FARMERS’ PERCEPTION ABOUT USEFULNESS OF AGRICULTURE EXTENSION SYSTEM

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FARMERS’ PERCEPTION ABOUT USEFULNESS OF AGRICULTURE EXTENSION SYSTEM

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EXTENSION EDUCATION

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ABSTRACT

The perception plays an important role in success or failure of extension system. At present various extension education programmes are being implemented by State and Central Government, non-Government Organizations, State Agricultural Universities and Private agencies. The success or failure of the extension system depends upon how far its clients perceived the same.

The options to achieve more agricultural production are limited because area under agriculture cannot be increased further. Increase in agriculture production would have to be necessarily obtained by appropriate agricultural technology and its speedy transfer to farmers through efficient extension system. In the present context of globalization and liberalization a shift is taking place in

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agriculture from more subsistence to commercial level. The
liberalization of Indian economy made farmers to compete at
international level. The intensive cultivation of land without
conservation of natural resources resulted into imbalancing
of economy. This has also resulted into various
atmospheric changes, leading to form new farming
situations.

To meet these emerging issues, problems and
challenges in agricultural sector, it is felt necessary to have
a strong and efficient extension system. Therefore to
understand the usefulness of present extension system for
its beneficiaries, the study “Farmers’ perception about
usefulness of extension system” was undertaken in
Saurashtra Region of Gujarat State with following specific
objectives:

1. To study the selected characteristics of farmers
2. To develop and standardize a scale to measure the
   perception of farmers about usefulness of extension
   system
3. To measure the perception of farmers about usefulness
   of extension system
4. To explore the relational analysis of selected variables
   of farmers
5. To know the shortfalls in present extension system as
   perceived by farmers
6. To study the expectations of the farmers about the
   future extension system
In order to achieve the objectives, a sample of 180 respondents, representing 14 villages of 7 talukas of 4 districts of Saurashtra region of Gujarat State was drawn by using random sampling technique. A scale was develop to measure the farmers’ perception about usefulness of agriculture extension system by employing the methodology suggested by Likert (1932) with slight modifications. The selected independent variables were measured either with the help of developed scale or by developing schedules and indices. An interview schedule with questions on the dependent and independent variables was used for collecting the data from the respondents. The data were collected by personal interview method. The data so collected were coded, classified, tabulated and analyzed in order to make the findings meaningful. The findings of the study are summarized as below:

1. About more than half (53.89 per cent) of the respondents perceived the existing extension system as useful
2. Slightly less than one-half (47.22 per cent) of the respondents were from the young aged group, majority (55.55 per cent) of the respondents were educated up to primary level of education, majority (61.11 per cent) of the respondents had medium size of family, majority (65.00 per cent) of the respondents had medium level of reading habit, majority (76.11 per cent) of the respondents had medium decision making ability, two out of five (40.00 per cent) of the respondents were
untrained, one-half (50.00 per cent) of the respondents had medium annual income (Rs. 15,000 to 25,000), more than half (56.50 per cent) of the respondents had medium social participation, two-fifth of the respondents (40.00 per cent) were from the medium size of land holding category, majority (72.78 per cent) of the respondents had medium irrigation potentiality, majority (72.22 per cent) of the respondents had medium level of scientific orientation, more than half (52.78 per cent) of the respondents had medium level of innovativeness, majority (80.56 per cent) of the respondents had medium risk orientation, majority (76.67 per cent) of the respondents were from medium economic motivation group, majority (75.00 per cent) of the respondents were from medium achievement motivation group, more than half (51.11 per cent) of the respondents were found to have medium level of credit orientation, majority (65.56 per cent) of the respondents were found to have medium level of market orientation, majority (72.22 per cent) of the respondents were found to have medium level of overall modernity, majority (60.65 per cent) of the respondents were found to have medium level of communication behaviour, majority (69.44 per cent) of the respondents had medium level of mass media exposure, majority (61.11 per cent) of the respondents had medium extension participation and majority (58.89 per cent) of the respondents had medium level of localite-cosmopolite value orientation.
3. Education, reading habit, overall modernity, mass media exposure, communication behavior and extension participation were found positive and significantly correlated with perception about usefulness of extension system. While, age was negative and significantly correlated with perception about usefulness of extension system.

4. All the 22 selected independent variables put together explained 60.00 per cent ($R^2=0.60$) total variation in perception about usefulness of extension system.

5. Education alone accounted 50.00 percent variation in perception about usefulness of extension system. Education, localite-cosmopolite value orientation, communication behaviour, mass media exposure, overall modernity, reading habit and age put together explained 59.00 per cent variation in perception about usefulness of extension system.

6. Major shortfalls faced by the respondents in perception about usefulness of extension system were: unavailability of services of VEWs’ as and when required, lack of technical competence with grass root level extension functionaries, VEW’s lacking information pertaining to location specific problem, latest technologies did not fulfill the farmers need and lack of timely information about latest technology.
7. Major expectations offered by the respondents to overcome the major shortfalls were: provision of VEWs’ in each village, on the spot solution to farmers problem be made available, new technologies must be evolved as per needs of the farmers, before transmission of any new technologies it must adequately refine on farmers field under close supervision of researchers, extension personnel and farmers and appointment of grass root level extension personnel on the basis of their qualification, aptitude test and physical fitness
This is to certify that thesis entitled "Farmers' perception about usefulness of agriculture extension system" submitted by Mr. Chavda Vallabhbhai Naranbhai to Junagadh Agricultural University, Junagadh in partial fulfillment of the requirements for the degree of Ph.D. in the subject of Extension Education after recommendation by the external examiner was defended by the candidate before the following members of the examination committee. The performance of the candidate in the oral examination was satisfactory; we therefore, recommend that the thesis be approved.

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This is to certify that Mr. Chavda Vallabh Naranbhai student of Ph. D. (class) Extension Education (Department) has made all corrections/modifications in the thesis entitled "Farmers' perception about usefulness of agriculture extension system" as suggested by the external examiner and advisory committee in the oral examination held on 18.09.2006. The final copies of the thesis duly bound and corrected have been submitted on------------------

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**Place:** Junagadh  
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( V. N. Chavda)
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CHAPTER I

INTRODUCTION

Indian agriculture is diversified which includes farming, plantation, forestry, animal husbandry, poultry, fishery, etc. In its broadest concept, even agro-based industries located in rural areas are also included in it. In India agriculture accounts for nearly half of the nation’s income and offer employment to two-third of working population. It provides raw material for most of our industries and accounts for about 48 per cent of our countries foreign exchange earning (Kumar 1998).

During the past four decades significant development in agriculture has occurred in India. Five year plans undertaken by government as well as scientific breakthrough on the agricultural front have resulted in spectacular increase in agricultural production, with compound growth rate of 2.5 per cent per annum over the last three decades. The production in the country has seen a great leap from 50 million tones in the 1950 to 220 million tones in 2003. The dream of self-sufficiency come true, as a result of improved seeds, fertilizers, cultivation practices, irrigation and other complementary inputs.

Yet, the task on hand in this respect is still gigantic, as it has to feed its enormous growing population. It is estimated that Indian population by 2010 will be about 1200 million. Out of which the rural population will be about 840 million (Kumar, 1998). The population growth
rate by 2010 is estimated at 1.47 per cent in rural areas and 2.61 per cent in urban areas. Keeping all these facts in view the total human demand for food grain will be 245.7 million tonnes. The demand for milk, fruits, vegetables, meat, eggs and fish by 2010 is estimated 103.7 million tonnes (Prasad, 2000).

There are limited options to achieve more agricultural production because area under agriculture cannot be increased further. Increase in agricultural production would have to be necessarily obtained by appropriate agricultural technology and its speedy transfer to farmers through efficient extension system. On the extension side several extension programmes are being launched both at centre and state level to transfer the existing technology to millions of farmers residing in lakhs of villages. Some of them are informational and designed to make farmers aware of technologies and facilities, etc. Others are motivational to make farmers accept and adopt the new technology whereas, few are instructional whereby the farmers are made to know, understood, appreciate and adopt the technology thereby resulting in their successful internalization.

Agricultural Extension System of the country has contributed significantly in the agricultural development. Over the years, it has expanded further and now reaches to almost every nook and corner of the country. National extension service to disseminate agricultural technology to the farmers was launched in 1953. Since, then the

In addition, some new programmes like Institutional Village Linkage Programme (IVLP), Agricultural Technology Management Agency (ATMA) and Agricultural Technology Information Centre (ATIC) are also being undertaken presently under the National Agricultural Technology Project (NATP) being funded by the World Bank.

The extension system has the main responsibility of bridging the gap between research and users of technology by establishing two ways communication process i.e. transferring the technology from its source of generation to the users in the field and providing proper and timely feedback to the research system. For this purpose training is one of the most important activities of the extension system. It primarily addresses the capacity building issues of the extension system. The large net-work of front-line
ICAR-SAU extension system consists of 415 Krushi Vigyan Kendras (KVKs), 10 Trainers' Training Centres (TTC), 70 Institution Village Linkage Project Centres, and 44 Agricultural Technology Information Centre (ATIC). Through this network, training of 6.0 lakh farmers and farm women every year in agriculture and allied fields such as crop production, plant protection, livestock production and management, soil and water management, farm machinery and tools, and home science is completed in the country (Source: website of ICAR.org).

Some co-operative and private agency/organization viz; Indian Farmer Fertilizer Co-operative (IFFCO), Gujarat State Fertilizer Company (GSFC), Gujarat Narmada Fertilizer Company (GNFC), Ambuja Cement Foundation and Savathayay Parivar etc. have also done extension activities by providing guidance, training, inputs and related literature to the farmers. Thus, extension is the general mission and mandate of various developmental departments concern with rural upliftment whereas; it is very particular in the field of agriculture.

Perception is an individual's awareness aspect of behaviour, for which it is the way each person processes the raw data he or she perceives from the environment into meaningful patterns (Silverman, 1979). Perception is the first event in the mind, which leads from the stimulus to action (Boring, et al., 1961).

The success of any programme of the agriculture extension system can be measured by the extent to which it
is perceived as useful by its targeted beneficiaries. Hence, an attempt was made in this direction to assess the "Farmers' perception about the usefulness of agriculture extension system". Perception of the individual mostly depends on his/her need of message. Hence the extension worker should communicate only need-based messages. If the farmer is to perceive the object or messages properly and accurately, the extension worker has to understand the qualities of stimulus and perceive it properly and then communicate the intervention.

To cope up with all these emerging issues, problems, and challenges, it is necessary to have strong, efficient and sophisticated extension system. It is always felt that strong, efficient, professional and effective extension system is a prerequisite for increasing agricultural production. Therefore, the present study is planned to know the perception of farmers about usefulness of present status of extension system. The study also aimed to analyze the shortfalls in the present extension system and expectations of farmers about the future extension system.

1.1 STATEMENT OF THE PROBLEM

Extension is the central mechanism in the agricultural development process, both in terms of technology transfer and resource development. The development of agriculture is mostly depending upon agricultural extension system. Looking to the prevailing extension system, it is felt that
there is a wide gap exist between available agricultural technology and its adoption on farmers field.

In the present context of globalization and liberalization, a shift taking place in agriculture sector from more subsistence to commercial level. With liberalization of economy our agricultural markets are opened to global producers. This has shifted emphasis on agricultural production at globally competitive prices.

Another problem is the intensive cultivation of land without conservation of natural resources resulted into imbalancing of economy. This has also resulted in to various atmospheric changes, leading to form new farming situations. The problem of farming community also changed due to the ecological imbalancing.

To meet these emerging issues, problems and challenges in agricultural sector, it is worth necessary to have a strong and efficient extension system. Therefore to understand the usefulness of present extension system for its beneficiaries, the study entitled “Farmers’ Perception about Usefulness of Agriculture Extension System” was undertaken in Saurashtra region of Gujarat State. The study also aimed to analyze the shortfalls in present extension system and expectations about the future extension system.
1.2 OBJECTIVES OF THE STUDY

The present study is conceived with a general objective to measure the perception of farmers about usefulness of extension system. The specific objectives of the study are:

1.2.1 To study the selected characteristics of the farmers
1.2.2 To develop and standardize a scale to measure the perception of farmers about usefulness of extension system
1.2.3 To measure the perception of farmers about usefulness of extension system
1.2.4 To explore the relational analysis of selected variables of farmers
1.2.5 To know the shortfalls in present extension system as perceived by farmers
1.2.6 To study the expectations of the farmers about the future extension system

1.3 IMPORTANCE OF THE STUDY

There are limited options to achieve more agricultural production because area under agriculture cannot be increased further. Increase in agriculture production would have to be necessarily obtained by appropriate agricultural technology and its speedy transfer to farmers through efficient extension system. In the present context of globalization and liberalization a shift is taking place in agriculture from more subsistence to commercial level. The liberalization of Indian economy made farmers to compete at
international level. The ecological imbalancing resulted into change in agricultural situations.

To face all these problems, challenges and issues, it is essential to have strong and effective agricultural extension system. Therefore, it is felt essential to undertake this investigation so as to understand the extent of perception of existing extension system in terms of its usefulness to farmers in Saurashtra region of Gujarat State. The results of this study will be useful to the extension personnel, planners, policy makers and administrators to plan the future extension strategies.

1.4 LIMITATIONS OF THE STUDY
1.4.1 The study was limited to the farmers of four district of Saurashtra region of Gujarat State.
1.4.2 Only some of the selected characteristics of farmers have studied.
1.4.3 The study was limited to only 180 respondents of 4 district of Saurashtra region.
1.4.4 The study was limited to measure the extent of perception of farmers about usefulness of extension system.
A brief review of literature pertaining to the field of research covered in the present study has been presented in this chapter under the following sections:

2.1 Characteristics of the farmers
2.2 Perception of farmers about the usefulness of extension system
2.3 Relationship between different characteristics of the farmers and dependent variable
2.4 Shortfalls in present extension system as perceived by farmers
2.5 Expectation about future extension system

2.1 CHARACTERISTICS OF THE FARMERS

2.1.1 Personal characteristics

2.1.1.1 Age

Age is an important independent variable influences in the perception development process. A brief account of review has been presented here.

Amir (1996) reported that 58.16 per cent of the groundnut growers were middle aged where as 14.17 and 26.67 per cent of the respondent belonged to young and old age groups, respectively.

Gosai (1997) expressed that majority of trained (82.22 %) and untrained (81.11 %) farm women belonged to young age group up to 30 years.
Ahire et al. (1999) reported that the average age of drip system adopted farmers was 44.71.

Varma (2000) reported that 57.42 per cent groundnut growers belonged to old age group followed by middle (35.16 %) and young age (7.42 %) groups.

Chhodavadia (2001) found that a majority of the demonstrator farmers (69.23%) and non demonstrator farmers (63.46%) belongs to middle age group.

Javia (2004) reported that nearly three-fifth of the groundnut growers (61.00 per cent) belonged to middle age group, whereas, 26.00 per cent and 13.00 per cent of the groundnut growers belonged to young and old age group, respectively.

2.1.1.2 Education

Education helps in evaluating the improved recommended technologies. It also helps to develop better understanding and thinking. Generally it is believed that it helps in widening the new ideas. A brief work done in this regards is presented as under.

Narayanswamy and Ramchandra (1988) reported that majority of the small farmers i.e. 60 per cent were illiterate.

Baidiyavadra (1993) revealed that 60 per cent of the groundnut growers were educated up to primary level, whereas, 15.00 per cent of them were educated up to secondary level and 20.84 per cent were illiterate and only 4.16 per cent of the groundnut growers were educated up to higher secondary and college level.
Amir (1996) indicated that half (50 %) of the summer groundnut growers were educated up to primary level, whereas, 16.67 per cent of the respondents were educated up to secondary level and 30.83 per cent of the respondents were illiterate. Out of this only 2.5 per cent of the respondents were educated above the secondary level.

Kanani (1998) pointed out that three fourth (75.00%) of the groundnut growers were educated up to primary level and only 20 per cent of them were educated up to higher secondary level.

Verma (2000) stated that less than half i.e. 44.44 per cent of the respondents were educated up to primary level, while 24.22 per cent and 23.05 per cent respondents belonged to illiterate and secondary education level group respectively. Only 8.59 per cent of the respondents had higher education.

Javia (2004) reported that 59.00 per cent groundnut growers had primary education, 18.00 per cent had secondary level of education, while 16.00 per cent and 07.00 per cent of them belonged to illiterate and higher education level group, respectively.

2.1.1.3 Size of family

In Indian context there is tremendous variation in size of family. Some of the research work in this regard is presented below.

Sakariya (1991) concluded that majority (66.0%) of the groundnut growing farm women had large size of family
(above 5 members) and 34.0 per cent of them had small size of family.

Girbani (1993) indicated that majority (72.00%) of the trained respondents and untrained (84.00%) respondents had large size of family.

Bariya (1997) stated that more than half of the rural women (57.14%) belonged to medium family followed by large family (28.57%) and small family (14.29%) respectively.

Parmar (1998) observed that majority of the trained (77.77 per cent) and untrained (71.11 per cent) farmers belonged to large size of family.

Bhatt (2002) found that the mean size of family of trained and untrained farm women was 6.78 and 6.40, respectively.

2.1.1.4 Reading habit

Bharad (1988) indicated that majority of the respondent readers of “Krushi Govidya” were the subscribers of the farm magazine since 1 to 2 years, reading it with the purpose of gaining knowledge.

Sakariya (1991) indicated that 66.0% of the farm women had poor reading habit followed by good (20.0%) reading habit. The only 4.0 per cent of the respondents had very good reading habit.

Gosai (1997) observed that majority of the trained (65.66%) and untrained (63.33%) farm women belong to category of medium reading habit.
2.1.1.5 Decision making ability

Decision-making is the root of every human activity. The participation in decision reflects the status of an individual. Considering the importance of this aspect, a brief account of literature in this regard has been presented below.

Ekale and Kulkarni (1989) observed that elder male of the farmer’s family influenced the decision of the whole family.

Nimje et al. (1989) observed that majority of the decisions were taken by husband alone in farming community.

Sureshkumar (1997) found that more than two-fifth (46.70 per cent) of the farmers fell under medium category of decision making ability followed by low and high category.

Van den Ban and Mkwawa (1997) explore that to take maximum advantage of extension system, farmers should have good decision-making ability.

2.1.1.6 Training received

Chothani (1999) concluded that a great majority (91.00 per cent) of the mango orchard growers need medium training in relation to mango crop production.

Jadav (2005) concluded that 76.50 per cent mango orchad growers were less trained.
2.1.2 Socio-economic characteristics

2.1.2.1 Annual income

Income is one of the important factors, which plays pivotal role in behaviour pattern of an individual. High annual income not only enables farmers to take greater risk of adopting new technology but enable them to know and adopt costly innovations.

Gosai (1997) reported that majority of trained (82.22 per cent) and untrained (81.11 per cent) farm women belong to young age group up to 30 years.

Kanani (1998) indicated that about one third of the respondents had low income. About three fourth of the respondents were from middle-income group, while negligible respondents (5.00%) were from higher income group.

Verma (2000) reported that 44.45 per cent of the respondents belonged to the annual income group of Rs. 20001 to 40,000, while 28.51 and 23.05 per cent of the respondents belonged to the annual income group of more than Rs. 40000 and Rs. 10,001 to 20,000 respectively. Only 3.91 per cent of the respondents fall in the income group up to Rs. 10,000.

Javiya (2004) reported that the 48.00 per cent of groundnut growers had medium level of income ranging from Rs. 18173.60 to Rs. 44867.41 followed by 29.00 per cent, who had high level of income up to Rs. 46867.41 per annum.
2.1.2.2 Social participation

Social participation is the most important social characteristics of the farmers. The farmers with good social participation have been found to have a positive attitude towards seeking the information about improved technology and forming their perception.

Amir (1996) revealed that 71.67 per cent of the summer groundnut growers had medium social participation followed by high (13.33 per cent) and low (15.00 per cent) social participation.

Kanani (1998) indicated that majority (66.67%) of the respondents had medium social participation.

Chavada (1998) observed that 67.44 per cent of the groundnuts based inter crop growers had medium social participation followed by high (6.48%) social participation, while 25.58 per cent of the groundnut based inter crop growers had low social participation.

Chhodvadia (2001) indicated that majority of demonstrators (73.08 %) and non-demonstrators (67.31 %) respondents had medium social participation.

Javia (2004) revealed that majority (68.00 per cent) of the respondents had medium social participation followed by low (19.00 per cent) social participation, whereas only 13.00 per cent of the respondents had high social participation.
2.1.2.3 Size Land holding

The size of land holding contributes significantly in knowledge and adoption of modern technology. It is general belief that farmers of large size of land holding can take advantages of improved technologies. Some works carried on these aspects are presented below.

Gosai (1999) indicated that more than half of the trained farm women (51.11%) and less than half of the untrained farm women (45.56%) had medium size of land holding.

Verma (2000) inferred that about 30 per cent of the respondents belonged to each category viz, small, medium and large size of land holding groups followed by marginal size of land holding i. e. 10.94 per cent.

Chhodavadia (2001) observed that about one-half of demonstrators (48.08%) and non demonstrators (51.92%) belong to small size of land holding followed by medium and large size land holding.

Javia (2004) showed that 32.00 per cent and 29.00 per cent of the groundnut growers had a medium and large size of land holding, respectively. The groundnut growers with small and marginal land holdings were 26.00 per cent and 13.00 per cent, respectively.

2.1.2.4 Irrigation potentiality

Patel (1990) pointed out that 65.00 per cent of the lime growers had medium irrigation potentiality whereas 19.00
per cent had low and 16.00 per cent had high irrigation potentiality.

Gorfad (1993) inferred that more than half (59.00 per cent) of the mango growers had medium irrigation potentiality.

Dangar (1996) revealed that 56.00 per cent of the chiku growers had medium irrigation potentiality, whereas 18.00 per cent had low irrigation potentiality and 26.00 per cent had high irrigation potentiality.

Chavda (1998) observed that majority (65.12%) of the groundnut based inter crop and 69.4% of the groundnut based relay crop growers had medium irrigation potentiality.

Verma (2000) found that majority of the respondents (64.06%) had medium irrigation facility followed by low (25.78%) irrigation facility, only 10.16% of the respondents had high irrigation facility.

### 2.1.2 Psychological characteristics

#### 2.1.3.1 Scientific orientation

Valand (1997) concluded that great majority (82.75%) of the respondents were found in medium to high level of scientific orientation.

Christian (2001) observed that less than half of the cotton growers (43.33%) had high level of scientific orientation.

Dongardive (2002) revealed that great majority of chilli growers (83.33%) had high level of scientific orientation and
only 13.33% of chilli growers had medium level of scientific orientation.

2.1.3.2 Innovativeness

Innovativeness reflects the socio-psychological orientation of an individual regarding the earliness in adoption of change, innovative ideas or practices. A brief account of review has been presented here.

Ratnakar (1990) revealed that majority of the respondents had high innovativeness.

Rao (1993) indicated that majority (58.48%) of the farmers had medium level of innovativeness followed by low (25.00%) and high (16.52 %) level of innovativeness.

Reddy (1994) observed that majority (72.00%) of the respondents had low to medium level of innovativeness.

Khan et al. (1997) stated that more than half (51.52 %) of the respondents fell in the medium level of innovativeness of paddy crop technology.

Sureshkumar (1997) concluded that half (51.52 per cent) of the respondents fell in the medium level of innovativeness of paddy crop technology.

