

DECISION MAKING ABILITY OF RURAL WOMEN IN VEGETABLES PRODUCTION

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DECISION MAKING ABILITY OF RURAL WOMEN IN VEGETABLES PRODUCTION

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CERTIFICATE

This is to certify that the thesis entitled, “**DECISION MAKING ABILITY OF RURAL WOMEN IN VEGETABLES PRODUCTION**” submitted to the department of Agricultural Extension & Information System, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **Master of Science (MS) in Agricultural Extension**, embodies the result of a piece of bonafide research work carried out by **Nusrat Zahan Zanis**, Registration No. 11-04245, under my supervision and guidance. No part of this thesis has been submitted for any other degree or diploma.

I further certify that any help or sources of information, as has been availed of during the course of investigation have been duly acknowledged.

Dated: June, 2017
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DEDICATION

**DEDICATED TO MY BELOVED
PARENTS**

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LIST OF ABBREVIATIONS

Abbreviation	Full word
Ag. Ext. Ed.	Agricultural Extension Education
Ag. Ext. and Info. Sys.	Agricultural Extension and Information System
AIS	Agriculture Information Service
BBS	Bangladesh Bureau of Statistics
DAE	Department of Agricultural Extension
<i>et. al.</i>	All Others
MoYS	Ministry of Youth and Sports

Decision Making Ability of Rural Women in Vegetables Production

Nusrat Zahan Zanis

ABSTRACT

Decision-making plays a vital role in agriculture enterprise, where women's high involvement is necessary and their participation in decision-making process is an important segment of each and every household. The research examines the extent of decision making ability of rural women in vegetables production and to explore the relationship of the selected characteristics of the rural women to their decision making ability in vegetables production. Five villages of Jatrapur union under Bagerhat Sadar upazilla of Bagerhat District was the locale of the study. Data were collected from 116 women vegetable cultivators from 04 April, 2017 to 03 May, 2017. Descriptive statistics and Pearson's Product Moment Coefficient of Correlation (r) were used for analysis. The highest proportion (62.1 %) of the respondent had medium decision making ability in vegetables production compared to 19.8% and 18.1% women had high and low decision making ability respectively in vegetables production. Among the variables, education, area under vegetable production, annual family income, benefit cost ratio (BCR), attitude towards vegetable cultivation, time spent in vegetable management, knowledge on vegetable cultivation of the rural women had significant positive relationship with their decision making ability in vegetables production. It was also found that most of the women (65.5%) faced medium constraints in decision making and the lowest proportion (12.9 %) of the women faced high constraints in decision making during vegetable cultivation. As woman play an important role in all sphere, they should be encouraged more and provided space in decision making regarding vegetable production.

CHAPTER I

INTRODUCTION

1.1 General Background

A rural woman is an entrepreneur as she plays an eminent role not only in agriculture but also in allied activities. Commencement of growing crops and domestication of animals has been attributed to women. Despite the fact, women since centuries have been vivaciously involved in farming and allied activities. Their prodigious work has been for long taken for granted and ignored studies conducted on women in India and other countries decipher the fact that women contributed for more to agricultural production than has been generally acknowledge. Women have been putting not only the physical labor but also in terms of quality and efficiency. Realizing the remarkable and resplendent role of women in agriculture should not obscure, but also women play a decisive role as wives, mothers and homemaker. There is no denying the fact that women as cultivators, agriculture labors artisans and as housewives constitute a sizeable section of the rural work force and have been bereaved of their basic rights and suffer utter neglect over centuries but still they made appreciating contribution in all walks of life Rural women occupy a low position on all fronts in society. The human society today is witnessing unprecedented changes in all works of life due to rapid development of science and technology. Consequently every human being is called upon to make adjustments, which involve series of decisions.

Decision-making is at the root of all human activities. Every individual is confronted with problems of decision making in all walks of life. Every action of an individual is the result of conscious or unconscious arrived at by him. Decision is one of a sequence. Present decision has its root in the past and reflects the nature of future decision. Decision-making is important because much of the success of any enterprise and particularly farming depends upon

how well the family makes decision. Every action of an individual is the result of conscious or unconscious decisions. The present decision has its roots in the past and reflects upon the future decision.

The UNDP human development report indicates that Bangladesh attain rank 139 among the 188 countries in its Gender Inequality Index (UNDP, 2016). This ranking refers to women have restricted access to the wage labor market and have an inequitable share of power in household decision making.

A family woman as wife and mother has a considerable part in decision-making in the form and home matters. Only when a woman in the family is convinced about the efficiency of new ideas in agriculture, they would be implemented on a large scale. Farm business is a family enterprise, in which husband and wife participate equally. It is therefore expected that all decision related to farm and home operations are taken without consulting others or by consulting the spouse/elder or by consulting all the family members, individually by the husband or wife.

In the vegetable growers, women perform a variety of tasks both in cultivation as well as marketing. With the advent of science and technology, the rural society is witnessing unprecedented changes in all spheres of life; consequently, the members of families involved in vegetable cultivation are called upon to make certain adjustments which involve series of decisions. Practices related to vegetable cultivation have now been considered as a family enterprise in which husband and wife participate to share work and pleasure both. Thus, it is expected that all decisions related to practice of vegetable cultivation are also taken jointly. Vegetables provide a good source of income to the growers and play an important role in human nutrition. They are quick growing and yield immediate returns to the growers. In contrast weather, climate and soil of Bangladesh are very much suitable growing vegetables round the year. But vegetable production is so low that per capita/day

availability is hardly 112 gm whereas the requirement is estimated to 400 gm. (FAO, 2003).

Vegetables are rich and comparatively cheaper sources of vitamins and minerals. Their consumption in sufficient quantities provides taste palatability and increases appetite and provides fair amount of fibers.

