad casts. | Extent of adoption  |                            |
|---------|---------|-------------------------------------------------|---------------------|----------------------------|
|         |         |                                                 | Adopt-<br>ed<br>(1) | Not<br>ado-<br>pted<br>(0) |
| 1.      | Variety | a. Khumal yellow                                |                     |                            |
|         |         | b. Hetauda composite                            |                     |                            |
|         |         | c. Rampur yellow                                |                     |                            |
|         |         | d. Janaki                                       |                     |                            |

| Sl. No. | Areas          | Recommendations given through farm broadcasts.                                                                                                              | Extent of adoption |                 |
|---------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|         |                |                                                                                                                                                             | Adopted (1)        | Not adopted (0) |
| 2.      | Seed rate      | 15-20 kg/ha or 1 kg/ropani                                                                                                                                  |                    |                 |
| 3.      | Sowing time    | April - May                                                                                                                                                 |                    |                 |
| 4.      | Manuring       | F.Y.M. 500 kg/ropani<br>before sowing the seed                                                                                                              |                    |                 |
| 5.      | Fortilizer     | a. Complex (20:20:10)<br>@ 7.5 kg/ropani.<br><br>b. Muriate of potash<br>@ 2.5 kg/ropani.<br><br>c. Urea @ 3 kg/ropani, apply<br>before sowing of<br>seeds. |                    |                 |
| 6.      | Seed treatment | Captan @ 2 gm/kg                                                                                                                                            |                    |                 |
| 7.      | Spacing        | a. Plant to plant = 25cm<br><br>b. Row to Row = 75cm                                                                                                        |                    |                 |
| 8.      | Irrigation     | From sowing to grain<br>formation at 15 days<br>intervals.                                                                                                  |                    |                 |
| 9.      | Weed control   | a. First weeding within<br>one month<br><br>b. Second weeding and<br>earthing up at 55-60<br>days after sowing.                                             |                    |                 |

| Sl. No. | Areas            | Recommendations given through farm broadcasts.                                                                                                                                                    | Extent of adoption |                 |
|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|         |                  |                                                                                                                                                                                                   | Adopted (1)        | Not adopted (0) |
| 10.     | Insects          | <p>a. Cut worms - BHC dust @ 1 kg/ropani</p> <p>b. Borers - Sevin grannules @ 4-7 grannules/plant</p> <p>c. Army worm - Metacid/1 mil. in 1 lit. of the spray.</p>                                |                    |                 |
| 11.     | Diseases control | <p>a. Stem rot - Increase spacing, donot increase the dose of fertilizer and provide drainage.</p> <p>b. Mildew - use resistant variety</p> <p>c. Cob rot - Diethane-M45 at 16 days interval.</p> |                    |                 |
| 12.     | Harvesting       | 130-140 days after sowing                                                                                                                                                                         |                    |                 |
| 13.     | Storage          | Store in air tight drum and put 1-2 selphos tablet per metric tonne of grain.                                                                                                                     |                    |                 |
|         |                  | <b>Total</b>                                                                                                                                                                                      | <b>Scores</b>      |                 |



13. Listening Behaviour (Philip 1984)

Below are given 4 radio programmes. How do you listen to them? make tick marks in the appropriate columns in each of the 4 programmes.

| Programmes                                      | Regularity +       |                    |                    | Intensity + |               |                    | Duration +          |              | Purpose              |                     |                       | To-<br>tal<br>sc-<br>ores. |                             |
|-------------------------------------------------|--------------------|--------------------|--------------------|-------------|---------------|--------------------|---------------------|--------------|----------------------|---------------------|-----------------------|----------------------------|-----------------------------|
|                                                 | Eve-<br>ry<br>week | Most<br>oft-<br>en | Cas-<br>ual-<br>ly | Ne-<br>ver  | Invo-<br>lved | Foc-<br>uss-<br>ed | Lea-<br>sur-<br>ely | Eng-<br>aged | Com-<br>ple-<br>tely | Part-<br>ial-<br>ly | Edu-<br>cat-<br>ional |                            | Int-<br>er-<br>tai-<br>ment |
|                                                 | (3)                | (2)                | (1)                | (0)         | (4)           | (3)                | (2)                 | (1)          | (2)                  | (1)                 | (3)                   | (2)                        | (1)                         |
| 1. Agricult-<br>ural Magaz-<br>ines.            |                    |                    |                    |             |               |                    |                     |              |                      |                     |                       |                            |                             |
| 2. Question<br>and Answer.                      |                    |                    |                    |             |               |                    |                     |              |                      |                     |                       |                            |                             |
| 3. Discussion<br>between<br>farmers and<br>JTA. |                    |                    |                    |             |               |                    |                     |              |                      |                     |                       |                            |                             |
| 4. JTA and<br>Budhi Amma.                       |                    |                    |                    |             |               |                    |                     |              |                      |                     |                       |                            |                             |