Pandya (1998) revealed that more than half of the respondents (51.00 per cent) had medium innovativeness whereas, 47.0 per cent respondents were observed in high innovativeness category.
2.1.3.3 Risk orientation

Risk orientation plays very important role in the perception of an individual. A brief review of past studies has been presented below.

Chavada (1981) revealed that nearly equal (38.67 and 39.33 per cent) number of mango growers had medium and high-risk preference, respectively, whereas 22.00 per cent of them were from low risk preference group.

Khodifad (1993) revealed that more than three-fifth (61.67 per cent) of the respondents were from medium risk orientation group followed by low and high-risk orientation group, respectively.

Palakurthi (1994) observed that majority of the participants of voluntary organization had medium level of risk orientation.

Kanani (1998) indicated that more than fifty per cent (53.33%) of the respondents had medium level of risk orientation.

2.1.3.4 Economic motivation

Economic motivation plays a vital role in the process of economic development of an individual. It shows the degree of willingness for incurring expenditure on improved technology received through extension system. A brief account of review on this aspect is presented below.

Rabari (1983) observed that majority of the maize growers (51.00 per cent) had economic motivation to a
higher level, while 21.00 per cent and 18.00 per cent of them had low and medium level of economic motivation.

Patel (1987) indicated that majority of the hybrid-6 cotton growers (61.33 per cent) had economic motivation to a medium level, while 22.67 per cent had low level of economic motivation and 16.00 per cent had high level of economic motivation.

Pandya (1991) stated that two-third (66.67 per cent) of the dry land farmers had medium economic motivation, followed by those having high (19.82 per cent) and low (13.51 per cent) economic motivation.

Sureshkumar (1997) found that 43.30 per cent of farmers fell under low category followed by medium and high categories of economic motivation.

Pandya (1998) observed that in medium economic orientation category there were 59.0 per cent of the respondents followed by 24.0 per cent respondents in high economic orientation category.

2.1.3.5 Achievement motivation

This is an important characteristic of farmers. Considering it’s importance for the study, a brief review pertaining to above aspects has been presented below.

Thakor (1993) indicated that more than three-fourth of the farm women belonged to medium category of achievement motivation.

Shinde (1994) in his study on “Impact of dairy development programmes” concluded that nearly equal
number of dairy framers i.e. 39.00 per cent and 37.00 per cent had medium and high achievement motivation, respectively.

Vyas (1995) concluded that majority (86.00 per cent) of the respondents were found to have medium to high achievement motivation.

Sureshkumar (1997) found that two-third of the farmers fell under medium level of achievement motivation category.

Hardiakar (1998) stated that 74.00 per cent of farmers of IRDP had medium level of achievement motivation.

2.1.3.6 Credit orientation

Farmers were oriented to take advantage of loans. Farmers borrowing behaviour plays pivotal role in perception process.

Kokate and Nand (1991) found that 72.00% of the potato growers had medium to high level of credit orientation. While about 28.00 per cent of the potato growers had low credit orientation.

Prajapati and Patel (2000) pointed out that majority of the respondents (55.00%) were found in medium category of credit orientation, while 26.00 per cent and 19.00 per cent of the potato growers were found in low and high category of credit orientation.

Javia (2004) observed that majority of the respondents (57.00 %) were found in medium category of credit orientation, while 28.00 per cent and 15.00 per cent of the
groundnut growers were found in low and high category of credit orientation, respectively.

2.1.3.7 Market orientation

Any type of farmer whether small, medium, or big would be marketing his produce at least for repaying his debt and meeting his day-to-day needs and requirements.

Jagadeshwar (1994) found that half (50.46%) of the respondents had medium level of market orientation followed by 30.09 and 19.44 per cent of the respondents with high and low level of market orientation respectively.

Prajapati and Patel (2000) revealed that nearly two third of potato growers (65.00%) were found in medium category of market orientation. Remaining 19.00 per cent and 16.00 per cent of the potato growers were found in high and low category of market orientation, respectively.

Javia (2004) revealed that 62.00 per cent groundnut growers were found in medium category of market orientation. Remaining 21.00 per cent and 17.00 per cent of the respondents were found in low and high category of market orientation, respectively.

2.1.3.8 Overall modernity

Vekaria (1989) concluded that more than half of the respondents (53.3%) had low overall modernity followed by 55.30% medium overall modernity.

Patel (1991) concluded that majority (59.65%) of the respondents in watershed area having medium overall
modernity followed by 22.28% and 18.57% respondents with high and low overall modernity level respectively.

Rakholiya (1996) expressed that the mean score of overall modernity of BFs (Beneficiary farmers) and NBFs (Non-Beneficiary farmers) had 27.45 and 21.80, respectively which differed significantly.

2.1.4 Communication characteristics

2.1.4.1 Communication behaviour

Sadhu and Darbarilal (1976) define communication behaviour as the degree of an individual farmer’s exposure to the various sources of information through which the technologies are transmitted. They further stated that to what extent farmers expose themselves to various information sources, both for receiving as well as for passing on the information was called as communication behaviour. They found that 36.00, 43.33 and 26.67 per cent of the panjabi farmers had low, medium and high level of communication behaviour with respect to farm technology, respectively.

Somu et al. (1978) reported that majority (78.33 per cent) of the opinion leaders were found to have medium level of communication behaviour

Purohit (1981) found that 25.83 per cent of the groundnut growers had low level of media exposure, while 69.17 per cent of the respondents had medium level of media exposure. Further, only 5.0 per cent of them had high level of media exposure.
Srenivasulu *et al.* (1988) reported that the private marketers were the foremost consulted source of information followed by radio, newspaper and agricultural extension staff by groundnut growers.

Mehar and Patil (1984) indicated that majority of the opinion leaders possessed high level of communication competence.

2.1.4.2 Mass media exposure

Purohit (1981) observed that 25.83 per cent of the groundnut growers had low media exposure, while 69.17 per cent of the respondents had medium mass media exposure and only 5.00 per cent of them had high mass media exposure.

Popat (1984) revealed that 53.00 per cent of the groundnut growers were observed in low media exposure group, while 47.00 per cent of the respondents had high media exposure.

Patel (1987) stated that the printed literature, newspaper and television ranked first, second and third as accessed by 18.67, 16.67 and 14.00 per cent from out of total source of information of hybrid-6 cotton growers, respectively.

Solanki *et al.* (1991) found that 62.50 per cent of the farmers had medium mass media exposure.

Kalsariya (1993) stated that 66.67 per cent of the hybrid-6 growers had medium level of mass media
exposure, whereas 20.00 and 13.33 per cent of them had low and high level of mass media exposure, respectively.

Temkar (2000) reported that less than half (42.26%) of the respondents had medium level of mass media exposure.

Christian (2001) concluded that slightly more than two fifth of the cotton growers (41.66%) had high level of mass media exposure.

2.1.4.3 Extension participation

Sakaria (1991) stated that more than half (53.00 %) of the respondents had low extension participation followed by high (44.00 %) and medium (03.00 %) participation in various extension activities.

Vanparia (1994) revealed that the contact and non-contact groundnut growers differed significantly with respect to their extension participation.

Kanani (1998) indicated that 64.17 per cent of the groundnut growers had medium extension participation, whereas 20 per cent and 15.83 per cent of them had high and low extension participation.

Verma (2000) revealed that about three fourth (73.3%) of the groundnut growers had medium extension participation, whereas 15.23 per cent and 10.94 per cent of the respondents had low and high extension participation, respectively.

Chhodavadia (2001) indicated that majority (84.62%) of the demonstrators and non demonstrators (71.15%) respondents belong to medium extension participation. The
9.61% and 3.85% demonstrator and non-demonstrator respondents fall in high extension participation group, respectively.

2.1.4.4 Localite-cosmopolite value orientation

Bhalara (1981) stated that 40.00 per cent of the contact farmers were found to have high cosmopolite-localiteness. Whereas, 39.00 and 13.00 per cent of them had medium and low cosmopolite-localiteness, respectively.

Sharma and Sanoria (1983) reported that mean use of localiteness-communication score was 0.60 and 0.67 in case of contact and non-contact farmers, respectively.

Savaliya (1987) indicated that 64.00 per cent of the contact farmers were found to have medium level of localite-cosmopolite value orientation, whereas, 28.00 and 8.00 per cent of them had low and high value orientation.

Gajera (1991) found that 66.67 per cent of the milch animal owners were found to have medium level of localiteness-cosmopolite value orientation, whereas, 13.33 and 20.00 per cent of them had low and high value orientation, respectively.

Baidiyavadra (1993) indicated that majority (56.67 per cent) of the groundnut growers were found to have medium level of localite-cosmopolite value orientation, whereas, 23.33 and 20.00 per cent of them had low and high localite-cosmopolite value orientation, respectively.
2.2 PERCEPTION OF FARMERS ABOUT THE USEFULNESS OF EXTENSION SYSTEM

Sinha (1966) observed that 55.9 per cent of village level workers had correct understanding of the concept and purpose of farm planning.

Roy and Jaiswal (1969) compared the perception of farmers, extension workers and research workers with respect to profitability, cost, cultural compatibility, complexity and communicability of agricultural innovation and concluded that farmers perceived these characteristics less favourably for adoption than research workers and extension personnel.

Sharma and Jha (1972) studied the perception of specialist, extension personnel and demonstrating farmers about the concept of National Demonstration. The study revealed that 60.00 per cent of specialists, 90.00 per cent of extension personnel and 60.00 percent of demonstrating farmers had correctly perceived the conceptual difference between National Demonstration and other type of demonstrations.

Thakur et al. (1972) conducted a study on extension personnel perception of package of programme in the district of Jammu and Kashmir State, they revealed that the majority of respondents had incorrect understanding of the concept of package of programme.

Mohil et al. (1973) found that majority of the extension personnel were of the opinion that the scheme is moderately effective.
Reddy and Reddy (1974) carried out an investigation to probe people image of Community Development and Panchayatiraj and concluded that the officials and non officials had better idea and image of the Community Development and Panchayatiraj programme than peoples.

Bhileganokar and Dakh (1978) reported that 54.17 per cent of participant farmers perceived high utility of mobile Farm Advisory Service, followed by about 38.33 per cent of farmers perceived medium utility whereas, only 7.50 per cent of farmers had perceived the low utility of Mobile Farm Advisory Service.

Manoharan et al. (1978) opined that all the participants who have attended the contact programme were perceived it as useful one.

Raj and knight (1978) conducted a study on differential perception of farm practice attributes by progressive and non-progressive farmers revealed that progressive and non-progressive farmers differed significantly in their perception of farm practice attributes.

Ravindra (1980) studied the suitability of poultry farming to local conditions as perceived by farmers and reported that 65 per cent of the farmers perceived poultry farming as moderately suitable as against 10.00 per cent farmers who had perceived it as highly suitable to their conditions and 25 per cent of them had perceived poultry farming as less suitable to their condition.

Kale and Khuspe (1982) reported that the lower caste people had perceived the usefulness of agricultural telecast
to higher extent whereas, high caste people perceived as less useful.

Upadhyay and Hansra (1982) observed that majority (86.46 per cent) of the respondents perceived the agricultural broadcast as “very much useful” whereas, only 12.50 per cent perceived that these broadcast were “some what useful”.

Chandrakandan et al. (1989) while studying the farm school on AIR programme observed that equal number of respondents (82.43 per cent) were in opined that this programme was easily understandable, very useful. Whereas 70.30 per cent opined that the programme has practical utility.

Nimbalkar and Pawar (1990) reported that the farm programme telecast by Bombay Doordarshan “Gappa Goshti” was ranked first by the respondents in terms of overall perception among different programmes.

Sekar (1990) studied personal opinion about farm broadcast programme, modes of presentation of messages and credibility of Radio. He reported that majority of the respondents found that the messages broadcast through radio were clear, timely and complete. As regards general usefulness of messages as perceived by the respondents, more than three fourths of them reported it to be “very useful”.

Sihag and Malaviya (1990) conducted a study on perceived feasibility of introducing soakage pit in rural areas before and after exposure of technology on soakage pit in
Hissar district of Harayana state and revealed that the respondents had considerably improved their perception on feasibility of soakage pit after the exposure of technology. They further reported that respondents had better perception in terms of finding the technology to be profitable.

Srinath and Veerabhadraiah (1990) reported that those Assistant Director of Horticulture perceived their task better and utilized their time well would performed better than others.

Lanjewar and Shirke (1991) revealed that majority of the respondents perceived it important because of social forestry can help the farmers to bring in to use the waste land and help the farmers to earn money with less labour.

Rade et al. (1991) studied role perception and role performance of contact farmers in T & V system. They revealed that most of the contact framers perceived following roles namely, remaining present on own farm on the day of visit of extension worker (64.86 per cent), obtaining technology from village extension worker (63.51 per cent) and adoption of improved agricultural technology (60.73 per cent).

Ratnakar and Reddy (1991) studied tribal farmers perception about ITDA (Integrated Tribal Development Approach) programme. They reported that 75 per cent of beneficiaries and 40 per cent of Non-beneficiaries had moderate perception followed by 20 per cent beneficiaries and 60 per cent non-beneficiaries had low perception.
whereas, only 14.44 per cent beneficiaries and non-beneficiaries had high perception about ITDA programme.

A study conducted by Digraskar et al. (1992) on the utility perception of biogas plant revealed that two third of the respondents (66.67 per cent) had perceived high level of utility of biogas.

Nimje et al. (1992) revealed that with respect to usefulness of topics all the topics covered during workshop were perceived as very useful by majority of the participants.

Agrawal et al. (1993) observed that various subjects based on the need of the participants were adequately covered in the workshop and would be more useful to the participants in performing their job as perceived by majority of the participants.

Bareth and Rathore (1991) conducted a study on opinion of Assistant Agricultural Officer (AAO’s) towards selected components of T & V and their influence over each other, reported that opinion about majority of AAO’s towards linkage with research, supply and service and effective role of contact farmers component of T & V system were neither positive nor negative but neutral.

Nayak and Shah (1993) in their study on perception behaviour of rural television towards selected farm programmes revealed that about 89, 79 and 51 per cent of respondents perceived horticultural, crop husbandry and question and answer sessions had excellent and have good
useful value whereas, weather report programme had average value of usefulness.

Seema (1993) revealed that different perception with respect to utility of message on production of clean milk and vaccination of animals by rural women and scientists while non-differential perception about utility of message on balance feeding, care of animal and detection of heat in animals.

Shaikh et al. (1993) reported that farmers differed significantly from researchers and extension personnel in their perception with regards to vaccination of birds against ranikhet and fowlfox disease. The study also revealed that the framers had more favourable perception as compared to the extension personnel about debating, dewarming and dusting of birds.

Hardiakar (1998) observed that majority of beneficiaries (8.41 per cent) perceived the programme as useful. However, 5.15 per cent beneficiaries perceived the programme as less useful.

Sawant (2001) revealed that 53.66 per cent farmers perceived the existing extension system as useful whereas, sizable number of farmers (36.45 per cent) perceived it as less useful and negligible number (9.89 per cent) of them had perceived the extension system as ‘more useful’.

On the basis of the literature reviewed on perception pattern of programmes, organizations, practices etc it could be inferred that there exists variation in perception pattern of people about the things in question.
2.3 RELATIONSHIP BETWEEN DIFFERENT CHARACTERISTICS OF THE FARMERS AND DEPENDENT VARIABLE

2.3.1 Personal characteristics

2.3.1.1 Age and dependent variable

Moore (1962) observed significant relationship between perception and age of the extension personnel of cooperative extension service.

Thakur et al. (1972) reported non-significant relationship between perception and age of extension personnel of package programme.

Sohal et al. (1977) studied perception about usefulness of daily Samachar and observed non-significant relationship between perception and age of the reader.

Bhilegaonkar and Dakh (1978) studied perception of Mobile Farm Advisory Services and revealed non-significant association between perception and age of the farmers.

Kale and Khuspe (1982) studied perception about usefulness of telecast programme and showed non-significant relationship between perception about usefulness and age of the rural televiewers.

Ratnakar and Reddy (1991) observed that the age was found significantly associated with perception of beneficiary of ITDA (Integrated Tribal Development Approach) programme.

Arulraj and Uagalandan (1995) reported significant relationship between age and cane growers’ perception.
Sawant (2001) indicated that age of the farmers was not significantly related with their perception of usefulness of the extension system.

2.3.1.2 Education and dependent variable

Sohal et al. (1977) in his study perception of usefulness of daily Samachar observed non-significant relationship between perception and educational level of readers.

Bhilegaonkar and Dakh (1978) studied utility perception of Mobile Farm advisory Services and indicated significant relationship between perception and educational level of farmers.

Kale and Khuspe (1982) studied perception of the televiwers about usefulness of television programme and reported significant relationship between perception and education of the respondents.

Balsubramanian and Perumal (1989) indicated non-significant relationship between educational level of extension personnel and their perception.

Nimbalkar and Pawar (1990) in their study of perception towards farm programme, showed non-significant relationship between perception and educational level of farmers.

Ratnakar and Reddy (1991) observed significant relationship between perception and educational level of beneficiaries of ITDA (Integrated Tribal Development Approach) programme.
Patel and Patel (1993) studied image regarding “Lab to Land” programme and found significant association between perception and education of beneficiaries’ farmers.

Hardiakar (1998) studied perception of development programmes revealed significant relationship between perception and education level of the farmers.

Sawant (2001) observed positive and significant association between education and perception about the usefulness of extension system.

2.3.1.3 Size of family and dependent variable

Nimbalkar and Pawar (1990) reported non-significant relationship between family size of the respondents and their level of perception.

Ratnakar and Reddy (1991) revealed non-significant relationship of family size with the perception of respondents.

Hardiakar (1998) studied the perception of developmental programme and concluded that family size was not significantly associated with the perception of respondents.

2.3.1.4 Reading habit and dependent variable

Munshi (1989) revealed that 21.40 per cent of the teachers had high reading habit while 39.30 per cent of the teachers were observed in both low and high reading habit.

Gosai (1997) concluded that there was positive and significant relationship between the reading habit of trained
and untrained farm women and their knowledge about groundnut production technology.

2.3.1.5 Decision making ability and dependent variable

Thakare et al. (1991) indicated that perception was significantly associated with decision-making ability of women in farming operation.

Pandya (1998) revealed the significant relationship among farmers perception about the privatization of extension services and their decision-making ability.

Sawant (2001) reported that decision-making ability of the farmers’ was significantly associated with their perception about usefulness of extension system.

2.3.1.6 Training received and dependent variable

Rakholia (1996) revealed that there was no significant correlation between level of knowledge of BFs (Beneficiary farmers) and NBFs (Non-Beneficiary farmers) of WDP (Water Development Project) and training received by them.

Sawant (2001) observed that there was no significant correlation between training received by extension personnel and level of perception about the usefulness of extension system.

Patel et al. (2003) showed that there was no significant correlation with extension management ability of training organizers and training received by them.
2.3.2 Socio-economic characteristics

2.3.2.1 Annual income and dependent variable

Gomase et al. (1998) inferred that annual income was significantly and positively related with adoption of recommended cultivation practices of kagzi lime growers.

Mahmud et al. (2000) found that annual income of the mushroom growers was significantly associated with their attitude towards mushroom cultivation.

Jadav et al. (2003) observed positive relationship between annual income and the knowledge of recommended onion production technology.

2.3.2.2 Social participation and perception

Bhilegaonkar and Dakh (1978) observed positive and significant relationship between perception and social participation of farmers in their study of perception of Mobile Farm Advisory Services.

Kale and Khuspe (1982) studied perception about usefulness of telecast programme and indicated significant relationship between perception and social participation of farmers.

Upadhyay and Hansra (1982) stated significant relationship between perception and social participation of farmers.

Hullatti (1986) in his study on perception of usefulness of sprinkler irrigation revealed non-significant relationship between perception and social participation of farmers.
Nimbalkar and Pawar (1990) in their study of perception towards farm programme indicated significant relationship between perception and social participation.

Ratnakar and Reddy (1991) found that the social participation of beneficiaries of ITDA (Integrated Tribal Development Approach) programme was significantly associated with perception.

Patel and Patel (1993) concluded that the social participation of the farmers was not related with their perception.

Hardiakar (1998) found that the usefulness of perception of IRDP beneficiary farmers was not related with their social participation.

Sawant (2001) concluded that framers’ social participation was positively correlated with level of perception about usefulness of extension system.

2.3.2.3 Size of land holding and dependent variable

Kale and Khuspe (1982) studied perception about usefulness of telecast programme and revealed significant relationship between perception and land holding of the farmers.

Upadhyay and Hansra (1982) studied perception of agricultural broadcast and indicated positively significant relationship between perception and land holding of the farmers.
Hullatti (1986) in his study of perception of usefulness of sprinkler irrigation observed non-significant relationship between perception and land holding of the farmers.

Dikle et al. (1992) found positively and significant relationship between perception and land holding of the farmers.

Padmaiah and Ansari (1997) found no relationship between perception and land holding of the farmers.

Hardiakar (1998) studied the perception of developmental programmes and indicated positive relationship between perception and land holding of farmers.

Sawant (2001) indicated that the land holding of the framers exhibited positive and significant association with their perception about extension system.

2.3.2.4 Irrigation potentiality and dependent variable

Thakrar (1998) summarized that the level of attitude of the respondents was found positive and significantly associated with their irrigation potentiality.

Prajapati and Patel (2000) observed that entrepreneurial behaviour of the potato growers was found positive and significantly associated with their irrigation potentiality.

Jadav (2001) found that there was positive and significant association between onion growers’ knowledge and their irrigation potentiality.
2.3.3 Psychological characteristics

2.3.3.1 Scientific orientation and dependent variable

Chauhan *et al.* (2000) showed that scientific orientation was significantly correlated with adoption level of bajara growers.

Christian (2001) observed that scientific orientation of cotton growers was significantly associated with knowledge level of IPM strategy in cotton crop.

Bhagwan Singh (2003) reported that scientific orientation of poultry entrepreneurs was non-significantly correlated with their level of adoption.

2.3.3.2 Innovativeness and dependent variable

Perumal *et al.* (1988) found that the innovativeness of beneficiary farmers was not associated with their perception.

Padmaiah and Ansari (1997) reported that innovativeness of the respondent who belonged to watershed areas showed significant correlation with perception of watershed development programme.

Pandya (1998) concluded that the innovativeness of the farmers was not related with their perception about privatization of extension services.

Sawant (2001) revealed that the innovativeness of the farmers was positively correlated with the perception about usefulness of extension system.
2.3.3.3 Risk orientation and dependent variable

Sinha et al. (1988) stated that risk orientation was significantly associated with the perception of the respondents.

Viju and Pillai (1988) stated positive and significant relationship of perception with risk bearing capacity of farmers.

Padmaiah and Ansari (1997) stated that risk orientation was significantly associated with perception of respondents of watershed areas.

Sawant (2001) observed that risk orientation was significantly associated with the perception of the farmers about usefulness of extension system.

2.3.3.4 Economic motivation and dependent variable

Perumal et al. (1988) studied attitude towards FEDA and found that perception of beneficiary farmers was not related with their economic motivation level.

Viju and Pillai (1988) indicated significant relationship with economic motivation of farmers and their perception towards farming.

Nagpal and Yadav (1991) stated that there was significant relationship between economic motivation and perception of farmers.