For agricultural modernization in the country as well as transformation of family life in rural society, it is very important to make cocksure the role of females in decision-making process. However women are mostly used as manual power without any opportunity to take decision. Men's dominant and authoritative role while that of women's subtle and persuasive role which has been in vogue since time immemorial, joint family system vast gap between the improved technology and women certain norms of tradition and culture are some likes, which debar women from participation in decision making. So this necessitated the researcher to conduct a detailed study on the rural women in farm decision-making with respect to all go farm and allied activities. On the above considerations, the researcher of this study felt necessity to conduct the research on **“Decision Making Ability of Rural Women in Vegetables Production of Bagerhat Sadar Upazila under Bagerhat District”**

1.2 Statement of the Problem

Women usually have limited accesses to resources and opportunities and their productivity remains low relative to their potential. The rural women generously credit their spouse for all decisions taken on their farm and allied activities. As the involvement of women in farm and allied activities remain invisible, so also their contributions to the decision-making. Earlier researchers have studied the participation of women in decision-making relating to few aspects of farming. But few studies have been conducted on the participation pattern of rural women in farm decision-making. For agricultural modernization in the country as well as transformation of family life in rural society, it is very important to make cocksure the role of females in decision

making process. However, women are mostly used as manual power without any opportunity to take decision. Men's dominant and authoritative role while that of women's subtle and persuasive role which has been in vogue since time immemorial, joint family system vast gap between the improved technology and women certain norms of tradition and culture are some likes, which debar women from participation in decision making. The inequality in the provision of education reflects the deep rooted tradition and values within the ideological, political, economical and socio cultural structure of societies. In terms of ownership of property, the women in this country have no equal right as men. In addition, the dominance of men in various activities like agricultural production affects highly the empowerment of women. The purpose of this study was therefore to evaluate the decision making ability of rural women in vegetables production. In order to formulate suitable strategic measures for the decision making ability of rural women in vegetables production, this research was undertaken to answer the following questions:

- What is the extent of decision making ability of rural women in vegetables production?
- What are the characteristics of the rural women?
- What is the relationship between each of the selected characteristics of the rural women and their decision making ability?
- What type of constraints faced by the rural women?

In order to get a clear view of the above questions, the investigator undertook a study entitled 'Decision Making Ability of Rural Women in Vegetables Production of Bagerhat Sadar Upazilla under Bagerhat District'.

1.3 Justification of the Study

Rural women always experience a series of economic or social dependencies on men. However, deep economic and social changes occurred during the industrial revolution, leading to definition of new values and norms and destruction of old traditional patterns that used to limit women's activities to

the family and inside the homes enabling women to have their opinions about subjects out of their families and homes and, thus, to make their own decisions. Women's employment, therefore, helped them to acquire their own right to participate and to make decisions about their families.

Women account more than half of the total community and their contribution in securing their family food demand through vegetable production is of great importance. But the society gave them less attention. Therefore, this study aimed at uncovering the role of rural women in decision making ability in vegetables production and how they fill the gap of vegetable production in the family. The output of the study could be significant for decision makers in providing valuable information with regard to the role of rural women in decision making ability in vegetables production, other activities and work load, and hence formulate gender sensitive development projects. And finally it creates awareness among the society and outsiders on the role played by women and give due respect to their contribution.

1.4 Objectives of the Study

The following objectives were framed out in order to get an appropriate track to the research work:

- i. To assess the extent of decision making ability of rural women in vegetables production;
- ii. To describe the following selected characteristics of the rural women:
 - Age
 - Education
 - Family size
 - Area under vegetable production
 - Vegetable cultivation experience
 - Annual family income
 - Annual income from vegetable production
 - Time spent in vegetable management
 - Organizational participation

- Extension contact
 - Training exposure
 - Knowledge on vegetable cultivation;
- iii. To explore the relationship between each of the selected characteristics of the rural women and their decision making ability; and
 - iv. To compare the problems faced by the rural women in decision making ability;

1.5 Scope or Rationale of the study

The present study was designed to have an understanding decision making ability of rural women in vegetables production and to explore the relationship between selected characteristics of the rural women and decision making ability.

- i. The findings of the study will, in particular, be applicable to the study area at Bagerhat Sadar Upazila. The findings of the study will be applicable to other areas where as similar condition exists.
- ii. Researches done in the field of decision-making of farm women are very limited. It is hoped that this study will provide guidance in identifying steps that could be taken to improve farm decision making of farm women, which in turn can accelerate and stabilize planned change in rural society.
- iii. The knowledge of the findings of this research may also serve as a basis for future studies, who are interested in deeper analysis of decision making ability of farm women. The study will also provide the knowledge regarding the problems reported by farm women related to decision making, it would serve as guideline in modifying future development activities.
- iv. A clear picture of farm women in decision making process to them extension personnel would go a long way with respect to easy adoption of

innovation in agriculture as well as vegetable in a reasonable short span of time.

- v. Further, the findings of the present investigation will then give empirical evidence of the decision making process which can be subsequently utilized by the social scientists for undertaking more detailed investigation into its various ramification.

1.6 Assumptions of the Study

Leedy and Ormrod (2010) posited, “Assumptions are so basic that, without them, the research problem itself could not exist”. The researcher had considered the following assumptions while undertaking the study:

- i. The interviewees were capable of providing proper answers to the questions contained in the interview schedule.
- ii. Biasness was totally avoided at the time of data collection by the researcher and the responses were normally distributed.
- iii. The answered by the interviewees were valid, acceptable and reliable.
- iv. Responses sought by the researcher elicited the real situation and was the indicative of the whole population of the study area to meet the objectives of the study.
- v. The researcher was well adjusted to herself with the social adjoining of the study area. Hence, the responses from the interviewees were free from favoritism.
- vi. The selected characteristics and decision making ability of the rural women in vegetable production of the study were normally and independently allotted.