Total Score =

**IMPACT OF FARM BROADCAST ON THE  
ADOPTION OF AGRICULTURAL INNOVATIONS  
BY THE FARMERS OF NUWAKOT DISTRICT OF NEPAL**

**BY  
NARAYAN PRASAD KHANAL**

**ABSTRACT OF THE THESIS  
SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE DEGREE  
MASTER OF SCIENCE IN AGRICULTURE  
(AGRICULTURAL EXTENSION)  
FACULTY OF AGRICULTURE  
KERALA AGRICULTURAL UNIVERSITY**

**DEPARTMENT OF AGRICULTURAL EXTENSION  
COLLEGE OF AGRICULTURE  
VELLAYANI, TRIVANDRUM**

**1986**

## A B S T R A C T

This study titled "Impact of farm broadcast on the adoption of agricultural innovations by the Farmers of Nuwakot District of Nepal" was carried out with following objectives.

- (1) To assess the level of knowledge of the radio listening farmers in agriculture.
- (2) To study the attitude of the farmer listeners towards farm broadcasts.
- (3) To measure the extent of adoption on recommendations given through farm broadcasts.
- (4) To analyse the listening behaviour of the farmers with respect to personal characteristics.

The selected characteristics were age, education, farm size, scientific orientation, innovation proneness, social participation, radio ownership, radio accessibility and listening behaviour.

The available measurement techniques and scoring systems were used for independent variables such as education and social participation (Trivedi-1963), scientific orientation (Supe-1969), innovation proneness (Moulik-1965). Age was measured in terms of number of years the respondent

had completed, and number of ropanies cultivated was taken as the measure of farm size. Radio ownership was measured in terms of possession of number of radio receiving set and radio accessibility was measured in terms of availability of radio receiving set within a radius of one kilometer from respondents' house, sub centre contact in terms of number of visit to sub-centre for technical advice and inputs. Listening behaviour was measured in terms of regularity, intensity, duration and purpose of listening.

Instruments measuring attitude scale developed by Chandrakandan (1982) was used. For the measurement of level of knowledge a test including twenty items was developed based on difficulty and discrimination indices. Extent of adoption was measured with thirteen recommended practices for maize cultivation.

Data was collected from 75 listeners and 75 non-listeners using a pretested valid interview schedule. Data was statistically analysed using appropriate parametric techniques.

The sillient findings of this study are the following.

Knowledge, attitude and extent of adoption of listeners were significantly higher than that of non-listeners. Listeners differed with non-listeners with

respect to age, education, farm size, sub-centre contact, scientific orientation, innovation proneness except social participation. Radio owners differed with radio accessors in age, education, innovation proneness and listening behaviour but no difference was noticed between them with their farm size, sub-centre contact, scientific orientation and social participation. Knowledge and attitude and extent of adoption of listeners (RO) were significantly correlated with highest correlation value and influenced with maximum positive direct effect by innovation proneness and social participation respectively. While in case of listeners (RA) knowledge & attitude and extent of adoption were influenced with maximum direct effect and highest correlation value with scientific orientation and farm size respectively.

In non-listeners education, innovation proneness and scientific orientation had influenced on knowledge, attitude and extent of adoption respectively with a highest significant correlation value and maximum positive direct effect.

"JTA and Budhiana" programme was the most preferred programme by almost all the respondents in terms of their listening behaviour as compared to "Discussion" programme and no respondents were found to listen the "Magazine" and "Question-Answer" programmes.