Ratnakar and Reddy (1991) found that economic motivation was significantly associated with the perception of beneficiaries of ITDA (Integrated Tribal Development Approach).
Padmaiah and Ansari (1997) stated that economic motivation was non-significantly associated with perception of the respondents who belongs to watershed areas.

Sawant (2001) found that significant relationship with economic motivation of farmers and their perception towards usefulness of extension system.

2.3.3.5 Achievement motivation and dependent variable

Halkatti and Sundarswamy (1977) observed that achievement motivation of agricultural assistant was found to have a positive and significant relationship with their perception.

Nagnur and Sundarswamy (1994) reported that the achievement motivation was significantly associated with perception of Anganwadi workers of integrated child development services.

Hardiakar (1998) reported significant relationship between the perception about usefulness of developmental programmes and their level of achievement motivation.

Pandya (1998) concluded that achievement motivation had no much influence on farmers’ perception about privatization of extension services.

Sawant (2001) observed that achievement motivation had positive and significant association with their perception towards usefulness of extension system.
2.3.3.6 Credit orientation and dependent variable

Kokte and Nand (1991) found that credit orientation had positive and significant relationship with entrepreneurial behaviour of the potato growers.

2.3.3.7 Market orientation

Prajapati and Patel (2000) found that market orientation showed positively significant relationship with entrepreneurial behaviour of the potato growers.

Chauhan and Siddharth (2000) found that market orientation had significantly correlated with their level of adoption of modern practices of poultry farming.

2.3.3.8 Overall modernity and dependent variable

Karkar (1998) concluded that there was no significant increase in the level of knowledge of the respondents with increase overall modernity.

Vanker and Chauhan (2000) concluded that the level of status of farmers was not significantly correlated with their overall modernity.

2.3.4 Communication characteristics

2.3.4.1 Communication behaviour and dependent variable

Sharma and Sharma (1988) revealed that the contact farmers knowledge had significantly correlated with their communication behaviour.
Bhagwan Singh (2003) revealed that the bajara growers’ adoption had significantly correlated with their communication behaviour.

Vinod Prasad et al. (2003) observed that the extentent of adoption of rice growers had significant and positively correlated with their communication behaviour.

2.3.4.2 Mass media exposure and dependent variable

Singh et al. (1999) found that mass media exposure had significant correlation with knowledge of farmers towards dry farming technologies.

Chauhan and Siddharth (2000) found that mass media exposure had non-significantly correlated with their level of adoption of modern practices of poultry framing.

Vankar and Chauhan (2000) found that media exposure had no significant correlation with their status of the schedule caste.

2.3.4.3 Extension participation and dependent variable

Danger (1996) inferred that chiku growers’ extent of adoption about improved chiku cultivation practices was positively and significantly associated with their extension participation.

Patel and Patel (2000) concluded that the extension participation of the chilli growers was significantly associated with their managerial ability.

Sahoo (2004) revealed that there was highly significant relationship between level of knowledge of the respondents
about eco-friendly practices of groundnut growers and their extension participation.

2.3.4.4 Localite-cosmopolite value orientation and dependent variable

Baidiyavadra (1993) found that the extent of knowledge about improved groundnut production technologies of groundnut growers’ had positive and highly significant relationship with their localite cosmopolite value orientation.

Thakrar (1998) inferred that the localite cosmopolite value orientation of the respondents was positively and significantly related with their attitude towards well recharging.

Patel et al. (2000) found that the localite cosmopoliteness of the tribal farm women was positively and significantly related with their indigenous resource management activities.

Srivastava et al. (2003) found that the localite cosmopolite value orientation of the mushroom growers was positively and significantly related with their adoption.

2.4 SHORTFALLS IN PRESENT EXTENSION SYSTEM AS PERCEIVED BY FARMERS

Singh et al. (1990) reported that lack of infrastructure facilities (63.57 per cent), lack of equipments for demonstrations (59.28 per cent) and shortage of funds
(42.85 per cent) were the major shortfalls in conducting fortnightly workshop of T & V system.

Borkar and Chimburkar (1991) reported that no proper dissemination of message, low understanding of VEW’s about message, over burden of work and non-availability of A. V. aids were some of the short falls stated by master trainers of T & V system.

Jaiswal et al. (1977) reported the major shortfalls as reported by VEW’s were lack of training input and A.V. aids, weak inter departmental co-ordination, interference of local leaders and messages were not in line with the need of the farmers.

Kurbetti et al. (1997) reported that vacancies of post of trainers (34.00 per cent), messages were not received in time (22.66 per cent), message were stereo type (23.33 per cent), lack of farmers participation in extension programme (47.33 per cent), inputs were not available at proper time (34.66 per cent), difficulties to cover large area ((27.33 per cent) and solution for location specific problem not received in time (14.67 per cent) were the some of the shortfalls stated by VEW’s of T & V system.

Darpare and Sinha (1999) revealed that majority of the farmers (51.22 per cent) were aware of recommendations received through extension system but most of them had not adopted due to its not suitability to their finance status.

Ganguly and Singh (1999) studied the perception of farmers about appropriateness of technology and stated
that the technologies given to the farmers were not suited to their farming system.

Sawant (2001) reported that major shortfalls as experienced by the farmers in present extension system were; no due consideration for farming system while offering technology, messages lacking information about credit delivery, marketing, banking, crop weather linkages, etc., information pertaining to location specific problem was lacking by VEW’s, inadequate emphasis for improving small resource poor farmers, no provision of relevant input, unavailability of services of VEW’s as and when required at village itself, no due consideration for innovative ideas of the farmers, no provision of immediate solution to the problem and lack of technical competence with grass root level extension functionaries etc.

2.5 EXPECTATIONS ABOUT FUTURE EXTENSION SYSTEM

Knowledge of expectation is very important since man does have notion of desirability regarding his future status and does believe that by his own selection and decision he can materially affect the role he will acquired and discharge. A brief account of review on this aspect is presented below.

Patel (1995) in his study of expectations of farmers reported that majority of farmers expected to have information about recent technology. The other expectations were information pertaining to mechanized farming, source of loan, source of input and marketing.
Saxena et al. (1995) reported that majority of the farmers (62.000 per cent) expected information based on local needs and resources, whereas more than half (57.00 per cent) of the farmers opined the agricultural information should have practical utility.

Trivedi and Patel (1996) in their study reported that the farmers’ expectations for future extension system as; recent technology be provided (60.65 per cent), easy availability of input be made available (96.66 per cent), training for new technology be arranged (83.22 per cent) and time to time technical guidance for farmers be given (53.33 per cent).

Kurbetti et al. (1997) revealed that maximum number (50.00 per cent) of VEW’s of T & V scheme stated expectations as manageable area of jurisdiction for work, work should not be target oriented and extension personnel at grass root level be selected from the respective region.

Patil (1997) reported that various expectations of extension personnel of T & V Scheme as work related to only extension need to be allotted and other multifarious duties should be minimized (26.08 per cent), enough and good quality Audio Visual Aid be provided (21.70 per cent), refresher training be arranged to extension personnel (17.39 per cent) and vehicle should be provided (8.69 per cent).

Sawant (2001) reported that the major expectations of farmers for future extension system were; provided the appropriate technology as per their own situation and resource availability, provide the technology on the basis of
group demand of similar farming systems, make the necessary arrangement for supply of relevant input, credit delivery and marketing, appoint grass root level extension personnel on the basis of their qualification, aptitude and physical fitness, involvement of farmers from different farming categories while preparing action plan of any programme, on the spot solution to farmers problem be made available, before transmission of any technology test it adequately under close supervision of researchers, extension personnel and farmers and schedule of visits of extension personnel be followed.
CHAPTER III
THEORETICAL ORIENTATIONS

This chapter is devoted to the development of theoretical orientation for the study. The review of literature relating to this study given in the preceding chapter helped in formulating theoretical orientation. The chapter has been sub-divided into major heads as under:
3.1 The conceptual frame-work of the study
3.2 The paradigm
3.3 Definition of some common terms

3.1 THE CONCEPTUAL FRAME-WORK OF THE STUDY

According to new Webster’s dictionary, the term perception means apprehension with the mind or senses, an immediate or initiative recognition, as of moral or aesthetic quality.

Perception can be defined as a process by which individual organize and interpret their sensory impressions in order to give meaning to other environment (Leavitt, 1958).

Blalock (1963) elaborated the concept of perception and listed the different characters of perception as (i) it is an individual matter. Thus, there may be as many different perception as there are individuals (ii) it may be considered and dealt with in terms of what the individual actually experiences. (iii) it involves not only receiving stimuli, but also interpreting and describing these stimuli in terms that
are meaningful to the individual. (iv) various internal and external factors may influence both the interpretation of stimulus and the response it is likely to provide. (v) it is a dynamic phenomenon that may be changing within the individual.

Perception involves to some degree of an understanding and awareness of objects. It is the way generally individuals’ feel, sound, taste or smell through senses (All port 1965).

Kolsa (1970) defined the perception as the selection and organization of material, which stem from the outside environment at one time or the other to provide the meaningful entity we experience whereas, Hodgets (1979) defined perception as “a person’s view of reality”.

Perception is a process by which people organize and interpret the sensory information they receive into a meaningful mental picture (Chung and Megginson, 1981).

According to the Kaste and Rosenzweing (1982) perception is the basic to understanding behaviour because it is the mean by which stimuli effect an organization or individual.

According to Ray (1991), perception is an activity through which an individual becomes aware of objects around him and of events taking place, future states that perception is selective and we perceive what we want to perceive. Our perceptions are organized and we tend to structure our sensory experiences in ways, which makes sense to us.
Perception-Formulation: a process

In order to develop a concept of perception as relevant to the present study, it was considered as essential to analyze the view of various authors and researchers about the perceptual process/mechanism or how perceptions are formed.

Chung and Megginson (1981) have elaborately described the perceptual process. According to them the perceptual process involves a series of elements as under.

(i) Reception:
Perceptual inputs are received through our sensory mechanism; that many objects, events and people in the environment enter our perceptual field through our senses of sight, hearing, smell, taste and touch.

(ii) Processing:
These inputs are processed by perceptual mechanism; that is they are selected, organized and interpreted to give meaning to the perceive.

(iii) Influences:
The mechanism affected by both internal and external factors. Internal factors are characteristics of perceive, his needs, learning acquired from past experiences, self-concept and personality. External factors are the characteristics of the perceived-size, intensity, contrast, repetition, motion, novelty, status and appearance.

(iv) Output:
Perceptual outputs are attitudes, opinion and feelings.
(v) **Reaction:**

The perceiver’s behaviour generates responses from the perceived. These responses constitute a new set of inputs that will be processed to provide new meaning to the perceiver.

Kaste and Rosenweing (1982) explained the perception process as a basic process viz; (i) selectivity (ii) closer and (iii) interpretation.

(i) **Selectivity:**

They claimed that concept of the selectivity perception is as important as we receive voluminous information but all is not used; we select part of it.

(ii) **Interpretation:**

Several individuals can interpret the same stimulus differently. Interpretation depends on past experience and the value system of particular person.

(iii) **Closure:**

The process of closure is perception formulation and relates to the tendency of individuals to have a complete picture of any given situation.

Ruch (1967) described perception as process of becoming aware of objects, events and qualities that stimulate the sense and help in determining the relation among them, whereas Gopalam and Anwar (1996) indicated it is a process which helps the human being to recognize the information obtained from the reality, assemble it and compare it with material previously preserved in the central information processing storage.
According to Woodworth and Marqus (1952) perception is the process of getting the knowledge of an object and objective fact by the use of all ends, however Hayes (1984) viewed perception process as partly inherited and partly learned.

At present various extension education programme are being implemented by State and Central Government, non-Government Organizations and State Agricultural Universities and Private agencies. The success or failure of the extension system depend upon how far its clients perceived the same. The perception plays an important role for success or failure of extension system. In this investigation an attempt is made to know the perception of respondents about usefulness of extension system.

3.1.1 Dependent variable (perception)

According to Combs and Snygg (1959), the study of perception forms the centre point in the study of human behaviour. They claimed that, what governs behaviour from the point of view of individual himself are the unique perception of himself and have the world around him. They assert the study of concept of perception is important because it influences our behaviour. We react to the perceived world as we see it. Understanding how it works and help us to understand our own behavior and that of others.

Thakur et al. (1972) have also endorsed the importance of perception stating “for the programme to be successful”,
it is highly important that those charged with execution of
the programme and their beneficiaries should perceive it as
useful to them.

Patel and Patel (1993) opined that image of any
programme as a whole in the mind of the people concerned
with the programme success. That means perception of
beneficiaries influences the success of programme.

Lanjewar and Shirke (1991) studied the perception
about the social forestry programme and opined that
success of social forestry programme was largely depends
upon its usefulness perception of the beneficiary.

From the foregoing views it may be concluded that the
success of any programme/system can’t be judged merely in
terms of its giganticness or physical achievement alone but
real effectiveness can only be determined by how it’s
clientele and employee perceive its usefulness in meeting
their needs and interest. It is therefore assumed that
perception about the existing extension system will lead to
significant environments in determining the effectiveness of
present extension system under present scenario of
agriculture.

Upadhyay and Hansra (1982) observed that majority
(86.46 per cent) of the respondents perceived the
agricultural broadcast as “very much useful”, Lanjewar and
Shirke (1991) revealed that majority of the respondents
perceived it important because of social forestry can help
the farmers to bring in to use the waste land and help the
farmers to earn money with less labour, Hardiakar (1998)
observed that majority of beneficiaries (8.41 per cent) perceived the programme as useful.

**3.1.2 Independent variables**


3.1.3 Relationship between dependent variable and independent variable

Some studies showed significant and positive relationship between the level of perception and the age of respondents (Moore 1962, Ratnakar and Reddy 1991, and Arulraj and Uagalandan 1995), whereas, some studies revealed that the age of respondents were non-significantly correlated with level of perception (Thakur et al. 1972, Sohal et al. 1977, Bhilegaonkar and Dakh 1978, Kale and Khuspe 1982, and Sawant 2001). Similarly some researchers findings showed significant relationship between the level of perception and their education (Bhilegaonkar and Dakh 1978, Kale and Khuspe 1982, Ratnakar and Reddy 1991, Patel and Patel 1993 and Sawant 2001), while some researchers stated that the education of respondents was non-significantly correlated with level of perception (Sohal et al. 1977, Balsubramanian and Perumal 1989, Nibalkar and Pawar 1990). A non-significant relationship was found between the level of perception and their size of family in the studies conducted by Nibalkar and Pawar 1990, Ratnakar and Reddy 1991 & HardiaKar 1998. There was a significant
relationship between the level of perception and their social participation (Bhilegaonkar and Dakh 1978, Kale and Khuspe 1982, Upathyay and Hansra 1982, Nibalkar and Pawar 1990, Ratnakar and Reddy 1991 and Sawant 2001), whereas, the social participation of the respondents was non-significantly correlated with level of perception (Hullatti 1986, Patel and Patel 1993 and Hardiakar 1998). A significant relationship was found between the level of perception and their size of land holding (Hullatti 1986 and Padmaiah and Ansari 1997), whereas, the size of land holding of respondents was non-significantly correlated with level of perception (Kale and Khuspe 1982, Upathyay and Hansra 1982, Dekle et al. 1992, Hardiakar 1998 and Sawant 2001). There was a significant relationship between the level of perception and their economic motivation (Viju and Pillai 1988, Nagpal and Yadav 1991, Ratnakar and Reddy 1991 and Sawant 2001), whereas, the economic motivation of respondents was non-significantly correlated with their level of perception (Perumal et al. 1988 and Padmaiah and Ansari 1997). A significant and positive relationship was found between the level of perception and their achievement motivation (Halkatti and Sundarswamy 1977, Nagnur and Sundarswamy 1994, Hardiakar 1998 and Sawant 2001), whereas, the achievement motivation of respondents was non-significantly associated with the level of perception (Pandya 1998). There was a significant relationship between the level of perception and their
decision-making ability (Thakare et al. 1991 and Pandya 1998). A significant relationship was found between the level of perception and their innovativeness (Padmaiah and Ansari 1997 and Sawant 2001), whereas, the innovativeness of respondents was non-significantly associated with their level of perception (Perumal et al. 1988 and Pandya 1998). There was a significant relationship between the level of perception and their risk orientation (Sinha et al. 1998, Viju and Pillai 1988, Padmaiah and Ansari 1997 and Sawant 2001). There was a non-significant correlation between level of perception and their training received (Sawant 2001).

There was a positive and significant relationship between the reading habit and the knowledge of the respondents (Gosai 1997). A significant relationship was found between level of adoption of the respondents and their annual income (Gomase et al. 1998), there was a positive and significant relationship between the annual income and the knowledge of recommended onion production technology (Jadav 2001). There was a significant association between the level of attitude and their irrigation potentiality (Thakrar 1998). A significant relationship was found between onion growers’ knowledge and their irrigation potentiality (Jadav 2001). There was a positive and significant relationship between entrepreneurial behaviour and their credit orientation (Kokate and Nand 1991). There was a significant relationship between entrepreneurial behaviour and their market orientation (Prajapati and Patel 2000). A significant relationship was found between the level of adoption and
their market orientation (Chauhan and Siddharth 2000). There was a significant relationship between the level of adoption and their scientific orientation (Chauhan et al. 2000), whereas, the scientific orientation was non-significantly correlated with their level of adoption (Bhagwan Singh 2003). There was a non-significant relationship between the level of knowledge and their overall modernity (Karkar 1998). There was also non-significant relationship between the level of status and their overall modernity (Vankar and Chauhan 2000). A significant relationship was found between the level of knowledge and their localite-cosmopolite value orientation (Baidiyavatra 1993). There was a significant relationship between the level of attitude and their localite-cosmopolite value orientation (Thakrar 1998). There was a significant relationship between the level of adoption and their localite-cosmopolite value orientation (Srivastava et al. 2003). A significant relationship was found between the level of knowledge and their communication behavior (Sharma and Sharma 1988). There was a significant relationship between the level of adoption and their communication behavior (Bhagwan Singh 2003). A significant relationship was found between the level of knowledge and their mass media exposure (Singh et al. 1999), while; there was a non-significant relationship between the level of adoption and their mass media exposure (Chauhan and Siddharth 2000). There was a significant relationship between the level of adoption and their extension participation (Dangar 1996). A significant
relationship was found between the level of knowledge and their extension participation (Sahoo 2004).

3.2 THE PARADIGM

The conceptual framework given in the preceding section may be presented paradigmatically, which has been developed during the course of study. The model showing in figure 1 is tentative and generalized one. The final form of such a model will be suggested at the end of this dissertation in the chapter of “Summary and Conclusions”, when the investigation will yield information of respondents characteristics, their association and extent of variation in farmers perception about usefulness of agriculture extension system.

3.3 DEFINITION OF SOME COMMON TERMS

3.3.1 Age

It refers to the years of the respondents on the date of interview rounded off to the nearest years.

3.3.2 Education

It is the ability of the respondents to read and write or formal education received up to a certain standard. It is the level of literacy of the farmers.
FIG. 7: CHARACTERISTICS OF RESPONDENTS (THE FINAL PARADIGM)
3.3.3 Annual income

This indicates the total annual income expressed in rupees earned by the respondent from both farming and allied fields put together.

3.3.4 Size of family

It refers to the number of members living under a common roof.

3.3.5 Size of land holding

It is the numbers of hectares of land an individual respondent possesses and cultivates.

3.3.6 Social participation

Social participation refers to the degree of involvement of farmer respondents in the formal organizations either as member or its office bearer.

3.3.7 Innovativeness

It is operationally defined as the degree to which a farmer is relatively earlier in adopting new ideas.

3.3.8 Risk orientation

It is the degree to which farmers are oriented towards the risk and uncertainty in their enterprise.
3.3.9 Economic motivation

It refers to respondents urge of getting wealth by putting recommended improved technology in use on his own farm.

3.3.10 Achievement motivation

It has been defined as the value associated with farmers, which drive him to excel in his activities, and thereby attains a sense of personal accomplishment.

3.3.11 Decision making ability

It referred to the ability of the respondents about taking decision.

3.3.12 Extension participation

It is the degree to which a respondent participate in various non-formal educational activities including group and mass contact methods to obtain new information, knowledge and skill related to farming.

3.3.13 Reading habit

A kind or style prevalent among respondents’ readers in reading the farm literature.

3.3.14 Mass media exposure

It is defined as the nature and frequency of farmers involvement in different mass media such as news paper, radio, TV etc.
3.3.15 Irrigation potentiality
   It is fraction of the total area being irrigated and expressed in terms of percentage.

3.3.16 Market orientation
   This referred to the judgment taken by an individual farmer to sell his produce for better price by analyzing various prevailing infrastructure and market intelligentsia.

3.3.17 Localite cosmopolite value orientation
   It is defined as the degree to which a farmer is oriented to his immediate outside social system. Such as visiting to the nearest town, purpose of visit etc.

3.3.18 Communication behaviour
   It may be defined as the degree of an individual farmers' exposure to the various sources of information through which the technologies are transmitted.

3.3.19 Credit orientation
   Credit orientation is operationalized as the degree to which the farmers were oriented to take advantages of loans.

3.3.20 Scientific orientation
   It is a degree to which respondents are oriented to the use of scientific method in relation to adoption of recommended practices.
3.3.21 Overall modernity

Modernization is a process by which individuals change from a traditional way of life to a more complex, technologically advanced and rapidly changing style of life.

3.3.22 Training received

It has been operationalised in terms of the gain in knowledge and skill by the farmers during the course of training programme conducted by an institution.

3.3.23 Respondents or farmers

He is defined as a person cultivating land either owned or taken on lease.

3.3.24 Perception

Perception can be defined as a process by which an individual organize and interpreter their sensory impressions in order to give meaning to other environment

3.3.25 Constraints

Difficulties faced by respondents in adoption of improved cultivation practices in their present conditions.

3.3.26 Suggestions

The ways and means as suggested by the respondents to overcome the constraints in adoption of improved cultivation practices are considered as the suggestions.
CHAPTER IV

RESEARCH METHODOLOGY

Scientific study of any problem requires to adopt appropriate method and procedures in order to arrive at reliable, unbiased and practical conclusions. This chapter deals with methods and procedures followed in carrying out the study. It describes and clarifies methods used for measuring the dependent and independent variables and techniques followed for collection and analysis of data. The methodology is described under the following sections.

4.1 Identification of the problem
4.2 Sources of data
4.3 Area of study
4.4 Research design
4.5 Sampling technique
4.6 Selection of the variables
4.7 Development and standardization of a scale to measure the perception of farmers’ about usefulness of agriculture extension system
4.8 Measurement of independent variables
4.9 Shortfalls in present extension system as perceived by farmers
4.10 Expectations about future extension system
4.11 Methods used for data collection
4.12 Statistical procedures used for analysis of data
4.13 Research hypothesis (Null form)
4.1 IDENTIFICATION OF THE PROBLEM

The development of agriculture is mostly depending upon agricultural extension system. It is felt that there is a wide gap exist between available agricultural technology and its adoption on farmers field. Increase in agricultural production would have to be necessarily obtained by appropriate agricultural technology and its speedy transfer to farmers through efficient extension system. Agriculture extension system have launched numerous extension programme at centre and state level to transfer the existing technology to millions of farmers.

The success of any programme of the agriculture extension system can be measured by the extent to which it is perceived as useful by its targeted beneficiaries. Hence, an attempt was made in this direction to assess the "Farmers' perception about the usefulness of agriculture extension system".