1.7 Limitations of the Study

Considering the usual problem of conveyance, time, physical facilities and co-operation of respondents as, any scientific investigation undertaken by a student in social science world face and to make the study manageable and meaningful, it became necessary to impose certain limitations as mentioned bellow:

- i. The study was confined to only one upazila namely Sadar upazila of Bagerhat district which may fail to represent the actual picture of the whole situation as people develop their strategies according to the concrete situation they face.
- ii. It is difficult to get exact information on decision making ability of rural women in vegetables production indicator from the rural women as many of them are illiterate.
- iii. Characteristics of the rural women were many and varied, but only thirteen characteristics were selected for the research study.
- iv. There were awkwardness situations at the data collection time. So, the researcher had to form proper rapport with the interviewees to collect accurate responses.
- v. Several scales, methods and statistical tests have been used in this study over a relatively short period of time.

1.8 Definition of Important Terms

Age: Age refers to the terms of actual years from their birth to the time of the interview, which was found on the basis of the verbal response of the interviewees.

Family size: Family size refers to the total family members including him/her, children and other dependents.

Area under vegetable production: Area under vegetable production of a rural woman refers to the total area of land on which carried out the vegetable production, the area being in terms of full benefit to the family.

Vegetable cultivation experience: Vegetable cultivation experience of the rural woman refers the total number of year involved in vegetable cultivation.

Annual family income: Annual family income refers to the last year annual gross income from different sources of her family.

Annual income from vegetable production: Annual income from vegetable production refers to the last year annual gross income from vegetable production of her family

Time spent in vegetable management: Time spent in vegetable management means the length of time spend by the rural women per day or per week.

Organizational participation: Organizational participation refers to the participation in different organizations by a rural woman.

Extension contact: Extension contact defines as one's extent of exposure to different communication media related to farming activities.

Knowledge on vegetable cultivation: Knowledge on vegetable cultivation refers to the knowledge on different production technologies regarding vegetable cultivation.

Decision making ability: It referred to the product of many small judgments and processed, organized and summarized.

Farm Activities: It included the activities, which were carried out by a farm family with regard to crop husbandry and allied activities.

CHAPTER II

REVIEW OF LITERTURE

Review of literature is a necessary step for any scientific study. This serves the following purposes: i) It shows the work previously done in the area of research. ii) It helps in delineating the area of research. Iii) It provides a theoretical framework for the purpose of study. iv) It suggests the measures of operational definition of the concepts. v) It provides the basic interpretation of findings to the study.

The available research findings have been presented under the following sub-heads:

2.1: Literature Related to Decision Making Process

2.2: Review Concerning Role of Farm Women in Decision Making Process in Vegetable Cultivation Practice

2.3: Reviews on Relationship between Selected Characteristics of Rural Women and their Decision Making

2.4: Constraints Faced by the Farm Women in Decision Making Process in Vegetable Cultivation

2.5: Conceptual Framework of the Study

2.1 Literature Related to Decision Making Process

Mishra *et. al.* (2010) revealed that rural women of Koylanchal participate in various practices of vegetable cultivation. In vegetable cultivation, women perform a variety of tasks both in cultivation as well as marketing. Practices related to vegetable cultivation have now been considered as a family enterprise in which husband and wife participate to share work and pleasure both. Thus, it is expected that all decisions related to practices of vegetable cultivation are also taken jointly.

Natarajan and Santha G. (2009) reported that involvement of tribals in tapioca [cassava] production could bring positive and sustainable changes, particularly

in taking the right decisions for improving agriculture. A total of 120 tribal [male] farmers and 120 farm women participated in the study and majority of the [male] farmers make most of the decisions in tapioca cultivation practices, compared to women.

Shendare *et. al.* (2007) found that women independently make decisions regarding calf rearing, and preparing and preserving milk products. However, decisions on feeding, selling of milk, housing and milking, were made by both men and women. Further, decisions on breeding practices, utilization of veterinary services, and purchase of animals were mostly made by men.

Praveena (2005) revealed that though rural farm women followed all the considered methods for decision making depending on the nature of farm activity, majority of rural women relied on joint decisions by consulting their spouse. However, the respondents were mostly self reliant in deciding few aspects like gap filling, storage and dairying. From the findings, it could be concluded that the farm women did not prefer to take self decisions especially in all the market related activities such as selection and procurement of seed materials, purchase/hiring of other agricultural inputs, disposal of the farm produce etc.

Varmani *et. al.* (2003) revealed that important household affairs are generally decided in consultation with spouse. Farm women have little to say about agricultural matters and employment of their own and members of the family.

Khare and Jaiswal (2001) studied role of farm women in decision making related to farm practices. In Indian economy, farm business has been a family enterprise in which both husband and wife participate evenly.

Ghosh and Singh (2001) stated that the decision making role of farm women seems to have changed considerably over the years mainly for two reasons: firstly the joint family system is breaking and secondly the introduction of modern agricultural technologies have resulted in higher income and a better

standard of living and has brought about change in outlook and altitude of rural people especially the women.

Ghosh (2000) found that there is an increasing evidence of women's participation in decision making activities. Outwardly decision making in the prerogative of the male head of the farm family, but any such decision taken is strongly influenced by the attitude and opinion of the female partners.

Mishra (2000) reported that among different agricultural activities selection of crop and cropped area, varieties, use of fertilizers and manure, purchase of agricultural implements and engagement of labor was absolutely decided by male. The involvement of female in these activities was quite low.

Over the years women emerge as not only good home makers but also individual decision makers in the farming. Many results indicate that women participation in the decision making is crucial in all agriculture activities.

2.2 Review Concerning Role of Farm Women in Decision Making Process in Vegetable Cultivation Practices

Gondaliya and Patel (2012) revealed that the practice wise participation of farm women in decision making process is an important factor for designing plan communication strategy to streamline farm women in agricultural development. The finding showed that majority of the farm women had medium level of participation in decision making process in areas such as land preparation, sowing practices, nutrient management, crop protection, irrigation, intercultural operations, harvesting and post harvest activities, marketing and policy decision. While, according to rank women contribution in decision making is maximum in case of sowing practices and least in case of irrigation

Thapa (2012) found that when more women become the members of the producers group, then there is increased participation of women in the decision making process of the producers groups. When women are able to influence the decisions of the group, women take-up market oriented production and start

participating in the marketing activity. The study has concluded that women's involvement in marketing can be increased by increasing women's participation in producers' groups and promoting market oriented production

Samdaria (2011) reported that the role of farm women in decision making process related to vegetable operation was concerned during the course of collection of data and it was observed that farm women indicated moderate role in decision making process.

Baba *et. al.* (2010) revealed that the role of women in majority of the cases was supportive in nature while men performed the dominant role in most of the cases. Provision of education and extension facilities are suggested to enhance women's participation in decision-making.

Warkade (2010) observed that majority of tribal farm women had always taken decision regarding selection of crop, quantity of seed, sowing time of seed, weeding, use of manures, harvesting, threshing and grain storage. They were rarely involved in decision making regarding field preparation, selection of variety, irrigation, seed treatment and marketing and use of fertilizers, plant protection measures as it required more scientific knowledge and skill.

Bishnoi and Singh (2007) reported that majority (61%) of the respondents had partially participated in decision making of food items such as planning, purchase and storage of materials whereas 32 per cent women did not participate and they were totally dependent upon the decisions taken by their husbands and head of the family.

Singh *et. al.* (2007) revealed that all the farm activities i.e. land preparation, transplanting, irrigation, application of manure and fertilizers, weeding, harvesting, marketing, management of revenue were independently performed by rural men in majority of the families and they were having complete responsibility of it. Women performed few farm activities like transplanting, weeding and harvesting jointly with men in 40.67%-60.78% households.

Mandloi (2006) revealed that 20.26 percent farm women had taken own decisions, while 54.82 percent of the rural women had consulted their spouse to take decisions regarding all the activities and 14 percent had consulted all their family members and friends to take decisions and 4.28 percent of rural women had never participated in decision making process.

Praveena (2005) revealed that though rural women followed all the considered methods for decision making depending on the nature of farm activity. Majority of rural women believed on joint decisions by consulting their spouse. However, the respondents were mostly self-reliant in deciding few aspects like gap filling, storage and dairying.

Kunwar (2004) revealed that husbands and wives together taken joint decision in farm related operations such as sowing, post sowing, and harvesting activities. However, wives were the key decision makers in household activities.

Goswami *et. al.* (2004) revealed that women were consulted by their husbands or men folk in determining the leasing in and leasing out of land, purchase and sale of farm machinery, selection of manures and fertilizers to be used, time of transplanting and marketing of livestock produce.

Dongre (2003) reported that decision making process was significantly associated with age, education, caste, family type, family size, land holding, farm power and material possession, whereas extension contact and social participation not effects the role of farm women in decision making related to management of farm and allied enterprise

Jyoti *et. al.* (2003) concluded that the farm women of Jammu district actively participated in the decision making process of various agriculture operations, though the extent of participation was 27 percent. In areas like sale of land, animals, farm produce and its storage, women's participation was 80 percent.

Rao (2003) found that decision making was associated with social prestigious men dominate, while decisions associated with responsibility and duties are left to women.

Varmani *et. al.* (2003) reported that higher involvement of women in decision making related to household affairs as compared to agricultural activities.

Wakle *et al.* (2003) found that farm related decisions were taken independently by male (1st rank), while independent female decisions were negligible, joint participation with female members was maximum in case of weeding (59.70%), joint participation with male members was maximum in case of application of manures and fertilizers (34.90%). Negligible independent participation of rural women was noticed for seed selection (1.7%) and seed treatment (1.1%).

Amin *et. al.* (2003) revealed that women's contribution was found higher than men in livestock and poultry rearing and also in homestead vegetable production. Women dominate all kinds of homestead farm activities as well as some part of field crop production activities. Women's participation was recorded in field crop production (23%), homestead vegetable cultivation (59%), plantation of fruit and forest trees (16%), livestock and poultry rearing (63%) and fish culture (8%). In decision-making regarding farm activities, women's participation was found 48 percent. As a whole, 34 percent work related to agricultural production was done by the female members of the family and the rest 66 percent work done by the male members. Women's participation in farm activities decreases with the increase in farm size.

Deka and Saikai (2002). revealed that background profile of women show that more than half were of lower middle age, married and engaged in farming but had a low socioeconomic status. In farming activities, joint participation with male was highest followed by independent participation, whereas joint participation with family dominated the picture in postharvest activities. Joint

decision making was common followed by independent decision making by the female. Comparing the data with the national and state level situation, it was found that independent and joint participation in postharvest activities was highest in the hill zone, and the same was lowest at the national level. In decision making, joint decision was highest in both the hill zone and the state whereas independent male decision ranked first at the national level.

Khare and Jaiswal (2001) concluded that majority of respondents had strong desire for change in use of fertilizers and getting initial information about plant protection measures and majority of the farm women take final decision regarding seed selection.

Tandon *et. al.* (2001) concluded that large majority of women were involved in all agricultural operations for food grain as well as vegetable crops production, except in some sub-activities in the case of land preparation and marketing. However, level of participation was different for sub-activities of different agriculture practices.

2.3 Reviews on Relationship between Selected Characteristics of Rural Women and their Decision Making

Very few studies were been found to be specifically undertaken in a scientific way in the direction of the recent study. An effort has been made in subsequent subsection to review some interlinked literature in this aspect.

2.3.1 Age and decision making

Samdaria (2011) found that age of farm women had shown significant association with role in decision making.