The results of perception study will be useful to the policy makers, extension planners and administrators to plan the future extension strategies.

4.2 SOURCES OF DATA

The basic information regarding the study was gathered from the records of Gram, Taluka and District panchayat. After the primary survey, an interview schedule was prepared in light of objectives and the investigator personally interviewed the selected farmers.
The secondary data and other relevant information for the study were collected from the following sources:

1. Published reports and papers
2. Reference books, reports, bulletins and periodicals related to the subject published by different authors and agencies.
3. Postgraduate theses pertaining to the subject.

4.3 AREA OF STUDY

The present study was conducted in Saurashtra region of Gujarat State, because this region falls under the jurisdiction of Junagadh Agricultural University, Junagadh. Besides, similar study was not conducted in this area. Also, because of the native place of the researchers, he is familiar with the extension system functioning in the area. Hence, it was felt necessary to conduct this study in Saurashtra region.

4.4 RESEARCH DESIGN

Ex post facto research design used in present investigation. Kerlinger (1976) defined the ex post facto design as any systematic empirical enquiry in which independent variables have not been directly manipulated because they have already occurred or because they are inherently not manipulated. Further he stated that ex post facto studies can be devised to dedicate theories, identify behaviour phenomena and explore condition under which a phenomena occurs.
Keeping in view the adaptability of the proposed design with respect to the type of variable under consideration, size of respondents and phenomena to be studied the ex post facto design was selected as an appropriate research design.

4.5 SAMPLING TECHNIQUE

A multistage random sampling technique was used for the study. The sampling technique is described as follows:

4.5.1 Selection of districts

The Saurashtra region of Gujarat State consisted of 7 districts, out of which 4 districts viz; Junagadh, Porbandar, Amreli and Bhavnagar were selected randomly for the study.

4.5.2 Selection of talukas

Two talukas from each three districts viz; Junagadh, Amreli and Bhavnagar were selected randomly. However, one taluka from Porbandar district was selected randomly. The reason behind this was that Porbandar district having three talukas only. The detail of selected talukas is given in Table 1 and fig. 2.

4.5.3 Selection of villages

A list of total villages was obtained from Taluka Panchayat Office of each selected Taluka, separately. Then total villages of each taluka were arranged in alphabetical
orders. Out of total villages of each selected taluka, two villages were randomly selected for the study. Thus, the total fourteen villages were selected for the study as shown in Table 1 and Fig. 2.

Table 1: Selected districts, talukas, villages and respondents from Saurashtra region of Gujarat State

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Districts</th>
<th>Talukas</th>
<th>Villages</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Junagadh</td>
<td>1. Vanthali</td>
<td>1. Kanja</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Navda</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Amreli</td>
<td>1. Kukav</td>
<td>1. Anida</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Babhania</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2. Bagasar</td>
<td>1. Mota Munjasar</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Nava Vaghania</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Porbandar</td>
<td>1. Kutiyana</td>
<td>1. Amar</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Balos</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Bhavnagar</td>
<td>1. Sihor</td>
<td>1. Rajpara (Khodiar)</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Devgana</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Talaja</td>
<td>1. Gadhada</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Borala</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.5.4 Selection of respondents

A list of the farmers of each randomly selected village was obtained from the revenue record of village Panchayat. From each village of three districts viz; Junagadh, Amreli
and Bhavnagar, 13 farmers were selected, whereas 12 farmers were selected randomly from each two village of Porbandar district. Thus total sample of 180 farmers were selected for the present study. The details of the selected villages are given in Table 1.

4.6 SELECTION OF THE VARIABLES

The selection of variables included in the study was done based on an extensive review of literature, consultation with experts and from previous studies taken up on the related subjects.

Only those variables, which were found having most relevant to the present investigation, were finally selected for the study. The list of the selected variables is as under:

(A) Dependent variables
a. Perception of farmers’ about usefulness of extension system

(B) Independent variables
I. Personal
a. Age
b. Education
c. Size of family
d. Reading habit
e. Decision making ability
f. Training received

II. Socio-economic
a. Annual income
b. Social participation

c. Size of Land holding

d. Irrigation potentiality

**III Psychological**

a. Scientific orientation

b. Innovativeness

c. Risk orientation

d. Economic motivation

e. Achievement motivation

f. Credit orientation

g. Market orientation

h. Overall modernity

**IV Communication**

a. Communication behaviour

b. Mass media exposure

c. Extension participation

d. Localite-cosmopolite value orientation

**4.7 DEVELOPMENT AND STANDARDIZATION OF A SCALE TO MEASURE THE PERCEPTION OF FARMERS’ ABOUT USEFULNESS OF AGRICULTURE EXTENSION SYSTEM**

Researcher has standardized a scale to measure farmers’ perception about the usefulness of agriculture extension system in Saurashtra region of Gujarat State. While constructing the scale, the author has resorted methodology suggested by Likert (1932) with slight modification in the procedure. A standardized scale of
perception about the usefulness of agriculture extension system was constructed with the help of following procedure.

**Collection of the statements**

The items of perception were called statements. Initially 84 statements covering the entire universe of content were collected by referring the literature related to the farmers perception about the usefulness of agriculture extension system from journals, relevant books and consultation with extension experts in Junagadh Agricultural University, Junagadh. As shown in Appendix with ‘t’ value. These statements were then edited according to the 14 criteria laid down by Edward (1957). In all, 36 statements were selected as they were found to be non-ambiguous and non-factual (Appendix-I).

**Item Analysis**

As many as 60 sets of these statements were handed over to the judges selected from the discipline of extension education and field extension services. They were requested to give their judgments for proper rating of each statement. Out of these, 40 responses were received from experts judge. Thus, finally the opinion of 40 experts was considered for calculation of the scale. These judges were asked to respond to each statement on the five-point continuum i.e. ‘strongly agree’, ‘agree’, ‘undecided’, ‘disagree’ and ‘strongly disagree’. The scoring pattern was 5,4,3,2 and 1 for positive and 1, 2, 3, 4 and 5 for negative statements, respectively. The frequency distribution of
scores based on the responses to all statements was obtained. The respondents were arranged in the ascending order according to their total score. The criterion group i.e. the 25 per cent of the respondents having the highest score and 25 per cent of the respondents having lowest scores were formed for the calculation of ‘t’ values. The formula used for calculation of ‘t’ values is as follows.

\[
t = \frac{X_H - X_L}{\left(\frac{(X_H - X_H)^2 + (X_L - X_L)^2}{n(n-1)}\right)^{\frac{1}{2}}}
\]

Where,

- \(X_H\): Mean score on a given statement for the high group
- \(X_L\): Mean score on a given statement for the low group
- \(X_H\): Total score on a given statement for the high group
- \(X_L\): Total score on a given statement for the low group
- \(N\): Number of respondents in each group

These two groups provided the criterion groups in terms of which item analysis was conducted. The responses of high and low groups of each statement were then analyzed by working out the ‘t’ value. The thumb rule of rejecting item with ‘t’ value less than 1.75 was followed (Edward, 1957). As per the thumb rule, 36 statements were selected giving due consideration to include both favorable and unfavourable statements in more or less equal proportion. The final perception scale is given in appendix-I.

**Reliability of the perception scale**

To know the reliability of the perception scale developed, the split halves method was employed.
**Split halves method**

The 36 items were divided into two equal halves, with odd number in one half and even number in the other. These were administered to 20 respondents separately, which were not included in the final sample. Having obtained the two sets of scores for each of the 20 respondents, co-efficient of correlation (reliability co-efficient) between the two sets of scores was calculated which was found to be significant ($r = 0.533$). The reliability co-efficient thus obtained, indicated that internal consistency of the perception scale developed for the study was high. The reliability coefficient was calculated with the help of Rulon formula used by Guilford (1965).

**Validity of the perception scale**

The validity of the scale was confirmed by two types of validity test viz., content validity and criterion validity.

**Content validity**

According to Kerlinger (1976), the content validity is representativeness of sampling adequacy, of the content, the substance, the matter and the topics of measuring instrument. In the present study, indicators and sub indicators included in the scale were arrived at only after wide and critical validation by panel of judges.

**Criterion validity**

A criterion may be an object measure of performance or quality (Garrett, 1985). In the present study, criterion validity was measured by using criteria of decision-making ability of the respondents. Comparison was made between
the perception score of 20 non-sampled respondents with their decision-making. Pearson’s co-efficient of correlation was used for appraising correlation between these two sets of scores. The ‘r’ value was 0.403, indicating the scale was valid.

**Administering the perception scale**

The final perception scale was administered on the sample respondents who were asked to express their reaction in terms of their agreement or disagreement with item by selecting any of the five response categories viz; ‘strongly agree’, ‘agree’, ‘undecided’, 'disagree’ and ‘strongly disagree’. The score given for positive statements were 5, 4, 3, 2 and 1, while 1, 2, 3, 4 and 5 for negative statements. The total perception score for each respondent was obtained by adding the weight of his responses made to the individual scale items. The respondents were grouped into three categories on the basis of mean and standard deviation (S.D.) as less useful perception, useful perception and more useful perception.

**4.8 MEASUREMENT OF INDEPENDENT VARIABLES**

Keeping in view the objectives of the study, the relevant variables for the study was selected on the basis of review of literature and consultations with the experts. Selected variables were measured either with help of developed scale or by developing schedules and indices is shown in Table 2.
Table: 2 Variables along with technique used for their measurement

**A. INDEPENDENT VARIABLES**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Variables</th>
<th>Measurement techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>I. Personal characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Age</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>b.</td>
<td>Education</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>c.</td>
<td>Size of family</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>d.</td>
<td>Reading habit</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>e.</td>
<td>Decision making ability</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>f.</td>
<td>Training received</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td></td>
<td><strong>II. Socio-economic characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Annual income</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>b.</td>
<td>Social participation</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>c.</td>
<td>Size of land holding</td>
<td>Scale developed by Venkatramaiah (1983)</td>
</tr>
<tr>
<td>d.</td>
<td>Irrigation potentiality</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td></td>
<td><strong>III. Psychological characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Scientific orientation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>b.</td>
<td>Innovativeness</td>
<td>Scale developed by Singh (1977)</td>
</tr>
<tr>
<td>c.</td>
<td>Risk orientation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>d.</td>
<td>Overall modernity</td>
<td>Mehta <em>et al.</em> (1974)</td>
</tr>
<tr>
<td>e.</td>
<td>Economic motivation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>f.</td>
<td>Achievement motivation</td>
<td>Scale developed by Vishweshwarn (1979)</td>
</tr>
<tr>
<td>g.</td>
<td>Credit orientation</td>
<td>Scale developed by Mishra (1979)</td>
</tr>
<tr>
<td>h.</td>
<td>Market orientation</td>
<td>Scale of Samanta (1977)</td>
</tr>
<tr>
<td></td>
<td><strong>IV. Communication characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Communication behaviour</td>
<td>Scale developed by Sandhu &amp; Darbarilal (1967)</td>
</tr>
<tr>
<td>b.</td>
<td>Mass media exposure</td>
<td>Structure schedule developed</td>
</tr>
<tr>
<td>c.</td>
<td>Extension participation</td>
<td>Structure schedule developed</td>
</tr>
</tbody>
</table>


|   | Localite-cosmopolite value orientation | Scale developed by Singh (1967) |
|---|----------------------------------------|---------------------------------

**B. DEPENDENT VARIABLE**

|   | Farmers’ perception about usefulness of agriculture extension system | Scale developed by Likert (1932) technique was used with due modification |

**MEASUREMENT OF VARIABLES**

### 4.8.1 Personal characteristics

#### 4.8.1.1 Age

Age of the respondents was measured in terms of completed years at the time of data collection. The respondents were grouped as young age (up to 35 years), middle age (36 to 55 years) and old age (above 55 years) group respectively.

#### 4.8.1.2 Education

The education of the respondents was checked with educational standard that respondents have passed. The level of education of the respondents was classified in to four categories.

<table>
<thead>
<tr>
<th><strong>Level of education</strong></th>
<th><strong>Scores</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>0</td>
</tr>
<tr>
<td>Primary level of education</td>
<td>1</td>
</tr>
<tr>
<td>Secondary level of education</td>
<td>2</td>
</tr>
<tr>
<td>Higher education (above 10th std.)</td>
<td>3</td>
</tr>
</tbody>
</table>
4.8.1.3 Size of family

As regard to size of family it was measured on the basis of total number of members in the respondent’s family. The size of family was categorized as under:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>(numbers of members)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Small</td>
<td>Upto 4</td>
</tr>
<tr>
<td>2.</td>
<td>Medium</td>
<td>5 to 7</td>
</tr>
<tr>
<td>3.</td>
<td>Large</td>
<td>above 7</td>
</tr>
</tbody>
</table>

4.8.1.4 Reading habit

For measuring the reading habit of the respondent, it was conceived in two parts viz, extent of use of different forms of agricultural literature and sources of getting literature.

The extent of use of the literature was measured with the help of six point rating as no reading, up to 15 minutes, 15 to 30 minutes, 30 to 45 minutes, 45 minutes to 1 hour and above one hour per day having score 0, 1, 2, 3, 4 and 5 respectively.

Total score obtain for an individual for all items was calculated. Then, with the help of mean and standard deviation, the respondents were categories as low reading habit (Mean - S.D.), medium reading habit (Mean ± S.D.) and low reading habit (Mean + S. D.).
4.8.1.5 Decision making ability

It referred to the ability of the respondents about taking decision. The data collected from the respondents about decision making for items were categorized into three categories on the basis of mean and standard deviation as low decision making ability (Mean - S.D.), medium decision making ability (Mean + S.D.) and high decision making ability (Mean + S.D.)

4.8.1.6 Training received

It refers to the training received by the farmers. The farmers were grouped into three categories viz, untrained, less trained and more trained.

Untrained = (0 score)
Less trained = (below mean)
More trained = (above mean)

4.8.2 Socio-economic characteristics

4.8.2.1 Annual income

The data collected from the respondents about their annual income were categorized into three groups as under:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Categories</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Low (up to 15,000)</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Medium (15,000 to 25,000)</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>High (above 25,000)</td>
<td>3</td>
</tr>
</tbody>
</table>
4.8.2.2 Social participation

The social participation of the respondents was measured with the help of structured schedule. During the course of data collection, respondents were asked about their association with various organizations within and outside their village. One score was assigned for membership in each organization and one additional score was assigned for holding a key position in it.

On the basis of total score obtained, the respondents were grouped into three categories as low social participation (Mean – S. D.), medium social participation (Mean ± S. D.) and high social participation (Mean + S. D.).

4.8.2.3 Size of Land holding

This is an important factor, which determines economic status and potentiality of the farmers for adoption of new method/idea. This was measured by the number of hectares of land owned and cultivated by the respondents. The respondents were grouped as:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Marginal (up to 1 ha.)</td>
</tr>
<tr>
<td>2.</td>
<td>Small (1.1 to 2.0 ha.)</td>
</tr>
<tr>
<td>3.</td>
<td>Medium (2.1 to 4.0 ha.)</td>
</tr>
<tr>
<td>4.</td>
<td>Large (more than 4.0 ha.)</td>
</tr>
</tbody>
</table>
4.8.2.4 Irrigation potentiality

The respondents were asked to mention the total area being irrigated and it was expressed in terms of percentage by help of following formula:

\[
\text{Irrigation potentiality Index} = \frac{\text{Irrigated land}}{\text{Total land}} \times 100
\]

The respondents were distributed into three groups on the basis of mean and S. D. viz;
Low  =  Mean – S. D.
Medium =  Mean + S. D.
High  =  Mean + S. D.

4.8.3 Psychological characteristics

4.8.3.1 Scientific orientation

It was measured with the help of scale developed by Supe (1969) with due modifications.

The responses from the respondents were obtained against each item in terms of their agreement or disagreement with statement.

The positive and negative statements were scored as follows.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
The respondents were categorized into three categories on the basis of mean and standard deviation as low scientific orientation (Mean – S.D.), medium scientific orientation (Mean ± S.D.) and high scientific orientation (Mean + S.D.).

4.8.3.2 Innovativeness

Innovativeness is operationally defined as the degree to which a farmer is relatively earlier in adopting new ideas. The procedure developed by Singh (1977) was used to measure the innovativeness of farmers. The question was asked is,

“When would you prefer to adopt an improved practice in farming?”

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>As soon as it is brought to my knowledge</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>After I have seen some other farmers using it</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>successfully</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Prefers to wait and take my own time</td>
<td>1</td>
</tr>
</tbody>
</table>

4.8.3.3 Risk orientation

Respondents’ willingness to take risk was measured with scale developed by Supe (1969) with due modification. The scale consisted of six statements. The responses from the respondents were obtained against each item in terms of their degree of agreement or disagreement. The positive and negative statements were scored as show below.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The respondents were categorized into three categories on the basis of mean and standard deviation as low risk orientation (Mean − S.D.), medium risk orientation (Mean ± S.D.) and high risk orientation (Mean + S.D.).

4.8.3.4 Overall modernity

It was operationalized as the extent to which farmer was modern in thinking and outlook. It has two components, general awareness about modern thinking and openness to new ideas and practices.

The psychological modernity of the respondents was measured with the help of overall modernity scale of Mehta et al. (1974), which was an adaptation of the overall modernity scale originally developed by Inkeles and Smith (1966).

Total score obtain for an individual for all the items was calculated. Then, with the help of mean and S. D. the respondents were categorized into three categories as low overall modernity (Mean − S.D.), medium overall modernity (Mean ± S.D.) and high overall modernity (Mean + S.D.).

4.8.3.5 Economic motivation

Economic motivation of the respondents was measured with the help of scale developed by Supe (1969)
with due modification. The responses of the respondents were obtained against each item in terms of their agreement or disagreement with statement on three point continuum ranging from agree to disagree. The positive and negative statements were scored as follow.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Economic motivation score of an individual respondent was the sum total of score of all statements included in the scale. Then, with the help of mean and S. D., the respondents were categorized into three categories as low economic motivation (Mean – S.D.), medium economic motivation (Mean ± S.D.) and high economic motivation (Mean + S.D.).

4.8.3.6 Achievement motivation

It has been operationalized as the value associated with respondents, which drives him to excel in his activities and there by attains a sense of personal accomplishment. It was measured with the help of scale developed by Vishweshwarn (1979) with some modifications. The scale consisted of eight statements, out of which one was negative and remaining were positive. The responses of the respondents were obtained against each statement in term of their agreement and disagreement. The positive statements were scored 3, 2 and 1 for agree, undecided and
disagree, respectively whereas, the scoring system was reversed in case of negative statements. The respondents were categorized into three categories on the basis of mean and standard deviation as low achievement motivation (Mean – S.D.), medium achievement motivation (Mean + S.D.) and high achievement motivation (Mean + S.D.).

4.8.3.7 Credit orientation
Credit orientation is operationalized as the degree to which the farmers were oriented to take advantages of loans. Farmers borrowing behavior was studied in particular to know the extent to which they utilized the credit available to them from different organizations or agencies. A scale developed by Mishra (1979) with necessary modification was used. The respondents’ opinion was recorded in yes or no. Yes gave 1 score and no zero score. The respondents were classified into three categories as low credit orientation (Mean-S.D.), medium credit orientation (Mean+S.D.) and high credit orientation (Mean+S.D.).

4.8.3.8 Market orientation
This referred to the judgment taken by an individual farmer to sell his produce for better price by analyzing various prevailing infrastructure and market intelligentsia. Market orientation of the farmer was measured with the help of scale developed by Samantha (1977) with slight modification. It consisted of six items. The first, fourth and fifth statements were negative and the rests were positive.
The farmers opinions were sought on a four point continuum viz; strongly agree, agree, disagree and strongly disagree with 4, 3, 2 and 1 for positive statements and vis-à-vis. The respondents were categorized into three categories on the basis of mean and standard deviation as low market orientation (Mean –S.D.), medium market orientation (Mean + S.D.) and high market orientation (Mean + S.D.).

4.8.4. Communication characteristics

4.8.4.1 Communication behaviour

The respondents receive the messages from various sources of information and the amount of information disseminated by the respondents through various channels in performing one’s role and work, but to what extent they expose themselves to various information sources, both for seeking (input) as well as disseminating (output) the information to others is called communication behaviour. Communication behaviour scale developed by Sadhu and Darbarilal (1976) was used with slight modification to measure the communication behaviour of the respondents. The formula for measuring the communication behaviour was as under:

\[ C.B. = \text{Information seeking behaviour score(input)} + \text{Information disseminating behaviour score(output)} \]
A) Measurement of information seeking behaviour

To measure the quantum of information seeking behaviour, the respondents were exposed to a questions to elicit from them information concerning the sources used and their frequency of use. The frequency of use run through always, sometimes and never and the score was assigned 2, 1 and 0, respectively. The scores in respect of respondents were computed and summed up on the basis of scoring pattern adopted by the Sharma (1993).

B) Measurement of information disseminating behaviour

It is the amount of information transmitted by the respondents through various channels in performing one’s role and work.

Information dissemination, infact, involved several questions of different nature. Question regarding arrangement of field days, conducting the trainings, arranging demonstrations, distribution of leaflets containing farm information were asked. One score was given to each arrange field days, demonstrations, training and distributed literature related to agriculture, respectively. Based on the aforementioned scoring pattern as used by Sharm (1993), the score of the respondent in respect of each question were added to obtain his information disseminating score.

The total score obtained from information seeking behaviour and information disseminating behaviour were summed up and according to the formula communication behaviour of respondents was worked out.
On the basis of mean and S.D., the respondents were classified into low, medium and high group of communication behaviour.

4.8.4.2 Mass media exposure

It is defined as the nature and frequency of farmers involvement in different mass media such as new paper, radio, T. V. etc. The score were assigned to the respondents based on frequency of their use of various sources of information. The score assigned to various frequencies of uses were regularly (3), frequently (2), once in a week (1), and not at all (0). The scores, thus, assigned to each type of information, sources of which respondents had responded were summed up. The sum total of the score, thus, obtained was considered as an index of respondents’ mass media exposure.

According to mass media exposure of respondents, the mean and standard deviation were worked out and the respondents were grouped into three categories as low mass media exposure (Mean - S.D.), medium mass media exposure (Mean ± S.D.) and high mass media exposure (Mean + S.D.).

4.8.4.3 Extension participation

Extension participation referred to the extent of involvement of the respondent in extension educational activities during last three years.
According to extension participation of respondents, the mean and standard deviation were worked out and the respondents were grouped into three categories as low extension participation (Mean - S.D.), medium extension participation (Mean ± S.D.) and high mass extension participation (Mean + S.D.).

4.8.4.4 Localite-cosmopolite value orientation

It was measured with the help of the scale developed by Singh (1967). The scale consisted of five statements as given in appendix-(III). There were three negative items in the localite-cosmopolite scale (items no. 1, 2 and 3) and agreement with these three negative items would indicate localite value orientation and strong agreement with the two positive items would indicate cosmopolite value orientation. The scoring was based on a five point scale as illustrated below:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The respondents were categorized into three categories on the basis of mean and standard deviation as
4.9 SHORTFALLS IN PRESENT EXTENSION SYSTEM AS PERCEIVED BY FARMERS

An attempt was made to understand and analyze the shortfalls of farmers about present extension system. Open-ended questions were asked to the farmers about shortfalls in present extension system. The responses received for each statement of shortfalls were converted into percentages and priority of shortfalls were fixed by rank analysis.