Warkade (2010) found that there was significant association between age of the respondents and decision making process.

Sharma (2008) found that age of farm women had highly significant in the decision making process.

Khare and Khare (2007) found that age of farm women had shown significant difference in the decision making behaviour for agriculture practices.

Rizwana *et. al.* (2006) observed that age of farm women has got negative impact on the decision making of farm women.

Asaduzzaman (2003) found no significant relationship between age of rural women and their decision-making ability.

Biswas (2003) found that age of the rural women had a significant but negative relationship with their accessibility to family decision-making process.

Kumari A. (2002) observed that age of farm women were not found to be exerting influence on the role of women in monetary decision making.

Begum *et. al.* (2000) in their study found that there was no significant effect of age of women on their taking household decisions.

Mohad (2000) observed that relationship between the age of farm women and their role in decision was non significant.

Akter (2000) in a study found a positive significant relationship between age of the women and their participation in decision-making role in the family.

Kumari (1999) in a study found that age of rural women had significant relationship with their performance in farm decision-making.

2.3.2 Education and decision making

Warkade (2010) found that there was no significant association between education level of tribal farm women and their role in decision making process.

Sharma (2008) reported that the association between education and participation in agriculture operation was found highly significant in decision making process.

Khare and Khare (2007) found that education has shown significant differences in the decision making behaviour for agricultural practices.

Rizwana *et. al.* (2006) reported that education of the farm women were having effect on the decision making of farm women in case of agricultural activities.

Kumari A. (2002) found that education of rural women had positive and significant relation with monetary decision making.

2.3.3 Family size and decision making

Warkade (2010) found that there was non significant association between family size and size of tribal farm women and their role in decision making process.

Sharma (2008) reported that the association between size of family and participation in agriculture operation was found highly significant in decision making process.

Khare and Khare (2007) reported that family size had shown significant differences in decision making behavior of agriculture practices.

Rizwana *et. al.* (2006) observed that family size had significant effect on decision making of farm women in case of agricultural activities.

Asaduzzaman (2003) found no significant relation between family size of rural women and their decision making ability.

Kumari A. (2002) found that family size of the respondents had nonsignificant relationship with women's monetary decision making.

2.3.4 Area under vegetable production and decision making

Kumari A. (2012) found that size of farm size had significant relations with decision making process.

Warkade (2010) found that there was non significant association between farm size of tribal farm women and their role in decision making process.

Sharma (2008) reported that the association between farm size and participation in agriculture operation was found highly significant in decision making process.

Rizwana *et. al.* (2006) observed that farm size had significant negative influence on the decision making in agricultural activities

2.3.5 Annual family income and decision making

Mohad (2000) observed that the relationship between annual income of respondent farm women and their role in farm decision making was non significant.

Samdaria (2011) found that annual income of farm women had shown non significant association with their role in decision making process.

Warkade (2010) found that there was non significant association between annual income of the tribal farm women and decision making process.

Sharma (2008) reported that the association between annual income and participation in agriculture operation was found highly significant indecision making process.

Asaduzzaman (2003) found significant relationship between annual income of rural women and their decision-making ability.

Biswas (2003) found that income of the rural women had no significant relationship with their accessibility to family decision-making process.

2.3.6 Organizational participation and decision making

Kumari A. (2012) observed that organizational participation of respondent farm women had significant association with decision making process.

Warkade (2010) found that there was non significant association between organizational participation of tribal farm women and their role in decision making process.

Sharma (2008) reported that the association between organizational participation and participation in agriculture operation was found highly significant in decision making process.

Dongre (2003) observed that organizational participation of farm women had no bearing role in decision making process.

Patki and Nikhade (2000) found that the lower caste illiterate women had low organizational participation.

2.3.7 Extension contact and decision making

Kumari A. (2012) concluded that extension contact of farm women had positive and significant relationship with monetary decision making.

Samdaria (2011) reported that extension contact of farm women had found significant association with their role in decision making process.

Warkade (2010) found that there was non significant association between extension contact tribal of farm women and their role in decision making process.

Sharma (2008) reported that the association between extension contact and participation in agriculture operation was found highly significant in decision making process.

Rizwana *et al.* (2006) reported that contact with extension agencies had positive and significant effect on decision making process.

Dongre (2003) reported that decision making process was significantly associated with extension contact and social participation not effects the role of farm women in decision making related to management of farm and allied enterprises.

2.3.8 Training exposure and decision making

Rahman (2007) stated that agricultural training of the rural women had positive significant relationship with their participation in homestead agricultural activities.

Asaduzzaman (2003) found significant relationship between training exposure of rural women and their decision-making ability.

Islam (2003) in his study indicated that training had very strong significant association with their knowledge on vegetable production.

Parvin (1993) found that there was a positive relationship between training of the women and involvement with homestead cultivation. Training increases knowledge and develop awareness of respondent.

2.3.9 Knowledge on vegetable cultivation and decision making

Tazkira (2009) revealed in her study that knowledge about homestead farming had significant and positive relationship with their extent of involvement of the rural women in homestead agricultural activities.

Rahman (2007) indicated in his study that knowledge on homestead agricultural activities of rural women had positive significant relationship with their participation in homestead agricultural activities. And Nahar (2000) showed similar findings in their respective studies.

Salahuddin (2003) in his study found that knowledge of the rural women had no significant relationship with their involvement in homestead vegetable production.

Akhter (2000) in his study found that agricultural knowledge of the women had significant positive relationship with their participation in decision working role in the family with regard to development activities.

2.3.10 Other selected characteristics of rural women and decision making

No literature was found related to relationship of each of Vegetable cultivation experience 'Benefit Cost Ratio (BCR)', Attitude towards vegetable cultivation Time spent in vegetable management with decision making ability in vegetables production

2.4 Constraints Faced by the Farm Women in Decision Making Process in Vegetable Cultivation

Adedayo and Tunde (2013) found that lack of credit facilities as one of the most important challenges militating against increased production by women. Other challenges identified include restricted accessibility to land and lack of farm input among others. Appropriate recommendations were made that production resources should be made available especially for women farmers while women should also be part of decision making concerning agriculture.

Samdaria (2011) revealed that the respondents such as male dominance, no activities, lack of information about the solution to problem, lack of knowledge, higher time consumption for household work, inability to take decision, family norms, lack of proper guidance for taking decision, high cost of farm material, lack of marketing facilities, no permission to take decision due to younger age are the major constraint.

Shendare *et. al* (2007) found that constraints faced by rural women were categorized into four, viz., economic, supplies, marketing and other problems. Majority of the rural women experienced inadequate financial support, high cost of milking operation, high loan interest, and high cost of construction, concentrated feeds and treatment of sick animals. Moreover, most of the rural women expressed satisfaction on this farming activity as source of additional

family income. The degree of their satisfaction depends on returns from this activity. knowledge about improved technology, lack of education, poor economic status of the family, no management of time for farm and home

Praveena (2005) revealed that through rural farm women followed all the considered method for decision making depending on the nature of farm activity, majority of rural farm women belied on joint decision by consulting their spouse. However, the respondent were mostly self reliant in deciding few aspect like gap filling, storage and dairying. From the findings it could be concluded that the farm women did not prefer to take self decisions especially in all the market related activities such as selection and procurement of seed material, purchase selling of other agriculture inputs and disposal of farm produce.

Dongre (2003) concluded that male dominance, lack of contact with extension workers, lack of pertinent knowledge about new innovation performing dual responsibility at home and farm, scattered land holding, negative social attitude, low literacy level are the major constraint.

Premavathi and Seetharaman (2002) revealed that high cost and nonavailability of labour, illiteracy, inadequate income and lack of confidence as major constraint.

Sarada and Rao (2000) concluded that variation in extent of perception of drudgery in farm and home activities could be observed in case of tribal women. In activities like hand weeding (100%) and transplanting was expressed as major constraints by tribal women. In house activities, major problems were fetching of water and collection fuel (100%), followed by borrowing and repaying of loans (67.5%) and plastering (60.80%), food preparation (44.10%) and care of animal (2.50%), respectively.

2.5 Conceptual Framework of the Study

In scientific research, selection and measurement of variables constitute an important task. This study was concerned with the ‘decision making ability of rural women in vegetables production’. Thus, the decision making ability of rural women in vegetables production was the main focus and 13 selected characteristics of the rural women were considered as the causal variables to the study. Decision making ability of rural women in vegetables production may be affected through interacting forces of these causal variables. It is not possible to deal with all the causal variables in a single study. It was therefore, necessary to limit the causal variables, which age, education, family size, farm size under vegetable production, vegetable cultivation experience, annual family income, benefit cost ratio (BCR), attitude towards vegetable cultivation, time spent in vegetable management , organizational participation, extension contact, training exposure, knowledge on vegetable cultivation for this study. Considering the above mentioned discussion, a conceptual framework has been developed for this study, which is diagrammatically presented in the following Figure 2.1.