4.10 EXPECTATIONS ABOUT FUTURE EXTENSION SYSTEM

An attempt was made to understand and analyze the expectations of farmers about future extension system. For which an open-ended question was asked.

The similar expectations were grouped and each expectation percentage were worked out. The priority of different expectations was fixed with the help of rank analysis.

4.11 METHODS USED FOR THE DATA COLLECTION

The basic method used in collecting data was a field survey. The interview schedule was used as a tool for
collection of requisite information. In all 180 respondents from 14 villages were interviewed personally.

4.11.1 Construction of interview schedule

A special interview schedule was designed for collecting the data. Firstly, the interview schedule was prepared in English. Keeping in view the objectives of the study and respondents’ background, the developed schedule was then translated into Gujarati language. In preparing schedule, investigator secured guidance from the concerned research scientists, teachers of university and technical staff of the state department of extension system, Junagadh. The suggestions given by them were incorporated in the schedule by the investigator.

First part of the interview schedule was developed to study the selected characteristics of the respondents.

Second part of the interview schedule was developed to ascertain the level of perception of respondents about usefulness of extension system.

Third part of the interview schedule was developed to study various shortfalls faced by the respondents in taking the benefit of extension system and expectations about future of the respondents to make the extension system more effective.

4.11.2 Pre-testing of interview schedule

The interview schedule was pre-tested in the field on a separate 20 non-sample respondents. The investigator
explained the purpose of the present study to the farmers and clarified ambiguity to understand different items included in the interview schedule. On the basis of information provided and experience gained by the investigator, necessary modifications were made in the final format.

4.11.3 Collection of data

The basic information regarding the study was gathered from the records of taluka Panchyat and gram Panchayat. Primary data for the study were collected by personal interview from the respondents with the help of constructed interview schedule. The investigator personally interviewed all the respondents during the month of September 2005. The aims and objectives of the study were explained to the respondents, so as to facilitate free response from them. The respondents were interviewed either in the field or at the place of their residence. The investigator tried to remove the suspicion from the mind of the respondents about himself as an outsider. The good rapport thus established with the respondents to secure full co-operation for gathering reliable and valid information.

Secondary data and other relevant information of the study were gathered from the reference books, paper published by different authors and postgraduate theses pertaining to the topic.
4.12 STATISTICAL PROCEDURES USED FOR ANALYSIS OF DATA

For the interpretation and drawing inferences, the following statistical methods were used in the present study.

4.12.1 Frequency and percentage

Simple averages and percentage methods were extensively used to analyze the collected data.

4.12.2 Mean score

Mean score were calculated for assigning the ranks. The mean score was obtained by total scores of an item divided by the total number of respondents.

4.12.3 Standard deviation

Standard deviation was worked out from the total score obtained by each respondent as per the following formula.

\[
S.D. (s) = \sqrt{\frac{\Sigma f (X - X)^2}{N - 1}}
\]

Where, \(X\) = individual score

\(X\) = mean score

\(N\) = total number of respondents

The maximum and minimum score limits were obtained by the following formula.
X = Mean ± S.D.

4.12.4 Co-efficient of Correlation (r)

Pearson’s product moment correlation – coefficients were calculated to analyse the association between dependent and independent variables by using following formula:

\[
SP(XY) \\
r = \frac{SP(XY)}{\sqrt{ss(x).ss(y)}}
\]

Where,

\(r\) = Co-efficient of correlation between \(X\) & \(Y\)

\(x\) and \(y\) = Represents the value of the two variables under study

\(sp(xy)\) = Sum of the product of the deviations on \(X\) and \(Y\) from their means

\(ss(x)\) = Sum of the squares due to ‘\(X\)’ variable

\(ss(y)\) = Sum of the squares due to ‘\(Y\)’ variables

For testing the significance of ‘\(r\)’, ‘\(t\)’ value was calculated by using the following formula.

\[
t = r \frac{\sqrt{n-2}}{\sqrt{1 - r^2}} \text{ t}_{n-2} \text{ (distributed with ‘\(t\)’ n-2 df.)}
\]
Where, \( t \) = ‘t’ value
\( r \) = Co-efficient of correlation
\( n \) = Total number of observation

4.12.5 Coefficient of variation

Coefficient of variation was used for comparing the variability present in various independent variables.

\[
C. \ V.\% = \frac{S.D.}{X} \times 100
\]

Where,

\( C. \ V. \%\) = Coefficient of variation

\( S.D.\) = Standard deviation

\( X\) = Mean

4.12.6 Multiple regression analysis

The simple correlation coefficient provides the strength of the association between two variables taken at a time. In order to study the cause and effect relationship between the variables under study, regression analysis is proved to be efficient. With a view to ascertain the effect of different selected characteristics on the extent of perception of respondent, regression analysis was employed (Rao, 1983). For this purpose, multiple regression equation was fitted while using the respondent’s characteristics as independent variables and the level of perception of respondent, as dependent variables. When perception was considered as dependent variable, the remaining variables were considered
as independent variables. The form of regression model used for the present study was as per the following.

\[ Y = a + b_1X_1 + b_2X_2 + \ldots + b_nX_n \]

Where, \( Y \) = dependent variable
\( a \) = the intercept
\( b \)'s = partial regression coefficient
\( X \)'s = characteristics of respondents

In order to select the independent variables to be included in the multiple regression equation, the correlation between different characteristics and the perception level were examined. Variables having significant correlation with perception were used as independent variables to the multiple regression.

After fitting the regression equation the partial regression coefficient were tested for the significance.

**Standard partial regression coefficient**

The various independent variables had their own unit of measurement, which did not permit a comparison of the partial ‘b’ values. To facilitate comparison the partial ‘b’ values are converted into standard partial ‘b’ values, which were free from the unit of measurement. A standardised or adjusted partial ‘b’ values is called Beta weight.

\[ \text{Beta weight} = \frac{\text{S.D. of independent variable}}{\text{S.D. of dependent variable}} \times \text{Partial ‘b’} \]
A comparison of any two beta weights in a set of multiple regression equation indicated the relative importance of the independent variables involved in predicting the rational behaviour.

4.12.7 Stepwise multiple regression analysis

The stepwise multiple regression analysis was carried out to know the important variables with their predictive ability in explaining the variation in the dependent variable.

In the stepwise method, the regression analysis was started with regression of y with \( x_i \ldots x_k \) taken singly. The variable giving the greatest reduction in sum of squares of ‘Y’ was first selected. Then, the bivariate regression in which \( X_1 \) appeared was worked out. The variates which gives the greatest additional reduction in sum of square after fitting \( X_1 \) was selected. All trivariate regressions that include both \( X_1 \) and \( X_2 \) were computed. The analysis was continued until the last variate of which additional contribution was the least of all variates. The prediction equation used was

\[
Y = a + \Sigma b_i x_i
\]

Where,
- \( Y \) = Predicted dependent variable
- \( a \) = Intercept or constant
- \( \Sigma b_i x_i \) = Sum of partial regression coefficient of Y with \( x_i \ldots x_k \) variables
- \( X_i \ldots X_k \) = Number of independent variables included in multiple regression analysis
4.13 RESEARCH HYPOTHESIS (STATED IN NULL FORM)

Based on the literature reviewed and theoretical orientation of the study the following hypotheses pertaining to the specific objectives were developed:

H\textsubscript{0}.1 There is no association between the farmers’ perception about usefulness of extension system and their personal characteristics.

H\textsubscript{0}.2 There is no association between the farmers’ perception about usefulness of extension system and their socio-economic characteristics.

H\textsubscript{0}.3 There is no association between the farmers’ perception about usefulness of extension system and their psychological characteristics.

H\textsubscript{0}.4 There is no association between the farmers’ perception about usefulness of extension system and their communication characteristics.
The data were collected from the farmers by personal interview with the help of structured schedule. The collected data were classified, tabulated and analyzed in the light of objectives of the study. The facts and findings derived after analyzing the information have been presented under the following main heads:

5.1 Perception of the farmers about the usefulness of existing agriculture extension system
5.2 Measurement of independent variables
5.3 The relational analysis of selected variables of the farmers
5.4 Shortfalls in present agriculture extension system as perceived by the farmers
5.5 Expectation about future agriculture extension system

5.1 PERCEPTION OF THE FARMERS ABOUT THE USEFULNESS OF EXISTING AGRICULTURE EXTENSION SYSTEM

The success of any programme or system can be gauged by the extent to which it is perceived as useful by its targeted beneficiaries. Hence, an attempt was made in this direction to assess the perception of farmers about the usefulness of existing extension system. The information pertaining to the usefulness about existing extension
systems were collected and the farmers were grouped into less useful (below 126.13 score), useful (126.13 to 143.67 score) and more useful (above 143.67 score) perception categories. The data collected about the perception about usefulness of extension system are presented in Table 3 and diagrammatically in fig. 3.

Table 3: Distribution of respondents according to their perception about usefulness of extension system (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Less useful (below 126.13 score)</td>
<td>45</td>
<td>25.00</td>
</tr>
<tr>
<td>2.</td>
<td>Useful (126.13 to 143.67 score)</td>
<td>97</td>
<td>53.89</td>
</tr>
<tr>
<td>3.</td>
<td>More useful (above 143.67 score)</td>
<td>38</td>
<td>21.11</td>
</tr>
</tbody>
</table>

Mean = 134.90          S. D. = 8.77         C. V. = 6.50

It can be seen from Table 3 and fig. 3 that 53.89 per cent of the respondents perceived the existing extension system as useful whereas, one fourth (25.00 per cent) of the respondents perceived the existing extension system as less useful and 21.11 per cent respondents perceived the existing extension system as more useful.

It can be concluded that majority of the respondents perceived the existing extension system as useful.
FIG. 3: DISTRIBUTION OF RESPONDENT ACCORDING TO THEIR PERCEPTION ABOUT USEFULNESS OF EXTENSION SYSTEM
The data in Table 3 show that about 75.00 per cent of the respondents perceived the present extension system as useful to more useful. However, 25.00 per cent respondents perceived it as less useful. It indicated that still there is scope for improvement in the system to meet need of respondents. It indicated that there is need to improve the functioning of existing extension system to serve the farming community in better way.

The similar results were reported by Ratnakar and Reddy (1991) and Sawant (2001).

5.2 MEASUREMENT OF INDEPENDENT VARIABLES

5.2.1 Personal characteristics

5.2.1.1 Age

The data presented in table 4 indicated that 47.22 per cent of the respondents were from young aged group, whereas 33.89 per cent and 18.89 per cent of the respondents belonged to middle and old group respectively. Thus, about 81.00 per cent of the respondents belonged to the young and middle-aged group.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Young (up to 35 years)</td>
<td>85</td>
<td>47.22</td>
</tr>
<tr>
<td>2</td>
<td>Middle (36 to 45 years)</td>
<td>61</td>
<td>33.89</td>
</tr>
<tr>
<td>3</td>
<td>Old (above 45 years)</td>
<td>34</td>
<td>18.89</td>
</tr>
</tbody>
</table>

Table 4: Distribution of respondents according to their age (n=180)
It can be inferred that most of the respondents were from young to middle age group.

This finding was in the conformity with the finding of Gosai (1997).

5.2.1.2 Education

Data in table 5 indicate that more than half (55.55 per cent) of the respondents were educated up to primary level (upto 7th standard) whereas, 27.22 per cent and 8.90 per cent of the respondents had education up to secondary and higher level, respectively.

Table 5: Distribution of respondents according to their education (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Illiterate (Unable to read and write)</td>
<td>14</td>
<td>7.78</td>
</tr>
<tr>
<td>2</td>
<td>Primary level (upto 7th standard)</td>
<td>100</td>
<td>55.55</td>
</tr>
<tr>
<td>3</td>
<td>Secondary level (8th to 10th)</td>
<td>49</td>
<td>27.22</td>
</tr>
<tr>
<td>4</td>
<td>Higher secondary level (11th to 12th)</td>
<td>16</td>
<td>08.90</td>
</tr>
<tr>
<td>5</td>
<td>Graduate and above level</td>
<td>1</td>
<td>0.55</td>
</tr>
</tbody>
</table>

It can be concluded that majority of the respondent were educated upto primary and secondary level.

This finding was in conformity with the findings of Kanani (1998) and Javia (2004).
5.2.1.3 Size of family

The data presented in Table 6 indicated that majority of the respondents (61.11 per cent) had medium size of family. While, 29.44 per cent of the respondent were from large size of family and 9.45 per cent of the respondent had small size of family.

Table 6: Distribution of respondents according to their size of family (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small size of family (up to 5)</td>
<td>17</td>
<td>9.45</td>
</tr>
<tr>
<td>2</td>
<td>Medium size of family (5 to 7)</td>
<td>110</td>
<td>61.11</td>
</tr>
<tr>
<td>3</td>
<td>Large size of family (7 and above)</td>
<td>53</td>
<td>29.44</td>
</tr>
</tbody>
</table>

Therefore it can be concluded that majority of the respondents had medium size of family.

This finding was in line with the findings of Bariya (1997).

5.2.1.4 Reading habit

From perusal of the data presented in Table 7, it is clear that 65.00 per cent of the respondents had medium level of reading habit, whereas 26.67 and 8.33 per cent of them had high and low level of reading habit, respectively.

It can be concluded that majority of the respondents had medium level of reading habit.
Table 7: Distribution of respondents according to their reading habit (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low reading habit (below 0.59 score)</td>
<td>15</td>
<td>8.33</td>
</tr>
<tr>
<td>2</td>
<td>Medium reading habit (0.59 to 4.15 score)</td>
<td>117</td>
<td>65.00</td>
</tr>
<tr>
<td>3</td>
<td>High reading habit (above 4.15 score)</td>
<td>48</td>
<td>26.67</td>
</tr>
</tbody>
</table>

Mean=2.37  S.D.=1.78  C.V.=75.10

This finding was in conformity with the finding of Gosai (1997).

5.2.1.5 Decision making ability

It is apparent from the table 8 that majority (76.11 per cent) of the respondents were found to have medium decision making ability, whereas 6.67 and 17.22 per cent of them had low and high decision making ability, respectively.

It can be concluded that majority of the respondents had medium decision making ability.

This finding was in concurrence with the findings of Sureshkumar (1997).
Table 8: Distribution of respondents according to their decision-making ability (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low decision making ability (below 26.55 score)</td>
<td>12</td>
<td>6.67</td>
</tr>
<tr>
<td>2</td>
<td>Medium decision making ability (26.55 to 28.81 score)</td>
<td>137</td>
<td>76.11</td>
</tr>
<tr>
<td>3</td>
<td>High (above 28.81 score)</td>
<td>31</td>
<td>17.22</td>
</tr>
</tbody>
</table>

Mean=27.68  S.D. = 1.13  C.V.=4.08

5.2.1.6 Training received

Data presented in Table 9 indicated that 40.00 per cent of the respondents were untrained followed by 38.89 per cent of the respondents were less trained and only 21.11 per cent of the respondents were more trained.

Table 9: Distribution of respondents according to their training received (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Untrained (0 score)</td>
<td>72</td>
<td>40.00</td>
</tr>
<tr>
<td>2</td>
<td>Less trained (Below 1.2 score)</td>
<td>70</td>
<td>38.89</td>
</tr>
<tr>
<td>3</td>
<td>More trained (above 1.2 score)</td>
<td>38</td>
<td>21.11</td>
</tr>
</tbody>
</table>

It can be concluded that more number of the respondents was untrained.

This finding was in conformity with the finding of Jadav (2005).
5.2.2 Socio-economic characteristics

5.2.2.1. Annual income

The data presented in the table 10 revealed that 50.00 per cent of the respondents had medium annual income (Rs. 15,000 to 25,000). While, 26.67 and 23.33 per cent of them had lower and high annual income.

Table 10: Distribution of respondents according to their annual income

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower (up to 15,000)</td>
<td>48</td>
<td>26.67</td>
</tr>
<tr>
<td>2</td>
<td>Medium (15,000 to 25,000)</td>
<td>90</td>
<td>50.00</td>
</tr>
<tr>
<td>3</td>
<td>High (above 25,000)</td>
<td>42</td>
<td>23.33</td>
</tr>
</tbody>
</table>

Therefore it can be concluded that majority of the respondents had medium annual income.

The annual income of the majority respondents is medium because of the small and medium land holding.

This finding was in conformity with the findings of Verma (2000) and Javiya (2004).

5.2.2.2 Social participation

The data presented in Table 11 revealed that majority (61.11 per cent) of the respondents had medium social participation followed by low (16.67 per cent) and high (22.22 per cent) social participation.
Table 11: Distribution of respondents according to their social participation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low social participation (below 1.45 score)</td>
<td>30</td>
<td>16.67</td>
</tr>
<tr>
<td>2</td>
<td>Medium social participation (1.45 to 4.01 score)</td>
<td>110</td>
<td>61.11</td>
</tr>
<tr>
<td>3</td>
<td>High social participation (above 4.01 score)</td>
<td>40</td>
<td>22.22</td>
</tr>
</tbody>
</table>

Mean=2.73  S.D. = 1.28  C.V.=46.90

It can be summarized that majority of the respondents had medium social participation.

This might be due to the fact that majority of the respondents were the members of the village co-operative society, also the respondents were aware about the participation in social and co-operative organization.

This finding was in conformity with the findings of those Amir (1996), Kanani (1998), Chavda (1998), Chhodvadia (2001) and Javia (2004).

5.2.2.3 Size of land holding

It is observed from the table 12 that 40.00 per cent and 37.22 per cent respondents were from the medium and small size of land holding category. Whereas, only 17.22 per cent and 5.56 per cent respondents were from the large and marginal size of land holding category, respectively.
Table 12: Distribution of respondents according to their size of land holding (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marginal farmers (up to 1 ha)</td>
<td>10</td>
<td>5.56</td>
</tr>
<tr>
<td>2</td>
<td>Small framers (1.1 to 2.0 ha)</td>
<td>67</td>
<td>37.22</td>
</tr>
<tr>
<td>3</td>
<td>Medium farmers (2.1 to 4.0 ha)</td>
<td>72</td>
<td>40.00</td>
</tr>
<tr>
<td>4</td>
<td>Large farmers (above 4.00 ha)</td>
<td>31</td>
<td>17.22</td>
</tr>
</tbody>
</table>

Therefore it can be concluded that more number of the respondents had medium size of land holding.

This finding was in conformity with the finding of Gosai (1999).

5.2.2.4 Irrigation potentiality

The data pertaining to irrigation potentiality are given in Table 13 revealed that 72.78 per cent of the respondents possessed medium irrigation potentiality, whereas 14.44 per cent had high irrigation potentiality and 12.78 per cent had low irrigation potentiality.

This clearly indicates that majority of the respondents had medium irrigation potentiality group, this might be due to the fact that the irrigation potentiality depends on ground water and the irrigation potentially varies from year to year on the basis of rainfall and recharging capacity of ground water.
Table 13: Distribution of respondents according to their irrigation potentiality (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low (below 52.39 score)</td>
<td>23</td>
<td>12.78</td>
</tr>
<tr>
<td>2</td>
<td>Medium (52.39 to 88.25 score)</td>
<td>131</td>
<td>72.78</td>
</tr>
<tr>
<td>3</td>
<td>High (above 88.25 score)</td>
<td>26</td>
<td>14.44</td>
</tr>
</tbody>
</table>

Mean=70.32  S.D.=17.93  C.V.=25.50

This finding was in line with the findings of Gorfad (1993), Dangar (1996) Chavda (1998) and Verma (2000).

5.2.3.1 Psychological characteristics

5.2.3.1. Scientific orientation

It is apparent from the table 14 that majority (72.22 per cent) of the respondents were found to have medium level of scientific orientation, whereas 22.22 and 5.56 per cent of them had low and high level of scientific orientation, respectively.

It can be concluded that majority of the respondents had medium level of scientific orientation. The probable reason might be that most of the respondents are educated up to primary and secondary level of education.

This finding was in line with the finding of Valand (1997).
Table 14: Distribution of respondents according to their scientific orientation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low scientific orientation (below 14.56 score)</td>
<td>40</td>
<td>22.22</td>
</tr>
<tr>
<td>2</td>
<td>Medium scientific orientation (14.56 to 21.30 score)</td>
<td>130</td>
<td>72.22</td>
</tr>
<tr>
<td>3</td>
<td>High scientific orientation (above 21.30 score)</td>
<td>10</td>
<td>5.56</td>
</tr>
</tbody>
</table>

Mean=17.93  S.D.=3.37  C.V.=18.79

5.2.3.2 Innovativeness

It is apparent from the table 15 that about 52.78 per cent of the respondents were found to have medium innovativeness, whereas 11.67 and 35.55 per cent of them had low and high innovativeness respectively.

It can be concluded that majority of the respondents had medium innovativeness.

This finding was in concurrence with the findings of Khan et al. (1997) and Pandya (1998).
Table 15: Distribution of respondents according to their innovativeness

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low innovativeness (up to 1 score)</td>
<td>21</td>
<td>11.67</td>
</tr>
<tr>
<td>2</td>
<td>Medium innovativeness (2 score)</td>
<td>95</td>
<td>52.78</td>
</tr>
<tr>
<td>3</td>
<td>High innovativeness (3 score)</td>
<td>64</td>
<td>35.55</td>
</tr>
</tbody>
</table>

5.2.2.3 Risk orientation

The data presented in the table 16 indicated that majority (80.56 per cent) of the respondents were from medium risk orientation group, whereas 12.22 and 7.22 per cent of the respondents belonged to low and high level of risk orientation, respectively.

Table 16: Distribution of respondents according to their risk orientation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low risk orientation (below 13.43 score)</td>
<td>22</td>
<td>12.22</td>
</tr>
<tr>
<td>2</td>
<td>Medium risk orientation (13.43 to 16.39 score)</td>
<td>145</td>
<td>80.56</td>
</tr>
<tr>
<td>3</td>
<td>High risk orientation (above 16.39 score)</td>
<td>13</td>
<td>7.22</td>
</tr>
</tbody>
</table>

Mean=14.91 S.D.=1.48 C.V.=9.93
It may be concluded that majority of the respondents had medium level of risk orientation.

This finding was in conformity with the findings of Khodifad (1993), Palakurthi (1994) and Kanani (1998).

5.2.2.4 Economic motivation

The data presented in the table 17 indicated that majority (76.67 per cent) of the respondents were from medium economic motivation group, whereas 7.22 and 16.11 per cent of the respondents belonged to low and high category, respectively.

Table 17: Distribution of respondents according to their economic motivation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low economic motivation (below 11.87 score)</td>
<td>13</td>
<td>7.22</td>
</tr>
<tr>
<td>2</td>
<td>Medium economic motivation (11.87 to 13.69 score)</td>
<td>138</td>
<td>76.67</td>
</tr>
<tr>
<td>3</td>
<td>High economic motivation (above 13.69 score)</td>
<td>29</td>
<td>16.11</td>
</tr>
</tbody>
</table>

Mean=12.78  S.D.=0.91  C.V.=7.12

It can be concluded that majority of the respondents had placed greater importance on profit maximization in farming.

This finding was in conformity with findings of Pandya (1991) and Pandya (1998).
5.2.2.5 Achievement motivation

The data presented in the table 18 revealed that majority (75.00 per cent) of the respondents were from medium achievement motivation group, whereas 16.11 and 8.89 per cent of the respondents belonged to low and high category, respectively.

Table 18: Distribution of respondents according to their achievement motivation \( (n=180) \)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low achievement motivation (below 13.29 score)</td>
<td>29</td>
<td>16.11</td>
</tr>
<tr>
<td>2</td>
<td>Medium achievement motivation (13.29 to 16.13 score)</td>
<td>135</td>
<td>75.00</td>
</tr>
<tr>
<td>3</td>
<td>High achievement motivation (above 16.13 score)</td>
<td>16</td>
<td>8.89</td>
</tr>
</tbody>
</table>

Mean=14.71  S.D.=1.42  C.V.=9.65

It can be concluded that majority of the respondents were having medium achievement motivation.

The ignorance of respondents regarding the competition of crop cultivation, recognition, awards, prizes etc. for outstanding work for crop cultivation might be the probable reason for same.

This finding was in confirming with the findings of Thakar (1993), Vyas (1995), Sureshkumar (1997) and Hardiakar (1998).
5.2.2.6 Credit orientation

It is apparent from the table 19 that more number (51.11 per cent) of the respondents were found to have medium level of credit orientation, whereas 37.78 and 11.11 per cent of them had low and high level of credit orientation, respectively.

Table 19: Distribution of respondents according to their credit orientation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low credit orientation (below 2.12 score)</td>
<td>68</td>
<td>37.78</td>
</tr>
<tr>
<td>2</td>
<td>Medium credit orientation (2.12 to 3.16 score)</td>
<td>92</td>
<td>51.11</td>
</tr>
<tr>
<td>3</td>
<td>High credit orientation (above 3.16 score)</td>
<td>20</td>
<td>11.11</td>
</tr>
</tbody>
</table>

Mean=2.64   S.D.=0.52   C.V.=19.70

From the above data, it can be concluded that majority of the respondents had medium credit orientation. This might be due to the facts that still today farmers are not aware about the credit facility catering by government.

This finding was in conformity with the findings reported by Kokte and Nand (1991), Prajapati and Patel (2000) and Javia (2004).

5.2.2.7 Market orientation

It can be seen from the table 20 that majority (65.56 per cent) of the respondents were found to have medium
level of market orientation, whereas 25.00 and 9.44 per cent of them had low and high level of market orientation, respectively.

Table 20: Distribution of respondents according to their market orientation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low market orientation</td>
<td>45</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>(below 16.51 score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Medium market orientation</td>
<td>118</td>
<td>65.56</td>
</tr>
<tr>
<td></td>
<td>(16.51 to 18.87 score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>High market orientation</td>
<td>17</td>
<td>9.44</td>
</tr>
<tr>
<td></td>
<td>(above 18.87 score)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean=17.69  S.D.=1.18  C.V.=6.67

It can be concluded that majority of the respondents were found in medium category of market orientation.

The similar findings were reported by Prajapati and Patel (2000) and Javia (2004).

5.2.2.8 Overall modernity

It is apparent from the table 21 that majority (72.22 per cent) of the respondents were found to have medium level of overall modernity, whereas 10.00 per cent and 17.78 per cent of them had low and high level of overall modernity, respectively.
Table 21: Distribution of respondents according to their overall modernity (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low overall modernity (below 26.10 score)</td>
<td>18</td>
<td>10.00</td>
</tr>
<tr>
<td>2</td>
<td>Medium overall modernity (26.10 to 34.56 score)</td>
<td>130</td>
<td>72.22</td>
</tr>
<tr>
<td>3</td>
<td>High overall modernity (above 34.56 score)</td>
<td>32</td>
<td>17.78</td>
</tr>
</tbody>
</table>

Mean=30.33  S.D.=4.23  C.V.=13.95

Therefore it can be concluded that majority of the respondents had medium overall modernity.

This finding was in conformity with the finding of Patel (1991).

5.2.3. Communication characteristics

5.2.3.1 Communication behaviour

It is apparent from the table 22 that majority (60.65 per cent) of the respondents were found to have medium level of communication behaviour, whereas 14.44 and 25.00 per cent of them had low and high level of communication behaviour, respectively.
**Table 22: Distribution of respondents according to their communication behaviour** (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low communication behaviour (below 99.54 score)</td>
<td>26</td>
<td>14.44</td>
</tr>
<tr>
<td>2</td>
<td>Medium communication behaviour (99.54 to 137.04 score)</td>
<td>109</td>
<td>60.56</td>
</tr>
<tr>
<td>3</td>
<td>High communication behaviour (above 137.04 score)</td>
<td>45</td>
<td>25.00</td>
</tr>
</tbody>
</table>

Mean=118.29  S.D.=18.75  C.V.=15.85

This might be due to the facts that most of the respondents belong to medium level of education, extension participation, reading habit, economic motivation and decision making ability which lead them to medium communication behaviour.

This finding was in conformity with the finding of Somu *et al.* (1978) and Purohit (1981).

### 5.2.3.2 Mass media exposure

From perusal of the data presented in Table 23, it is clear that 69.44 per cent of the respondents had medium level of mass media exposure, whereas 22.22 and 8.33 per cent of them had high and low level of mass media exposure, respectively.
Table 23: Distribution of respondents according to their mass media exposure (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low mass media exposure (below 17.46 score)</td>
<td>15</td>
<td>8.33</td>
</tr>
<tr>
<td>2</td>
<td>Medium mass media exposure (17.46 to 21.74 score)</td>
<td>125</td>
<td>69.44</td>
</tr>
<tr>
<td>3</td>
<td>High mass media exposure (above 21.74 score)</td>
<td>40</td>
<td>22.22</td>
</tr>
</tbody>
</table>

Mean= 19.60  S.D.=2.14  C.V.= 10.92

It can be concluded that majority of the respondents had medium level of mass media exposure.

This finding was in conformity with the findings of Solanki *et al.* (1991) and Purohit (1981).

5.2.3.3 Extension participation

On the basis of data presented in the table 24 it is clear that 61.11 per cent of the respondents had medium extension participation, whereas 25.56 per cent and 13.33 per cent of the respondents had low and high extension participation respectively.

It can be concluded that majority of the respondents had medium extension participation.

It can be inferred that the free visits of the VLWs have made them aware of benefits of modern technologies. With
this motive they might be encourage to participate in extension activities.

Table 24: Distribution of respondents according to their extension participation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low Extension participation (below 4.16 score )</td>
<td>46</td>
<td>25.56</td>
</tr>
<tr>
<td>2</td>
<td>Medium Extension participation (4.16 to 11.12 score)</td>
<td>110</td>
<td>61.11</td>
</tr>
<tr>
<td>3</td>
<td>High Extension participation (above 11.12 score)</td>
<td>24</td>
<td>13.33</td>
</tr>
</tbody>
</table>

Mean= 7.64  S.D.=3.48  C.V.= 45.55

This finding was in conformity with the findings of Verma (2000) and Chhodavadiya (2001).

5.2.3.4 Localite-cosmopolite value orientation

From perusal of the data presented in Table 25, it is clear that 58.89 per cent of the respondents had medium level of localite-cosmopolite value orientation, whereas 25.44 and 16.67 per cent of them had high and low level of localite-cosmopolite value orientation, respectively.

It can be concluded that majority of the respondents had medium level of localite-cosmopolite value orientation.
Table 25: Distribution of respondents according to their localite-cosmopolite value orientation (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low Localite-cosmopolite value orientation (below 14.52 score)</td>
<td>30</td>
<td>16.67</td>
</tr>
<tr>
<td>2</td>
<td>Medium Localite-cosmopolite value orientation (14.52 to 16.50 score)</td>
<td>106</td>
<td>58.89</td>
</tr>
<tr>
<td>3</td>
<td>High Localite-cosmopolite value orientation (above 16.50 score)</td>
<td>44</td>
<td>25.44</td>
</tr>
</tbody>
</table>

Mean=15.51  S.D.=0.99  C.V.=6.38

This might be due to the fact that most of the respondents believed to contact outside agencies to satisfy some of their needs pertaining to the crop cultivation.

This finding was in conformity with the findings of Gajera (1991) and Baidiyavadra (1993).

5.3 THE RELATIONAL ANALYSIS OF SELECTED VARIABLES OF THE FARMERS

5.3.1 Correlation analysis

5.3.1.1 Association between the level of perception about usefulness of extension system and independent variables

With a view to find out the association between the level of perception (dependent variable) about usefulness of extension system and their selected characteristics, the
correlation co-efficient (‘r’ values) were calculated on the basis of operational measures developed for the variables, null hypothesis were stated for testing the association and their significance on zero order correlation are given in Table 26.

Table 26: Association between the level of perception of the farmers about usefulness of extension system and their selected characteristics.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Characteristics</th>
<th>‘r’ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Personal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age (X₁)</td>
<td>-0.14665**</td>
</tr>
<tr>
<td>2</td>
<td>Education (X₂)</td>
<td>0.70853**</td>
</tr>
<tr>
<td>3</td>
<td>Size of family (X₃)</td>
<td>-0.0717ns</td>
</tr>
<tr>
<td>4</td>
<td>Reading habit (X₄)</td>
<td>0.24865**</td>
</tr>
<tr>
<td>5</td>
<td>Decision making ability (X₅)</td>
<td>0.11296ns</td>
</tr>
<tr>
<td>6</td>
<td>Training received (X₆)</td>
<td>0.00881ns</td>
</tr>
<tr>
<td>II. Socio-economic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Annual income (X₇)</td>
<td>0.06097ns</td>
</tr>
<tr>
<td>2</td>
<td>Social participation (X₈)</td>
<td>-0.02767ns</td>
</tr>
<tr>
<td>3</td>
<td>Size of land holding (X₉)</td>
<td>0.08752ns</td>
</tr>
<tr>
<td>4</td>
<td>Irrigation potentiality (X₁₀)</td>
<td>-0.06720ns</td>
</tr>
<tr>
<td>III. Psychological</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Scientific orientation (X₁₁)</td>
<td>0.06485ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>2</td>
<td>Innovativeness (X_{12})</td>
<td>0.11594ns</td>
</tr>
<tr>
<td>3</td>
<td>Risk orientation (X_{13})</td>
<td>0.00915ns</td>
</tr>
<tr>
<td>4</td>
<td>Overall modernity (X_{14})</td>
<td>0.15671**</td>
</tr>
<tr>
<td>5</td>
<td>Economic motivation (X_{15})</td>
<td>0.08077ns</td>
</tr>
<tr>
<td>6</td>
<td>Achievement motivation (X_{16})</td>
<td>-0.0678ns</td>
</tr>
<tr>
<td>7</td>
<td>Credit orientation (X_{17})</td>
<td>0.05778ns</td>
</tr>
<tr>
<td>8</td>
<td>Market orientation (X_{18})</td>
<td>0.03789ns</td>
</tr>
</tbody>
</table>

**IV. Communication**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Communication behaviour (X_{19})</td>
<td>0.21168**</td>
</tr>
<tr>
<td>2</td>
<td>Mass media exposure (X_{20})</td>
<td>0.22671**</td>
</tr>
<tr>
<td>3</td>
<td>Extension participation (X_{21})</td>
<td>0.14895*</td>
</tr>
<tr>
<td>4</td>
<td>Localite-cosmopolite value orientation (X_{22})</td>
<td>-0.05145ns</td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level (0.123)

**= Significant at 0.01 level (0.1463)

ns= Non significant

**I. Personal characteristics**

5.3.1.1.1 Age and perception about usefulness of extension system

The data presented in Table 26 were used for testing the null hypothesis (H_{01}), that there was no association between the farmers’ perception about usefulness of extension system and their age.
The calculated correlation co-efficient value $r=-0.14665$ was found significant at 0.01 level. Thus, null hypothesis was rejected.

It can be concluded that there was negative and significant association between perception about usefulness of extension system and their age. The level of perception about usefulness of extension system is decreased with the increase of age of respondents.

The probable reason for this might be that the young respondents are very enthusiastic to learn more about improved technology. As a result their participation in extension activities and mass media exposure is high naturally led them to positive perception about usefulness of extension system.

Similar finding was observed by Moore (1962), Ratnakar and Reddy (1991) and Arulraj and Uagalandan (1995).

5.3.1.1.2 Education and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_01$), that there was no association between the farmers’ perception about usefulness of extension system and their education.

The calculated correlation co-efficient value $r=0.70853$ was found highly significant at 0.01 level. Thus, null hypothesis was rejected.
It can be inferred that there was positive association between extent of perception about usefulness of extension system and their education.

The probable reason might be that the educated respondents were constant in contact with the implementing department and have to participate various extension activities organized by different extension agencies. Thus, they get a wide exposure, which provide them an opportunity to learn more about improved practices.

This finding was in conformity with the findings of Kale and Khuspe (1982), Ratnakar and Reddy (1991), Patel and Patel (1993), Hardiakar (1998) and Sawant (2001).

5.3.1.1.3 Size of family and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis (H₀), that there was no association between the farmers’ perception about usefulness of extension system and their size of family.

The calculated correlation co-efficient value \( r = -0.07017 \) was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was negative and non-significant association between size of family and their perception about usefulness of extension system. That
means the perception level of respondents did not increase significantly with an increase or decrease in family size.

This finding was in line with the findings of Nimbalkar and Pawar (1990), Ratnakar and Reddy (1991) and Hardiakar (1998).

5.3.1.1.4 Reading habit and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis \( H_0 \), that there was no association between the farmers’ perception about usefulness of extension system and their reading habit.

The calculated correlation co-efficient value \( r = 0.24865 \) was found highly significant at 0.01 level. Thus, null hypothesis was rejected.

It can be inferred that there was positive and significant association between extent of perception about usefulness of extension system and their reading habit.

The probable reason might be due to the fact that respondents are getting the information from different type of literature, which leads them to get the proper information about existing extension system. Further the reading of agricultural literature help the respondents to broad their vision about scientific agriculture ultimately led them to positive perception about usefulness of extension system.
This finding was in line with the finding of Gosai (1997).

5.3.1.1.5 Decision making ability and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_0$), that there was no association between the farmers’ perception about usefulness of extension system and their decision-making ability.

The calculated correlation co-efficient value $r = 0.11296$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that there was positive and non-significant association between the level of perception about usefulness of extension system and their decision-making ability.

This finding was differed from the findings of Thakare et al. (1991), Pandya (1998) and Sawant (2001).

5.3.1.1.6 Training received and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_0$), that there was no association
between the farmers’ perception about usefulness of extension system and their training received.

The calculated correlation co-efficient value $r = 0.00881$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was a non-significant relationship between perception about usefulness of extension system and their training received.

This finding was in line with findings of Sawant (2001) and Patel et. al.(2003).

II. Socio-economic characteristics

5.3.1.2.1 Annual income and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis ($H_0$2), that there was no association between the farmers’ perception about usefulness of extension system and their annual income.

The calculated correlation co-efficient value $r = 0.06097$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that the association was positive and non significant which indicated that both the variable are independent from each other. It means perception about
usefulness of extension system of the respondents did not relate with their annual income.

5.3.1.2.2 Social participation and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_0$2), that there was no association between the farmers’ perception about usefulness of extension system and their social participation.

The calculated correlation co-efficient value $r=-0.02767$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was negative and non-significant association between social participation and their perception about usefulness of extension system.

The probable reason might be that generally, it is considered that social organization is helping farmers in various ways but all activities of social organization did not play any pivotal role in improving farmers’ perception about usefulness of extension system.

This finding was in line with the findings of Hullatti (1986), Patel and Patel (1993) and Hardiakar (1998).

5.3.1.2.3 Size of land holding and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_0$2), that there was no association
between the farmers’ perception about usefulness of extension system and their size of land holding.

The calculated correlation co-efficient value \( r = 0.08752 \) was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that the association was positive and non significant with their perception about usefulness of extension system and their size of land holding.

This finding is in line with the findings of Hullatti (1986) and Padmaiah and Ansari (1997).

5.3.1.2.4 Irrigation potentiality and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis \( (H_02) \), that there was no association between the farmers’ perception about usefulness of extension system and their irrigation potentiality.

The calculated correlation co-efficient value \( r = -0.06720 \) was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that the association was negative and non significant which indicated that both the variable are independent from each other.
III. Psychological characteristics

5.3.1.3.1 Scientific orientation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis (H₀.3), that there was no association between the farmers’ perception about usefulness of extension system and their scientific orientation.

The calculated correlation co-efficient value \( r = 0.06485 \) was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was positive and non-significant relationship between perception about usefulness of extension system and their scientific orientation.

5.3.1.3.2 Innovativeness and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis (H₀3), that there was no association between the farmers’ perception about usefulness of extension system and their innovativeness.

The calculated correlation co-efficient value \( r = 0.11594 \) was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that there was positive and non-significant association between the level of perception about
usefulness of extension system and their innovativeness. The perception about usefulness of extension system and innovativeness of farmers were independent from each other.

This finding was in line with the findings of Perumal et al. (1988) and Pandya (1998).

5.3.1.3.3 Risk orientation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis ($H_0$), that there was no association between the farmers’ perception about usefulness of extension system and their risk orientation.

The calculated correlation co-efficient value $r = 0.00915$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be inferred that there was positive and non-significant association between the level of perception about usefulness of extension system and their risk orientation.

This finding was differed from the findings of Padmaiah and Ansari (1997) and Sawant (2001).

5.3.1.3.4 Overall modernity and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis ($H_0$), that there was no association between
the farmers’ perception about usefulness of extension system and their overall modernity.

The calculated correlation co-efficient value $r = 0.15671$ was found significant at 0.01 level. Thus, null hypothesis was rejected.

It can be concluded that there was positive and significant relationship between perception about usefulness of extension system and their overall modernity.

The modern farmers are more advanced and they always try to learn and adopt latest agriculture technologies which compel them to contact the extension personnel frequently and participate to considerable extent in different extension activities. This leads them to positive thinking about extension system might be the probable reason for this finding.

5.3.1.3.5 Economic motivation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis ($H_0.3$), that there was no association between the farmers’ perception about usefulness of extension system and their economic motivation.

The calculated correlation co-efficient value $r = 0.08077$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.
It can be inferred that there was positive and non-significant association between the level of perception about usefulness of extension system and their economic motivation.

This finding was in line with the findings of Perumal et al. (1988) and Padmaiah and Ansari (1997).

5.3.1.3.6 Achievement motivation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis (H₀₃), that there was no association between the farmers’ perception about usefulness of extension system and their achievement motivation.

The calculated correlation co-efficient value r = -0.0678 was negative and non-significant at 0.05 level. Thus, null hypothesis was accepted.

This indicated that the perception about usefulness of extension system and achievement motivation are independent from each other.

The finding of Pandya (1998) was in conformity with the present finding.

5.3.1.3.7 Credit orientation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis (H₀.3), that there was no association
between the farmers’ perception about usefulness of extension system and their credit orientation.

The calculated correlation co-efficient value $r = 0.05778$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was positive and non-significant relationship between perception about usefulness of extension system and their credit orientation.

5.3.1.3.8 Market orientation and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis ($H_03$), that there was no association between the farmers’ perception about usefulness of extension system and their market orientation.

The calculated correlation co-efficient value $r = 0.03789$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was positive and non-significant relationship between perception about usefulness of extension system and their market orientation.
IV. Communication characteristics

5.3.1.4.1 Communication behaviour and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis (H04), that there was no association between the farmers’ perception about usefulness of extension system and their communication behaviour.

The calculated correlation co-efficient value $r = 0.21168$ was found highly significant at 0.01 level. Thus, null hypothesis was rejected.

It can be concluded that there was positive and significant relationship between perception about usefulness of extension system and their communication behaviour.

This might be due to the fact that as the higher level of farmers’ exposure to the various sources of information through which the technologies are transmitted, help them to build positive thinking towards extension personnel and extension system. Hence their perception about usefulness of extension system is high.

This finding was in line with the findings of Sharma and Sharma (1988).
5.3.1.4.2 Mass media exposure and perception about usefulness of extension system

The data presented in Table 26 were used to test the null hypothesis $H_0$, that there was no association between the farmers’ perception about usefulness of extension system and their mass media exposure.

The calculated correlation co-efficient value $r = 0.22671$ was found highly significant at 0.01 level. Thus, null hypothesis was rejected.

It can be concluded that there was positive and highly significant relationship between perception about usefulness of extension system and their mass media exposure. It implies that an increase in mass media exposure was responsible for the increase in farmers’ perception about usefulness of extension system.

This might be due to the fact that the respondents with high exposure to mass media will always have more chance to collect useful information and proper guidance about usefulness of extension system which resulted in higher level of perception about usefulness of extension system.

5.3.1.4.3 Extension participation and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis $H_0$, that there was no association between the farmers’ perception about usefulness of extension system and their extension participation.
The calculated correlation co-efficient value $r = 0.14895$ was found significant at 0.05 level. Thus, null hypothesis was rejected and it can be inferred that there was positive association between extent of perception about usefulness of extension system and extension participation.

This is because of the fact that due to more participation in extension activities the respondents can get an opportunity to interact with extension personnel and other farmers which help them to share their experience of farming and learn new information regarding scientific agriculture and other relevant knowledge. Thus, their perception about the usefulness of extension system is high.

5.3.1.4.4 Localite-cosmopolite value orientation and perception about usefulness of extension system

The data presented in the Table 26 were used to test the null hypothesis ($H_0.4$), that there was no association between the farmers’ perception about usefulness of extension system and their localite-cosmopolite value orientation.

The calculated correlation co-efficient value $r=-0.05145$ was found non significant at 0.05 level. Thus, null hypothesis was accepted.

It can be concluded that there was negative and non-significant relationship between perception about
usefulness of extension system and their localite-cosmopolite value orientation.

Based on the above results of correlation analysis, it can be concluded that the variables viz; age, education, reading habit, overall modernity, communication behaviour, mass media exposure, and extension participation had significant relationship with farmers’ perception about the usefulness of present extension system which are shown in fig. 4.

5.3.2 Extent of variation

5.3.2.1 Multiple regression analysis

The association between dependent and selected independent variables was ascertained by computing correlation co-efficient (r-value) of the variables. The ‘r’ value only gives the strength and direction of association but does not focus on the predictive ability of independent variables on the dependent variable. Hence, the multiple regression was worked out to trace the predictive abilities of independent variables on the dependent variable. The regression equation models were derived accordingly. The predictive power of each multiple regression was estimated with the help of the co-efficient of multiple determinations ($R^2$).

In multiple regression analysis, all the 22 independent variables were fitted to explain the variation in perception
about usefulness of extension system. The results are presented in Table 27.