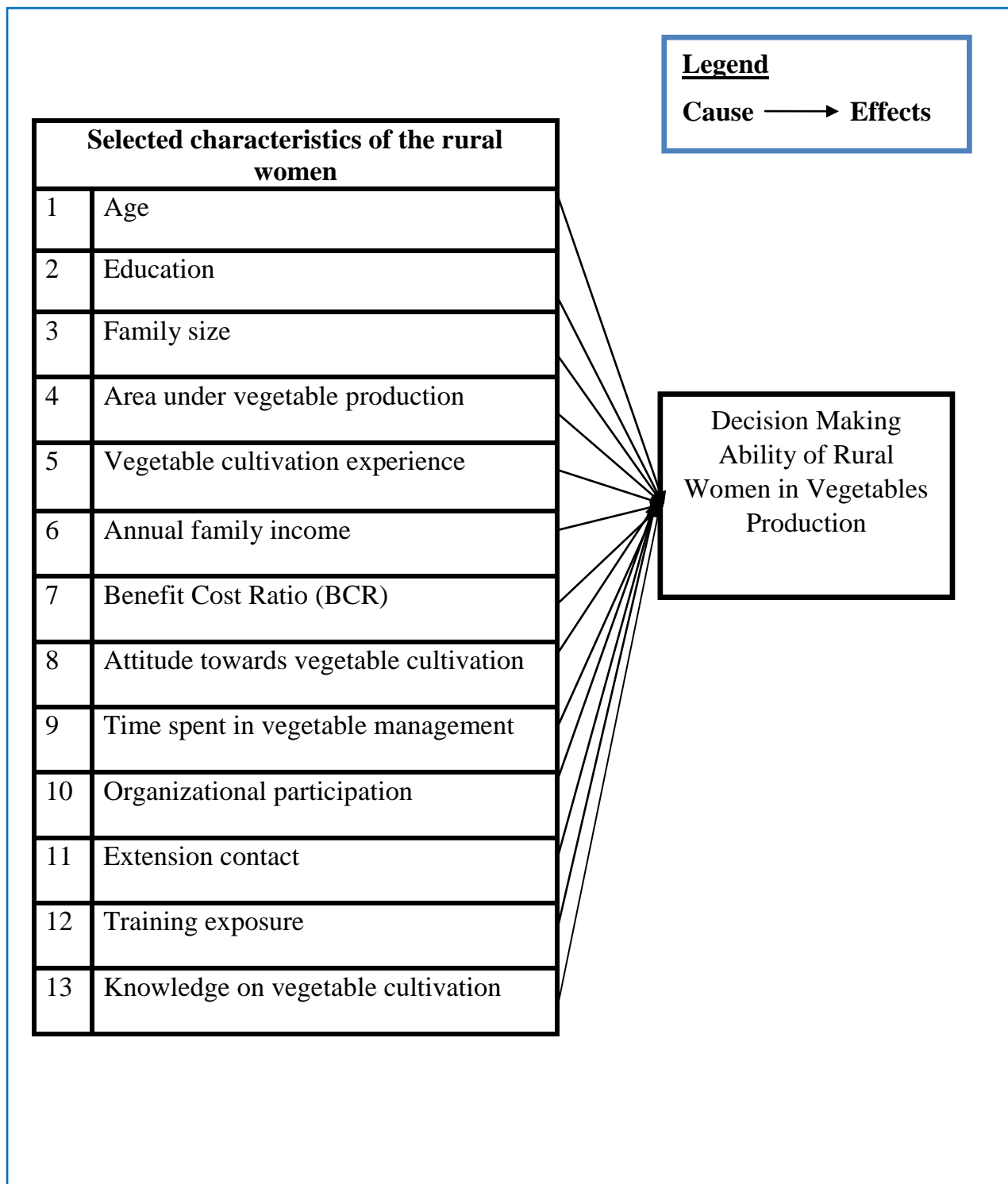


Figure 2.1 The conceptual framework of the study

CHAPTER III

MATERIALS AND METHODS

This chapter of the thesis represents the research methods and procedures used to collect and analyze the data for answering the research questions and attaining the purposes of the study. The different steps and the details under each step are explained in the succeeding part of the chapter. A description of the methods followed in conducting this research work has been presented below:

3.1 Locale of the study

Bagerhat district is divided into 9 upazilas, 77 union parishads, 1031 villages, 687 mouzas, 3 municipalities, 27 wards and 56 mahallas (Wikipedia, 2017). The present study was conducted in the Bagerhat sadar upazilla Bagerhat district. The area of Bagerhat sadar upazila (Bagerhat district) is 316.97 sq km, located in between 22°35' and 22°50' north latitudes and in between 89°38' and 89°53' east longitudes. It is bounded by Fakirhat and Chitalmari upazilas on the north, Rampal and Morrelganj upazillas on the south, Kachua (Bagerhat) upazilla on the east, Fakirhat and Rampal upazilas on the west. Mainly considering the abundance of vegetable production, five (5) villages named Utkul, Raghunathpur, Pachali, Khalshi, Kaitpara of Jatrapur union as well as Utkul block under Bagerhat sadar Upazila of Bagerhat District was purposively selected as locale of the study.

A map of the Bagerhat district has been presented in Figure 3.1. showing the Bagerhat Sadar upazilla and a map of Bagerhat Sadar upazilla showing the study area have also shown in Figure 3.2.

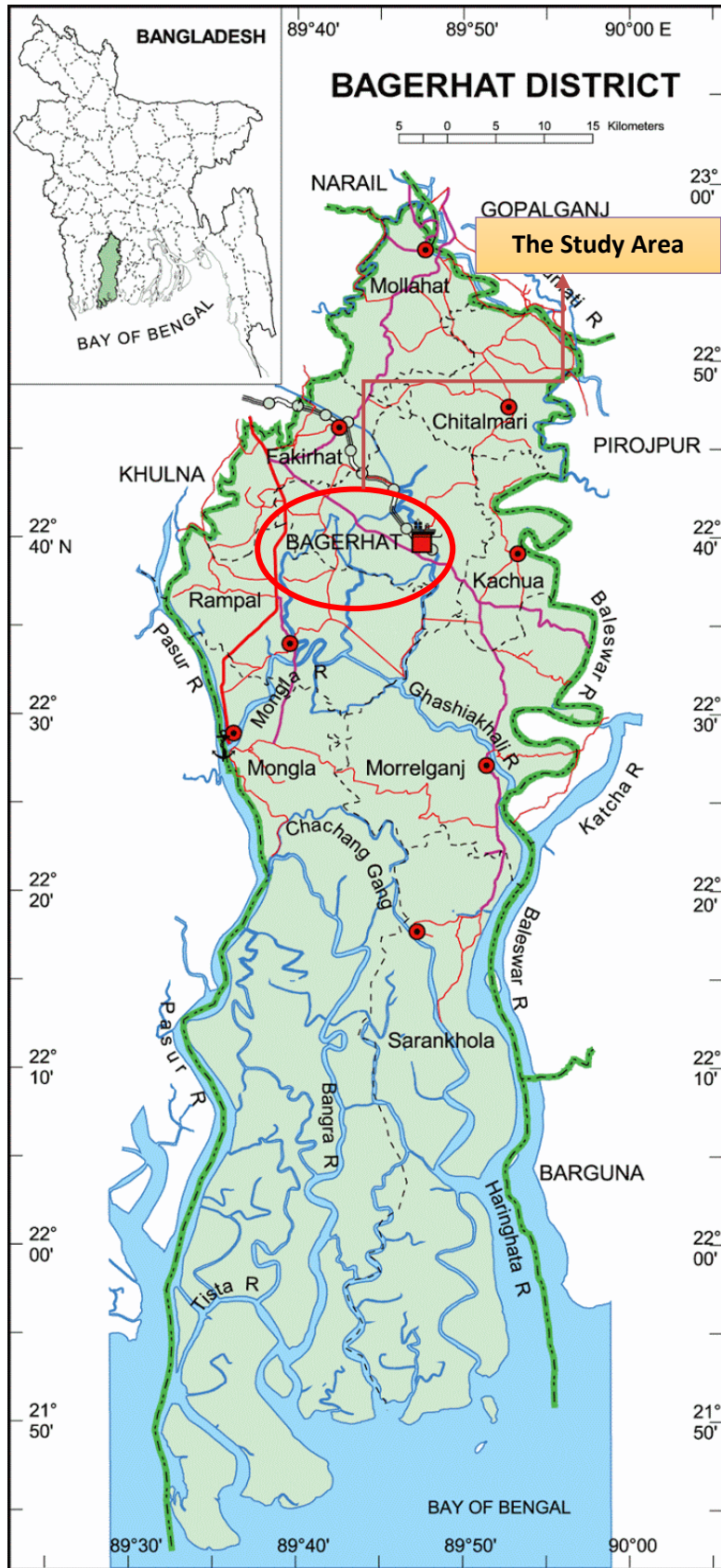


Figure 3.1 Map of Bagerhat district showing the study area(Bagerhat Sadar upazilla)