Table 27: Multiple regression between the perception about usefulness of extension system and their independent variables.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Variables</th>
<th>Regression Coefficient(b)</th>
<th>S.E. of &quot;b&quot;</th>
<th>‘t’ value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Personal characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age (X₁)</td>
<td>0.10</td>
<td>0.0057</td>
<td>1.824</td>
</tr>
<tr>
<td>2</td>
<td>Education (X₂)</td>
<td>1.94</td>
<td>0.16</td>
<td>11.938**</td>
</tr>
<tr>
<td>3</td>
<td>Size of family (X₃)</td>
<td>0.13</td>
<td>0.40</td>
<td>0.335</td>
</tr>
<tr>
<td>4</td>
<td>Reading habit (X₄)</td>
<td>0.81</td>
<td>0.37</td>
<td>2.205*</td>
</tr>
<tr>
<td>5</td>
<td>Decision making ability (X₅)</td>
<td>0.51</td>
<td>0.42</td>
<td>1.183</td>
</tr>
<tr>
<td>6</td>
<td>Training received (X₆)</td>
<td>0.25</td>
<td>1.21</td>
<td>0.205</td>
</tr>
<tr>
<td><strong>II. Socio-economic characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Annual income (X₇)</td>
<td>-0.0434</td>
<td>0.0966</td>
<td>-0.449</td>
</tr>
<tr>
<td>2</td>
<td>Social participation (X₈)</td>
<td>-0.25</td>
<td>0.38</td>
<td>-0.648</td>
</tr>
<tr>
<td>3</td>
<td>Size of land holding (X₉)</td>
<td>-0.0624</td>
<td>0.34</td>
<td>-0.182</td>
</tr>
<tr>
<td>4</td>
<td>Irrigation potentiality (X₁₀)</td>
<td>-0.0468</td>
<td>0.0258</td>
<td>-0.132</td>
</tr>
<tr>
<td><strong>III. Psychological characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Scientific orientation (X₁₁)</td>
<td>-0.19</td>
<td>0.20</td>
<td>-0.954</td>
</tr>
<tr>
<td>2</td>
<td>Innovativeness (X₁₂)</td>
<td>0.19</td>
<td>0.56</td>
<td>0.338</td>
</tr>
<tr>
<td>3</td>
<td>Risk orientation (X₁₃)</td>
<td>0.0805</td>
<td>0.33</td>
<td>0.241</td>
</tr>
<tr>
<td>4</td>
<td>Overall modernity (X₁₄)</td>
<td>0.26</td>
<td>0.11</td>
<td>2.332*</td>
</tr>
<tr>
<td>5</td>
<td>Economic motivation (X₁₅)</td>
<td>0.42</td>
<td>0.54</td>
<td>0.779</td>
</tr>
<tr>
<td>6</td>
<td>Achievement motivation (X₁₆)</td>
<td>0.17</td>
<td>0.39</td>
<td>0.437</td>
</tr>
<tr>
<td>7</td>
<td>Credit orientation (X₁₇)</td>
<td>1.50</td>
<td>0.98</td>
<td>1.529</td>
</tr>
<tr>
<td>8</td>
<td>Market orientation (X₁₈)</td>
<td>0.15</td>
<td>0.41</td>
<td>0.357</td>
</tr>
<tr>
<td><strong>IV. Communication characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Communication behaviour (X₁₉)</td>
<td>0.049</td>
<td>0.0271</td>
<td>1.819</td>
</tr>
<tr>
<td>2</td>
<td>Mass media exposure (X₂₀)</td>
<td>0.59</td>
<td>0.27</td>
<td>2.611**</td>
</tr>
<tr>
<td>3</td>
<td>Extension participation (X₂₁)</td>
<td>0.13</td>
<td>0.17</td>
<td>0.757</td>
</tr>
<tr>
<td>4</td>
<td>Localite-cosmopolite value orientation (X₂₂)</td>
<td>-1.54</td>
<td>0.054</td>
<td>2.850**</td>
</tr>
</tbody>
</table>
All the independent variables mentioned in Table 27 explained as much as 60.00 per cent of total variation in the perception about usefulness of extension system. The unexplained variation was of 40.00 per cent may be due to the factors outside the scope of the study.

It can also be revealed that the “t” values of three variables viz; education, mass media exposure and localite-cosmopole value orientation were significant at 0.01 level of significance and ‘t’ value of two variables i.e. reading habit and overall modernity were significant at 0.05 level of significance. These five variables significantly contributed in explaining the variation in perception about the usefulness of extension system.

Remaining variables have failed to contribute significantly in farmers’ perception about the usefulness of present extension system.

It can be concluded that 60.00 per cent total variation in perception about usefulness of extension system was explained by set of 22 independent variables together. It can also be concluded that out of 22 variables, five variables viz; education, reading habit, overall modernity, mass media exposure, and localite-cosmopolite value orientation had significant contribution in perception.
about usefulness of extension system. This result provides evidence about the overwhelmingly important role of five significant variables in achieving higher perception about usefulness of extension system, which presented in Fig.5.

5.3.2 Stepwise multiple regression analysis:

Efroymsons (1962) stated that stepwise regression is one such method, which has been widely adopted in multiple regression analysis now a days. It has the added advantage that at each stage of analysis, every variable is subjected to an examination for its predictive value. Based on this approach, the stepwise multiple regression analysis was carried out to know the important variables with their predictive ability in explaining the variation in the dependent variable.

In stepwise regression analysis, all the 22 independent variables were considered and the results are presented in Table 28.

It is clear from Table 28 that the seven variables viz, age, education, reading habit, mass media exposure, localite-cosmopolite value orientation, overall modernity and communication behaviour put together explained as much as 59.00 per cent of total variation in the perception about usefulness of extension system. The unexplained variation was 41.00 per cent might be due to factors other than above-mentioned seven factors.
Table 28: Stepwise multiple regression analysis of perception about usefulness of extension system. (n=180)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Independent variables</th>
<th>Partial Regression</th>
<th>S.E. of bi</th>
<th>‘t’ value</th>
<th>‘f’ value</th>
<th>Std. partial regression</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age (X₁)</td>
<td>0.10</td>
<td>0.0455</td>
<td>5.104**</td>
<td>5.104**</td>
<td>0.0288</td>
<td>VI</td>
</tr>
<tr>
<td>2</td>
<td>Education (X₂)</td>
<td>1.95</td>
<td>0.15</td>
<td>17.654**</td>
<td>17.654**</td>
<td>0.4980</td>
<td>I</td>
</tr>
<tr>
<td>3</td>
<td>Reading habit (X₄)</td>
<td>0.60</td>
<td>0.26</td>
<td>5.265**</td>
<td>5.265**</td>
<td>0.0297</td>
<td>V</td>
</tr>
<tr>
<td>4</td>
<td>Overall modernity (X₁₄)</td>
<td>0.26</td>
<td>0.10</td>
<td>6.523**</td>
<td>6.523**</td>
<td>0.0365</td>
<td>IV</td>
</tr>
<tr>
<td>5</td>
<td>Communication behaviour (X₁₉)</td>
<td>0.0447</td>
<td>0.0246</td>
<td>3.288**</td>
<td>3.288**</td>
<td>0.0188</td>
<td>VII</td>
</tr>
<tr>
<td>6</td>
<td>Mass media exposure (X₂₀)</td>
<td>0.57</td>
<td>0.21</td>
<td>7.690**</td>
<td>7.690**</td>
<td>0.0428</td>
<td>III</td>
</tr>
<tr>
<td>7</td>
<td>Localite-cosmopolite value orientation (X₂₂)</td>
<td>-1.55</td>
<td>0.44</td>
<td>12.208**</td>
<td>12.208**</td>
<td>0.0663</td>
<td>II</td>
</tr>
</tbody>
</table>

Constant=116.13    R²= 0.59    Multiple R= 0.77

**= Significant at 0.01 level significance

It can also be seen from the Table 28 that the ‘t’ value and ‘f’ values for all the seven variables were found significant at 0.01 level of significance indicating significant contribution of these seven variables on perception about usefulness of extension system. The partial regression coefficient indicated that one unit change in age, education, reading habit, mass media exposure, localite-cosmopolite value orientation, overall modernity and communication behaviour would change 0.10 units, 1.95 units, 0.60 units, 0.57 units, -1.55 units, 0.26 units and 0.0447 units in the perception about usefulness of extension system, respectively.
As results of stepwise regression analysis, following regression model was obtained.

\[ Y = a + b_1 X_1 + b_2 X_2 + b_4 X_4 + b_{14} X_{14} + b_{19} X_{19} + b_{20} X_{20} + b_{22} X_{22} \]

Where,

- \( Y \) = Predicted dependent variable
- \( a \) = The intercept i.e. 116.13
- \( b_1 \) = Partial regression coefficient of \( Y \) on \( X_1 \) (age)
- \( b_2 \) = Partial regression coefficient of \( Y \) on \( X_2 \) (education)
- \( b_4 \) = Partial regression coefficient of \( Y \) on \( X_4 \) (reading habit)
- \( b_{14} \) = Partial regression coefficient of \( Y \) on \( X_{14} \) (overall modernity)
- \( b_{19} \) = Partial regression coefficient of \( Y \) on \( X_{19} \) (communication behaviour)
- \( b_{20} \) = Partial regression coefficient of \( Y \) on \( X_{20} \) (mass media exposure)
- \( b_{22} \) = Partial regression coefficient of \( Y \) on \( X_{22} \) (localite-cosmopolite value orientation)

Therefore, the fitted equation is as under

\[ Y = (116.13) + (0.10) X_1 + (1.95) X_2 + (0.60) X_4 + (0.26) X_{14} + (0.045) X_{19} + (0.57) X_{20} + (-1.55) X_{22} \]

The various independent variables had their own units of measurement, which did not permit a comparison of the partial regression coefficient values. To facilitate the comparison, the partial regression values were converted into standard partial values, which were free from the units of measurements. The independent variables were then
ranked based on standard partial regression coefficient values (b), which are presented earlier in Table 28. The order of these seven variables from highest to lowest was as (i) education (0.4980) (ii) localite-cosmopolite value orientation (0.0663), (iii) mass media exposure (0.0428), (iv) overall modernity (0.0365), (v) reading habit (0.0297), (vi) age (0.0288) and (vii) communication behaviour (0.0188).

The stepwise variations accounted by different independent variables are presented in Table 29 and Fig. 6.

It is clear from Table 29 and Fig. 6 that the variable, education alone account 50 per cent variation in perception about usefulness of extension system followed by cosmopolite value orientation + education (52.00 per cent), communication behaviour + education + cosmopolite value orientation (54.00 per cent), mass media exposure + education + localite-cosmopolite value orientation + communication behaviour (55.00 per cent), overall modernity + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure (57.00 per cent), reading habit + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure + overall modernity (58.00 per cent) and age + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure + overall modernity + reading habit (59.00 per cent).
Table 29: Stepwise variation accounted by different independent variables in perception about usefulness of extension system.

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Variables included</th>
<th>Multiple ‘R’</th>
<th>Total variation accounted (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Education (X₂)</td>
<td>0.71</td>
<td>0.50 (50.00%)</td>
</tr>
<tr>
<td>II</td>
<td>Localite-cosmopolite value orientation (X₂₂) + (X₂)</td>
<td>0.72</td>
<td>0.52 (52.00%)</td>
</tr>
<tr>
<td>III</td>
<td>Communication behavior (X₁₉) + (X₂₂) + (X₂)</td>
<td>0.73</td>
<td>0.54 (54.00%)</td>
</tr>
<tr>
<td>IV</td>
<td>Mass media exposure (X₂₀) + (X₁₉) + (X₂₂) + (X₂)</td>
<td>0.74</td>
<td>0.55 (55.00%)</td>
</tr>
<tr>
<td>V</td>
<td>Overall modernity (X₁₄) + (X₂₀) + (X₁₉) + (X₂₂) + (X₂)</td>
<td>0.75</td>
<td>0.57 (57.00%)</td>
</tr>
<tr>
<td>VI</td>
<td>Reading habit (X₄) + (X₁₄) + (X₂₀) + (X₁₉) + (X₂₂) + (X₂)</td>
<td>0.76</td>
<td>0.58 (58.00%)</td>
</tr>
<tr>
<td>VII</td>
<td>Age (X₁) + (X₄) + (X₁₄) + (X₂₀) + (X₁₉) + (X₂₂) + (X₂)</td>
<td>0.77</td>
<td>0.59 (59.00%)</td>
</tr>
</tbody>
</table>

It can be concluded from the above results of stepwise regression analysis that 59.00 per cent variation was accounted by a set of seven independent variables viz; education, localite-cosmopolite value orientation,
communication behaviour, mass media exposure, overall modernity, reading habit and age in perception about usefulness of extension system. Education of respondent alone was accounted 50.00 per cent variation. The standard partial value also indicated that the education (49.80) was in highest order of magnitude, which reflected its importance.

5.4 SHORTFALLS IN PRESENT AGRICULTURE EXTENSION SYSTEM AS PERCEIVED BY THE FARMERS

The shortfalls were kept open ended. The responses were recorded in the schedule itself. The frequency for each shortfall was worked out and converted into percentage. A rank was assigned to each shortfall based on percentage. The data are given in Table 30.

Table 30: Shortfalls faced by the respondents in present extension system

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Shortfalls</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inadequate emphasis for improving small resource poor farmers</td>
<td>95</td>
<td>52.78</td>
<td>VII</td>
</tr>
<tr>
<td>2.</td>
<td>Lack of technical competence</td>
<td>140</td>
<td>77.78</td>
<td>II</td>
</tr>
<tr>
<td></td>
<td>with grass root level extension functionaries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>No provision of immediate solutions for field problem by VEWs’</td>
<td>80</td>
<td>44.44</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Unavailability of services of VEWs’ as and when required</td>
<td>150</td>
<td>83.33</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Information pertaining to location specific problem was lacking with VEWs’</td>
<td>130</td>
<td>72.22</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Message lacking the information about credit delivery, marketing, banking, crop weather linkages etc.</td>
<td>55</td>
<td>30.56</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Lack of provision of relevant input such as seed, pesticides, insecticides etc. along with technology</td>
<td>85</td>
<td>47.22</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Lack of consideration for innovative ideas of the farmers</td>
<td>40</td>
<td>22.22</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Insufficient facilities for farmers training</td>
<td>70</td>
<td>38.89</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Lack of timely provision of relevant input such as seed, pesticides, insecticides etc.</td>
<td>105</td>
<td>58.33</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Lack of timely information about latest technology</td>
<td>110</td>
<td>61.11</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Lack of provision of sufficient demonstrations</td>
<td>65</td>
<td>36.11</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>VEWs’ having less qualification</td>
<td>50</td>
<td>27.78</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Latest technologies did not fulfil the farmers need.</td>
<td>120</td>
<td>66.67</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>VEWs’ did not give sufficient</td>
<td>35</td>
<td>19.44</td>
<td></td>
</tr>
</tbody>
</table>
It is obvious from the Table 30 that majority of shortfalls as reported by respondents were: unavailability of services of VEWs’ as and when required (83.33%), lack of technical competence with grass root level extension functionaries (77.78%), information pertaining to location specific problem was lacking with VEWs’ (72.22%), latest technologies did not fulfill farmers needs (66.67%), and lack of timely information about latest technology (61.11%).

Other general short falls faced by the respondents were: lack of timely provision of relevant input such as seed, pesticides, insecticides etc. (58.33), inadequate emphasis for improving small resource poor farmers (52.78%), lack of provision of relevant input such as seed, pesticides, insecticides etc. along with technology (47.22%), no provision of immediate solutions for field problem by VEWs’ (44.44%), insufficient facilities for farmers training (38.89%), lack of provision of sufficient demonstrations (36.11%), message lacking the information about credit delivery, marketing, banking, crop weather linkages etc. (30.56%), VEWs’ having less qualification (27.78 %), lack of consideration for innovative ideas of the farmers (22.22%), VEWs’ did not give sufficient information about latest
technologies (19.44%), demonstrations were not arranged before introduction of new technologies (16.67%), and VEWs’ were not sufficient (13.87%).

From above discussion, it could be concluded that majority of the respondents faced the shortfalls of unavailability of services of VEWs’ as and when required (rank first), lack of technical competence with grass root level extension functionaries (rank second) and information pertaining to location specific problem was lacking with VEWs’ (rank third). While least number of the respondents faced the shortfalls of VEWs’ did not give sufficient information about latest technologies (fifteenth rank), demonstrations were not arranged before introduction of new technologies (sixteenth rank) and VEWs’ were not sufficient (seventeenth rank).

5.5 EXPECTATION ABOUT FUTURE AGRICULTURE EXTENSION SYSTEM

For ascertaining the expectation to overcome the shortfalls in present extension system, the expectations were invited openly from the respondents. The frequency was calculated for each expectation and converted into percentage. The expectations along with their percentage are presented in Table 31.

Table 31: Expectations to overcome the shortfalls in present extension system

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Expectations</th>
<th>Freque-</th>
<th>Percen-</th>
<th>Rank</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Provision</th>
<th>ncy</th>
<th>tage</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adequate emphasis for improving small resource poor farmers</td>
<td>100</td>
<td>55.55</td>
<td>VII</td>
</tr>
<tr>
<td>2.</td>
<td>On the spot solution to farmers problem be made available</td>
<td>140</td>
<td>77.78</td>
<td>II</td>
</tr>
<tr>
<td>3.</td>
<td>Provision of VEWs’ in each villages</td>
<td>145</td>
<td>80.55</td>
<td>I</td>
</tr>
<tr>
<td>4.</td>
<td>Provision of relevant input such as seed, pesticides, insecticides etc.</td>
<td>105</td>
<td>58.3</td>
<td>VI</td>
</tr>
<tr>
<td>5.</td>
<td>Innovative ideas of the farmers must be taken in consideration</td>
<td>20</td>
<td>1.11</td>
<td>XVI</td>
</tr>
<tr>
<td>6.</td>
<td>Provision of timely relevant input such as seed, pesticides, insecticides</td>
<td>95</td>
<td>52.78</td>
<td>VIII</td>
</tr>
<tr>
<td>7.</td>
<td>Schedule of frequent training to the VEWs’</td>
<td>90</td>
<td>50.00</td>
<td>IX</td>
</tr>
<tr>
<td>8.</td>
<td>Create training facilities for farmers at taluka levels</td>
<td>80</td>
<td>44.44</td>
<td>X</td>
</tr>
<tr>
<td>9.</td>
<td>Provision of sufficient relevant input such as seed, pesticides, insecticides</td>
<td>60</td>
<td>33.33</td>
<td>XII</td>
</tr>
<tr>
<td>10.</td>
<td>VEWs’ must know the location specific problems</td>
<td>70</td>
<td>38.89</td>
<td>XI</td>
</tr>
<tr>
<td>11.</td>
<td>New technologies must be evolved as per the needs of the farmers</td>
<td>130</td>
<td>72.22</td>
<td>III</td>
</tr>
<tr>
<td>12.</td>
<td>Before transmission of any new technologies it must adequately refine on farmers field under close supervision of researchers, extension</td>
<td>125</td>
<td>69.44</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>personnel and farmers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Appoint grass root level extension personnel on the basis of their qualification, aptitudenal test and physical fitness</td>
<td>115</td>
<td>63.89</td>
<td>V</td>
</tr>
<tr>
<td>14.</td>
<td>Make the necessary arrangement for maximum field demonstrations on farmers field</td>
<td>40</td>
<td>22.22</td>
<td>XIV</td>
</tr>
<tr>
<td>15.</td>
<td>Provision of timely information of new technologies</td>
<td>50</td>
<td>27.78</td>
<td>XIII</td>
</tr>
<tr>
<td>16.</td>
<td>Make necessary arrangement for timely information about messages, such as credit delivery, marketing, banking, crop weather linkages etc.</td>
<td>30</td>
<td>16.67</td>
<td>XV</td>
</tr>
</tbody>
</table>

The most important expectations offered by the respondents to overcome the shortfalls in present extension system were: provision of VEWs’ in each villages (80.55%), on the spot solution to farmers problem be made available (77.78), new technologies must be evolved as per the needs of the farmers (72.22%), before transmission of any new technologies it must adequately refine on farmers field under close supervision of researchers, extension personnel and farmers (69.44%) and appoint grass root level extension personnel on the basis of their qualification, aptitudenal test and physical fitness (63.89%).

The comparatively less important expectation as expressed by the respondents were: provision of relevant
input such as seed, pesticides, insecticides etc. along with new technology (58.33%), adequate emphasis for improving small resource poor farmers (55.56%), provision of timely relevant input such as seed, pesticides, insecticides etc. (52.78%), schedule of frequent training to the VEWs’ (50.00%), create training facilities for farmers at taluka levels (44.44%), VEWs’ must know the location specific problems (38.89%), provision of sufficient relevant input such as seed, pesticides, insecticides etc. (33.33%), provision of timely information of new technologies (27.78%), make the necessary arrangement for maximum field demonstrations on farmers field (22.22%), make necessary arrangement for timely information about messages, such as credit delivery, marketing, banking, crop weather linkages etc. (16.67%) and innovative ideas of the farmers must be taken in consideration (11.11%).

It can be concluded that important expectations offered by the respondents were: provision of VEWs’ in each villages (rank first), on the spot solution to farmers problem be made available (rank second) and new technologies must be evolved as per the needs of the farmers (rank third). At the same time the least important expectations offered by the respondents were: innovative ideas of the farmers must be taken in consideration (sixteenth rank), make necessary arrangement for timely information about messages, such as credit delivery, marketing, banking, crop weather linkages etc. (fifteenth rank) and make the necessary
arrangement for maximum field demonstrations on farmers field (fourteenth rank).

CHAPTER VI
SUMMARY AND CONCLUSIONS

In this chapter, a nutshell description of the study in respect of the summary, conclusion, implications and suggestions for the further research is included. This chapter has been divided into the following sub-heads:

6.1 Summary
6.2 Major finding and Conclusions
6.3 Implications of the study
6.4 Suggestions for further research

6.1 SUMMARY

6.1.1 Introduction

Agricultural extension system is the central mechanism in the agricultural development process, both in terms of technology transfer and resource development. The development of agriculture is mostly depending upon agricultural extension system. Looking to the prevailing extension system, it is felt that there is a wide gap exist
between available agricultural technology and its adoption on farmers field.

Perception can be defined as a process by which individual organize and interpret their sensory impressions in order to give meaning to other environment (Leavitt, 1958).

At present various extension education programme are being implemented by State and Central Government, Non-Government Organizations and State Agricultural Universities and Private agencies. The success or failure of the extension system depend upon how far its clients perceived the same. The perception plays an important role for success or failure of extension system. In this investigation an attempt is made to know the perception of respondents about usefulness of extension system.

In the present context of globalization and liberalization, a shift taking place in agriculture sector from more subsistence to commercial level. With liberalization of economy our agricultural markets are opened to global producers. This has shifted emphasis on agricultural production at globally competitive prices. Intensive cultivation of land without conservation of natural resources resulted into imbalancing of economy. This has also resulted in to various atmospheric changes, leading to form new farming situations.

To meet these emerging issues, problems and challenges in agricultural sector, it is worth necessary to have a strong and efficient extension system. Therefore to
understand the usefulness of present extension system for its beneficiaries, the study entitled “Farmers’ Perception about Usefulness of Agriculture Extension System” was undertaken in Saurashtra region of Gujarat State with the following specific objectives:

1. To study the selected characteristics of farmers
2. To develop and standardize a scale to measure the perception of farmers about usefulness of extension system
3. To measure the perception of farmers about usefulness of extension system
4. To explore the relational analysis of selected variables of farmers
5. To know the shortfalls in present extension system as perceived by farmers
6. To study the expectations of the farmers about the future extension system

The theoretical orientation of the study was developed on the basis of the review of literature having direct or indirect bearing on the present investigation. The various concept utilized in the study were operationalized suitably. Tentative paradigm was laid down on the basis of the assumptions made. Hypothesis (H0: null form) were formulated with the help of theoretical orientation.

6.1.2 Methodology:
A sample of 180 respondents, representing 14 villages from 7 talukas of 4 district of Saurashtra region of Gujarat State was drawn by random sampling technique. In order to measure farmers’ perception about the usefulness of extension system, a perception scale was developed following the methodology suggested by Likert (1932) technique with slight modifications. Selected independent variables were measured either with help of developed scale or by developing schedules and indices.

An interview schedule with questions on the dependent and independent variables was used for collecting the data from the respondents. The data were collected by personal interview method. The data so collected were coded, classified, tabulated and analyzed in order to make the findings meaningful. The findings of the study and conclusions are summarized as below.

6.2 MAJOR FINDING AND CONCLUSIONS:
6.2.1 Development of scale to measure farmers’ perception about usefulness of extension system

Researcher has developed and standardized a scale to measure farmers’ perception about usefulness of extension system. While constructing the scale, the author has resorted methodology suggested by Likert (1932) with slight modifications in the procedure. A large number of statements were collected by way of referring to relevant books, journals and in consultation with extension experts. Initially 84 statements were selected and referred to 60
judges who were selected from the discipline of extension education and field extension services. They were asked to check each of the statements carefully for being favourable towards the perception about usefulness of extension system. Only 40 judges (67 per cent) responded. Item analysis as suggested by Edwards (1957) was used for rejecting statements in the method of summated rating. Thus in light of the criteria suggested by Edwards (1957), 36 items were finally selected, which formed actual (final) format of the perception scale about usefulness of extension system (Appendix-I).

The “content validity” as well as “criterion validity” was measured to conform the validity and “split halves” method of reliability was applied for determining the reliability of the scale.

6.2.2 Perception of the farmers about the usefulness of existing extension system

About two-thirds (53.89 per cent) of the respondents perceived the existing extension system as useful whereas, one fourth (25.00 per cent) of the respondents perceived the existing extension system as less useful and 21.11 per cent respondents perceived the existing extension system as more useful.

6.2.3 Characteristics of the respondents

Slightly less than one-half (47.22 per cent) of the respondents were from the young aged group, majority
(55.55 per cent) of the respondents were educated up to primary level of education, majority (61.11 per cent) of the respondents had medium size of family, majority (65.00 per cent) of the respondents had medium level of reading habit, majority (76.11 per cent) of the respondents had medium decision making ability, a large number of the respondents (40.00 per cent) were untrained, one-half (50.00 per cent) of the respondents had medium annual income (Rs. 15,000 to 25,000), more than half (56.50 per cent) of the respondents had medium social participation, two out of five (40.00 per cent) respondents were from the medium size of land holding category, majority (72.78 per cent) of the respondents had medium irrigation potentiality, majority (72.22 per cent) of the respondents had medium level of scientific orientation, more than half (52.78 per cent) of the respondents had medium level of innovativeness, majority (80.56 per cent) of the respondents had medium risk orientation, majority (76.67 per cent) of the respondents were from medium economic motivation group, majority (75.00 per cent) of the respondents were from medium achievement motivation group, more number (51.11 per cent) of the respondents were found to have medium level of credit orientation, majority (65.56 per cent) of the respondents were found to have medium level of market orientation, majority (72.22 per cent) of the respondents were found to have medium level of overall modernity, majority (60.65 per cent) of the respondents were found to have medium level of communication behaviour, majority
(69.44 per cent) of the respondents had medium level of mass media exposure, majority (61.11 per cent) of the respondents had medium extension participation and majority (58.89 per cent) of the respondents had medium level of localite-cosmopolite value orientation.

6.2.4 Relational analysis of the selected characteristics of the farmers

6.2.4.1 Correlation analysis:
Based on the coefficient of correlations, five independent variables viz; education, reading habit, overall modernity, mass media exposure and communication behavior were found having significant and positive relationships with perception about usefulness of extension system at 0.01 level of significance, while extension participation was found having significant and positive relationship with perception about usefulness of extension system at 0.05 level of significance. Whereas, age had significant but negative relationship with perception about usefulness of extension system at 0.05 level of significance.

6.2.4.2 Multiple regression analysis:
The five variables viz; education, reading habit, overall modernity, mass media exposure and localite-cosmopolite value orientation were found significantly contributing to farmers perception about usefulness of extension system. All the 22 independent variables together explained total
variation in perception about usefulness of extension system to the extent of 60.00 per cent.

6.2.4.3 Stepwise multiple regression analysis:
On the basis of the results of stepwise multiple regression analysis, education alone account 50 per cent variation in perception about usefulness of extension system followed by cosmopolite value orientation + education (52.00 per cent), communication behaviour + education + cosmopolite value orientation (54.00 per cent), mass media exposure + education + localite-cosmopolite value orientation + communication behaviour (55.00 per cent), overall modernity + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure (57.00 per cent), reading habit + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure + overall modernity (58.00 per cent) and age + education + localite-cosmopolite value orientation + communication behaviour + mass media exposure + overall modernity + reading habit (59.00 per cent).

6.2.5 Shortfalls and suggestions
6.2.5.1 Shortfalls faced in present agriculture extension system
The important shortfalls faced by more than 60.00 per cent of respondents were:
1. Unavailability of services of VEWs’ as and when required.

2. Lack of technical competence with grass root level extension functionaries.

3. Information pertaining to location specific problem is lacking with VEWs’.

4. Latest technologies did not fulfill the farmers need

5. Lack of timely information about latest technology

6.2.5.2 Expectations to overcome the shortfalls in present extension system

Out of 16 expectations given by the respondents to overcome the shortfalls in present extension system the five most important expectations suggested by more than 60.00 per cent respondents were:

1. Provision of VEWs’ in each village.

2. On the spot solution to farmers problem be made available.

3. New technologies must be evolved as per the needs of the farmers.

4. Before transmission of any new technologies it must adequately refine on farmers field under close supervision of researchers, extension personnel and farmers.

5. Appointment of grass root level extension personnel on the basis of their qualification, aptitude test and physical fitness.
The tentative paradigm developed in the beginning of the thesis while arriving at the conceptual framework of this study was given in fig. 1. Now final form of paradigm based on findings of this study is presented in fig. 7 showing only those independent variables that had statistically significant association with farmers’ perception about usefulness of extension system.

6.3 IMPLICATION OF THE STUDY

On the basis of present study following implications are made for improvement in present extension system.

1. The developed scale may be administered to any respondents with due modification to measure the farmers’ perception about usefulness of present extension system.

2. The study suggested that due weightage should be given to such characteristics of the farmers viz; age, education, reading habit, overall modernity, communication behaviour, mass media exposure and extension participation.

3. The characteristics of farmers viz; age, education, reading habit, overall modernity, communication behaviour, mass media exposure and extension participation had significant influence on the farmers’ perception about usefulness of extension system. The extension organizations should give due importance to develop the communication skill of farmers by organizing different extension activities frequently and
encourage them to participate in the same which help farmers to make their positive perception about
FIG 5: TOTAL VARIATION ACCOUNTED IN MULTIPLE REGRESSION ANALYSIS
usefulness of extension system. In order to do this extension personnel should be arranged training programme in the village situation as well as institutional training programme and put efforts to create the awareness regarding benefits of the present extension system.

4. The important shortfalls faced by most of the farmers may responsible for low or medium level of perception about usefulness of extension system. Hence, it is worth necessary to consider their shortfalls in future extension programme planning and try to minimize these shortfalls. This will help the framers towards improving the perception about usefulness of extension system.

6.4 SUGGESTIONS FOR FURTHER RESEARCH

This study leads the following areas for further research.

1. The study was confirmed to only Saurashtra region of Gujarat state. Such study can be repeated in other divisions of the State.

2. The area of research could be extended further and size of sample of respondents could also be increased in any future study to draw more valid and generalized conclusions.

3. In the present investigation, only farmer’s perception about usefulness of extension system was studied. The
similar study with farmers, extension personnel and researchers be undertaken in future.

4. Same study can be undertaken after five years of this study to know the change in farmers’ perception about usefulness of extension system.

5. The present study was restricted only to a few profile characteristics. The future study should include other aspects also and may also repeat periodically in the same as well as in neighbouring areas.
REFERENCES


Kaste and Rosenzweig (1982). Organisation and management: A system and contingency


Patel, V. B. (1987). Factors affecting the adoption of groundnut production technology and constraints experienced in adoption by groundnut growers of Junagadh District of


Temkar, G. K. (2000). A study on extent of knowledge and attitude towards artificial insemination in the


* Original not seen
From,
Dr. M. N. Popat
Professor and Head, Department of Extension Education
College of Agriculture, Junagadh (Gujarat)

Sir,

Mr. Chavda Vallabh N. a Ph. D. student in Extension Education working under my guidance is developing a scale to measure “Farmers’ perception about the usefulness of agriculture extension system”.

Farmers’ perception about the usefulness of agriculture extension system refers to the awareness of farmers, opinion, feeling, belief and action towards the object ascertained in personal interview situation. It could be positive, negative or neutral.

I am enclosing herewith a set of statements of five-point continuum to judge the suitability for measuring the farmers’ perception about usefulness of agriculture extension system. Kindly see that suitability of statements is to be judged as an instrument for inferring the perception.

Please go through the statements carefully and tick mark your responses in appropriate column depending upon your agreement as strongly agree, agree, undecided, disagree and strongly disagree as per its utility reasoning for measuring the farmers’ perception about the usefulness of agriculture extension system.

Hard pressure of time as you are, the rating procedure may appear a bit laborious one, but once you start doing this, you will find it easy and time consuming.

Having finished the rating you may kindly return the completed set of Annexure at address appearing on the top of the letter. An early return of Annexure after doing the needful will greatly facilitate this study.

Encl: App I

Your
(M. N. Popat)
# APPENDIX-I

## Farmers’ Perception about Usefulness of Agricultural Extension System

Below given are the statements regarding usefulness of existing extension system. You are requested to go through critically and tick (✓) marks in the appropriate column against each statement to show your extent of perception.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Items</th>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>DA</th>
<th>SDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Guidance through extension personnel has improved the knowledge and skill of the farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Extension personnel are capable of giving on the spot solution to the problem of the farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Extension personnel are capable of convincing the farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Extension system keep farmers in touch with latest technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Through the extension system schedule visits are arranged</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Visit of extension workers are specific and purposeful</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>Through the extension system receive timely advise on practice to be followed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Extension system provides practical information at right time</td>
<td></td>
<td></td>
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<tr>
<td>9.</td>
<td>Extension system provide information on no-cost/low cost technology such as timely sowing, sowing across slope, timely application of fertilizers etc.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10.</td>
<td>Extension system is to educate the farmers about recommended cultivation practice through trials</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11.</td>
<td>Extension system is emphasis to educate farmers by trials and error</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Information provided by extension system is adequate and timely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Extension system inform about profitable marketing of farm produce at nearest market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Extension system help in getting agriculture inputs such as seeds, fertilizers, plant protection chemicals and credit at right time</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>15.</td>
<td>Extension system provide opportunity to demonstrate practical skills to farmers</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>16.</td>
<td>Extension system organize field trips to see nearly demonstration plots</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Expertise provided is adequate and timely</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Expertise extended is practical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Expertise extended is essential to understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Surveys conducted for technology identification are adequate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Adaptive trials and demonstrations are adequate</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Adaptive trials and demonstrations are mandatory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Diagnostic visits and joint visits are timely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Diagnostic visits and field visits are well coordinated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Diagnostic visits and joint visits are adequate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Group discussion/meetings conducted are need based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Group discussion/meetings conducted are adequate and timely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Information provided by centre is adequate and practicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Information provided by centre is need based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Information centre is modern and well equipped with real objects and exhibits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Mass media participation is need based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Mass media participation of extension scientists for providing need based agricultural information is adequate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>The cost of the recommended technology is high hence scientists should provide low cost technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Sometime inputs are not available in the market hence extension worker should make it available before asking for its adoption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Extension worker provide the input, which is useful for increasing the yield</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Extension worker provide location specific and need based technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SA=Strongly agree, A=Agree, UD=Undecided, DA=Disagree, SDA=Strongly disagree
APPENDIX-II

Farmers’ Perception about Usefulness of Agricultural Extension System

Date/Number : 
Name : 
Name of the village : Taluka :

PART-I

1. Age------------------years
2. Formal Education :
3. Number of family members
   Male :
   Female :
   Children :
   Total :
4. Annual income
   Up to Rs. 15,000 :
   Rs.15001 to 25,000 :
   Above Rs. 25,000
5. Land holding : -----------------ha.
6. Social participation
   Are you a member or occupying any position in following organization? Yes/No
   If yes, please give details

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Organizations</th>
<th>Membership</th>
<th>Office bearer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Village panchayat</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Taluka panchayat</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>District panchayat</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Primary agriculture/service co-operative society</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Khedut charcha mandal</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Youth club</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Any other (specify)</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
8. Innovativeness:

“When would you prefer to adopt an improved practice in farming?”

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Statements</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>As soon as it is brought to my knowledge</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>After I have seen some other farmers using it successfully</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Prefers to wait and take my own time</td>
<td>1</td>
</tr>
</tbody>
</table>

10. Risk orientation:

Please read carefully each statement and furnish your risk orientation by putting tick (✓) mark on the following

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Statements</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>As individual should adopt more services to avoid greater risk involved in using one or two</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>An individual should rather take more chance in making a big profit than to be content with smaller but less risky profession</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>An individual who is willing to take greater risk than the average one, usually does better financial success</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>It is good for individual to take risk when he knows his chance of success is fairly high</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>It is better for an individual not to use it new services unless most others have used it with success</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Trying entirely new services in profession by an individual involve the risk but is it worth</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
11. Economic motivation:

Please read carefully each statements and furnish your views on economic motivation by putting tick ( √ ) mark against each of the following

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Statements</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>An individual should work towards large production and economic profit</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>The most successful is one who marks the most profit</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>An individual should try any new services, which may earn him more money</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>An individual should adopt successful service in comparison to others to increase monetary profit</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>It is difficult for children to make good start of profession without economic assistance from his father</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>An individual must earn from his livelihood but the most important thing in life is that it should not be defined in economic term</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

12. Achievement motivation

Please read carefully each statements and furnish your views on achievement motivation by putting tick (√) mark against each of the following

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Statements</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work should come first even if one can’t get proper rest in order to achieve the goal</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>To spend once life, trying to be successful is not worthy of once time</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
3. One should have determination and driving ambition to achieve certain things in his life, even if these qualities make one unpopular.

4. It is better to be satisfied, which whatever little. One has than to be always struggling for more.

5. One should work like a slave until he is satisfied with result.

6. I would like to try hard to get something really difficult even if it proves that I can't do it.

7. The ways thing happened now a days discourages one to work hard.

8. One should success in profession even if one had to neglect his family.

### 13. Decision making ability

Kindly furnish your decision-making ability by putting tick (✓) mark against each of the following.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Statements</th>
<th>Self decision</th>
<th>Consulted with others</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>To borrow the money</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>To purchase the inputs/machinery</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>To attained the meeting</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4.</td>
<td>To subscribe the magazine</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>To hire the daily labour</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>To increase/decrease the area</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>To execute the new ideas</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>8.</td>
<td>To grade the production</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>9.</td>
<td>To market the production</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>10.</td>
<td>To store the produce for profit</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
14. Extension participation

Kindly furnish your extension participation by putting tick ( √ ) mark against each of the following

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Extension activities</th>
<th>Extent of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regularly (when conducted)</td>
</tr>
<tr>
<td>1</td>
<td>Krushimela</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Demonstration</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Training Programme</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Field Days</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Fields Visit</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Night meeting</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Educational Tour</td>
<td>2</td>
</tr>
</tbody>
</table>

15. Reading habit

Do you read literature? Yes/No

If yes, please give details:

Extent of use of literature

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Kind of literature</th>
<th>Source of getting literature</th>
<th>Average hours for weekly reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>News papers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Magazins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Books</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Mass media exposure

Through which sources do you get the information about improved practices? How often do you use them?
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Sources</th>
<th>Regularly</th>
<th>Frequently</th>
<th>One in a week</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radio</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Demonstration</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Exhibition</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Meetings</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Agril. Publication</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>News paper</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Agril. Fair</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Training programme</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>Film</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Extension workers</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>Neighbours, friends &amp; relatives</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>Progressive farmers</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Any other (specify)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**17. Communication behaviour**

Indicate the frequency of your exposure to the following sources of information through which agricultural technology is transmitted.

(1) Did you contact any extension personnel/scientist during 2004-2005? Yes/No.

If yes, give details:
### Extension personnel

<table>
<thead>
<tr>
<th></th>
<th>Quit frequently (above 7)</th>
<th>Frequently (4-7)</th>
<th>Often (1-3)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Village level worker *</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>b) Agricultural Extension Officer</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>c) Taluka Development Officer / Sub-divisional Agril. Officer</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>d) J. A. U. Scientist</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

* In case of VLW the categories were as under:

Above 15 times a year in column 2, 9-15 times a year in column 3, 1-8 times a year in column 4 and never in a year in column 5.

(2) Give the details of your contact with different institutions or private centres in a year:

<table>
<thead>
<tr>
<th>Extension personnel</th>
<th>Quit frequently (above 4)</th>
<th>Frequently (3-4)</th>
<th>Often (1-2)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Market</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>b) Co-operatives</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c) Fertilizers/seed stores</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>d) Commercial agencies of pesticides/insecticides</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

(3) Do you seek the information about improved farming from following local persons?

If yes, than how many time in a month?
### Persons Frequency of discussion in a month

<table>
<thead>
<tr>
<th>Persons</th>
<th>Quit frequently (above 16)</th>
<th>Frequently (9-16)</th>
<th>Often (1-8)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Family members</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>b) Friends/relatives</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c) Neighbours</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>d) Fellow cultivators</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>e) Farmers of outside villages</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

(4) i) How many times in a week do you listen to the radio programme broadcasted by ARI, Rajkot?

### Programmes Frequency of listening in a week

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Quit frequently (above 3)</th>
<th>Frequently (2-3)</th>
<th>Often (1)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Krushi mahiti</td>
<td>2</td>
<td>1</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>b) Krushi vikas</td>
<td>2</td>
<td>1</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>c) Gamno choro</td>
<td>2</td>
<td>1</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>d) Akashwani khedut mandal</td>
<td>2</td>
<td>1</td>
<td>1/2</td>
<td>0</td>
</tr>
</tbody>
</table>

ii) Did you see the programme related to agriculture on television? (During last month)

   - Yes 1 score
   - No 0 score

(5) Have you visited agricultural demonstration at your own or other farmer's field? If yes, Give detail about your visit
(6) A) How many agricultural extension training courses/campus have you attend during last year?
   1. None  0 Score
   2. 1-2   1-2 score
   3. 3-4   4 score
   4. Above 5  5 score

B) Did you ever participate in krushi mela/Agril. Exhibition? Yes/No
   Yes, 2 score          No, 0 score

(7) Do you read agricultural literature? Yes/No
   If yes, give details about the literature you have read during last year

<table>
<thead>
<tr>
<th>Agril. literature</th>
<th>Quit frequently (Above 8)</th>
<th>Frequently (5-8)</th>
<th>Often (1-4)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) J. A. U. publication</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>b) Other journal</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c) Agril. Articles reading in newspaper</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

(8) Do you pass on the agricultural information to other farmers? Yes/No, If yes, then to whom and how many times in a month?
<table>
<thead>
<tr>
<th>Persons (Clientele)</th>
<th>Quit frequently (Above 16)</th>
<th>Frequently (9-16)</th>
<th>Often (1-8)</th>
<th>Never (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Family members</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>b) Friends/relatives</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c) Neighbours</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>d) Framers of outside village</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>e) Fellow cultivators</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### 18. Localite-cosmopolite value orientation

Following are the statements indicating the degree of localite-cosmopolite value orientation of the farmers. Kindly give your opinion against each statement by putting tick mark (√) in any response category of agreement.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A farmer can learn everything from the experience of his own villages</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>A man can escape numerous troubles and barrier, if he consults friends and neighbours</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>A farmer can fulfill all his needs with the help of his village folks</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Many things that a farmer ought to know are not only confined in his village but are like in other village</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>These days, when communication has so much advanced, a farmer</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
should know more of outside life

19. Credit orientation

Following are the statements indicating the degree of credit orientation of the farmers. Kindly give your opinion against each statement by putting tick mark (✓) in any response category of agreement.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statement</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Borrowing and reborrowing money (cash/kind) from a public credit institution after making timely repayment</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Borrowing money (cash/kind) but delaying in repayment reborrowing is sometimes forms</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Borrowing money (cash/kind) delaying repayment but not borrowing again</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Borrowing money (cash/kind) from a public credit institution and remaining de facilities in repaying the same for a long period</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Borrowing money (cash/kind) from more than one institution and repaying the loan in time</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Willing to borrowing money (cash/kind) but could not borrow due to ignorance of some others reasons</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>No willing to borrow money (cash/kind) from any public institution due to various reasons</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Borrowing money only from village money lenders and not from any public credit</td>
<td></td>
</tr>
</tbody>
</table>

20. Irrigation potentiality

Irrigated land:

a. Kharif-------- ha
b. Rabi---------ha
c. Summer-----ha
21. Market orientation

Following are the statements indicating the degree of market orientation of the farmers. Kindly give your opinion against each statement by putting tick mark (√) in any response category of agreement.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Market news is not so useful to a farmers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>A farmers can get good price by grading his products</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Storage can help the farmers to get better price of his produce</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>One should be sell his produce to the nearest market</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>One should be purchase his inputs from the same place where his other relatives purchase</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>One should be grow those varieties which have more market demand</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

22. Overall modernity

Please choose any of the alternative responses, which you think most correct.
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you think about social problems like a dowry, window marriage, crime etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Always</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>2. Sometimes</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>3. Never</td>
<td>( )</td>
</tr>
<tr>
<td>2</td>
<td>If education can easily be provided than how much education the children of people like you should get?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Graduate</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>2. Below graduate</td>
<td>( )</td>
</tr>
<tr>
<td>3</td>
<td>In your opinion which of the following statement is more correct?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. The cultivation of old varieties is alright and talk of changing it is a waste of time.</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>2. The cultivation of new/improved varieties give more yield through less labour</td>
<td>( )</td>
</tr>
<tr>
<td>4</td>
<td>To attain a high post which of the following qualities a man should possess?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. High family status</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>2. Traditionalism</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>3. Popularity</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>4. High education and specialized knowledge</td>
<td>( )</td>
</tr>
<tr>
<td>5</td>
<td>Which of the following is most important for the future of this country?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. World news</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>2. Country’s news</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>3. News of own town or village</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>4. Sports news</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>5. News about social and religious ceremonies</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>Are you connected with any organization for example religion of political party?</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>1.</td>
<td>Yes ( )</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>No ( )</td>
<td>1</td>
</tr>
</tbody>
</table>
7. Which of the following is most important for the future of this country?
   1. Hard labour of people ( ) 3
   2. Good Government schemes ( ) 2
   3. God’s grace ( ) 1
   4. Good rate ( ) 1

8. In the Agricultural Universities scientists are evolving many new HYV’s such discoveries are
   1. Very beneficial ( ) 4
   2. Some what beneficial ( ) 3
   3. Some what harmful ( ) 2
   4. Very harmful ( ) 1

**PART-II**

**Shortfalls in existing extension system**

On the basis of your past experience about present extension system, kindly give your shortfalls about future extension system.

**A) Shortfalls stated by the farmers:**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Shortfalls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
</tbody>
</table>
PART-III

Expectations about future extension system:

On the basis of your past experience about present extension system, kindly give your expectations about future extension system.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>