Figure 3.2 Map of Bagerhat Sadar upazilla showing Jatrapur union

3.2 Population of the Study

Permanent resident rural women engage with vegetable production in the selected villages constituted the population of this study. One woman who engaged with vegetable production from each of the farm families was considered as the respondent. Updated lists of all farm families of the selected villages were prepared with the help of SAAO, ideal farmers and local leaders. These farm families constituted the population of this study. Thus the total number of women engaged in vegetable cultivation in the selected 5 villages was 580 which was considered as the population of the study.

3.2.1. Determination of sample size

The population size was 580. As the size was small, so it was better to follow a representative percentage rather than standard statistical formula to determine the sample size. Considering time and other resources, twenty percent (20%) of population was considered as sample of the study. Thus the sample size was 116.

3.2.2 Distribution of the population, sample size and reserve list

Proportionate random sampling technique was used to determine the sample from each village. A reserve list of 12 respondents (about ten percent of the sample size) was also prepared so that the rural woman of this list could be used for interview if the rural women included in the original sample were not available at the time of interview. The distribution of the population, the number of sample size and number of respondents along with the reserve list are given in Table 3.1.

Table 3.1 Distribution of the population, sample size and reserve list

Selected upazila	Selected union	Selected villages	Population	Sample size	Reserve list
Bagerhat Sadar	Jatrapur	Utkul	180	36	4
		Raghunathpur	90	18	2
		Pachali	110	22	2
		Khalshi	130	26	3
		Kaitpara	70	14	1
Total			580	116	12

3.3 Design of the Study

3.3.1 Data collecting instruments

In order to collect valid and reliable data from the respondent women, an interview schedule (questionnaire) in English version was designed keeping the objectives in mind. The English version of interview schedule has been enclosed in appendix-I.

Simple and direct questions and different scales were used to obtain information. Both open and closed form questionnaire was designed to obtain information relating. The interview schedule was pre-tested with 15 sample respondents from the study area. Questions were asked systematically and explanations were made whenever it was necessary. The respondents were interviewed at their leisure time by using local language to the extent possible so that they can give accurate information in a cool brain.

3.3.2 Procedure of data collection

The researcher collected data through personal interview schedule from the sampled farm families of the selected villages. The researcher met the respective Upazilla Agriculture Officer (UAO), Agriculture Extension Officer (AEO) and the concerned SAAOs before starting collection of data. The researcher also discussed the objectives of the present study with the

respondents and above mentioned officers and requested them to provide actual information. A rapport was established with the respondents so that they feel easy to answer the questions. The researcher took all possible care to establish rapport with the respondents so that they would not feel any indecision while starting the interview. Very good cooperation was obtained from the field extension workers and the local leaders. No serious difficulty was faced by the researcher during the collection of data. Interviews were made individually in the houses of respondents. Questions were asked in different ways so that the respondents could easily understand the questions. Whenever a respondent faced difficulty in understanding any questions, care was taken to explain the same clearly with a view to enabling him to answer it properly.

Before going to the respondent's home for interviewing they were informed verbally to ensure their availability at home as per schedule date and time. In case of failure to collect information from the respondents due to their other business, revisit was made with prior to appointments. If any respondent failed to understand any question, the researcher took great care to explain the issue. If the respondents could not clear about what was wanted to know then supplementary questions were asked for further clarification. The researcher received full cooperation from the respondents during the time of interview. Data were collected from 4 April, 2017 to 3 May, 2017.

3.4 Variables and Their Measurement Techniques

The variable is a characteristic, which can assume varying, or different values in successive individual cases. Measurable characteristics of a population that may vary from element to element either in magnitude or in quality are called variables (Ahmed *et al.*, 2004). The success of a research to a considerable extent depends on the exact selection of the variables. A research work usually contains at least two important variables viz. causal and dependent variables. An causal variable is that factor which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. A dependent variable is that factor which appears, disappears or varies as the researcher

introduces, removes or varies the causal variable (Townsend, 1953). In the scientific research, the selection and measurement of variable constitute a significant task. Following this conception, the researcher reviewed literature to widen this understanding about the natures and scopes of the variables relevant to this research. At last the researcher had selected 13 causal variables and one dependent variable. The causal variables were: age, education, family size, area under vegetable production, vegetable cultivation experience, annual family income, benefit cost ratio (BCR) , attitude towards vegetable cultivation, time spent in vegetable management, organizational participation, extension contact, training exposure and knowledge on vegetable cultivation. The dependent variable of this study was the ‘decision making ability of rural women in vegetables production’.

The methods and procedures in measuring the variables of this study are presented below:

3.4.1 Measurement of causal variables

The 13 selected characteristics of the respondents mentioned above constitute the causal variables of this study. The following methods were followed for measuring the causal variables.

3.4.1.1 Age

Age of the respondent was measured in terms of actual years from their birth to the time of the interview, which was found on the basis of the verbal response of the rural people. A score of one (1) was assigned for each year of one’s age. This variable appears in item number 1 in the interview schedule as presented in Appendix-I.

3.4.1.2 Education

Education was measured by assigning score against successful years of schooling by a respondent. One score was given for passing each level in an educational institution. For example, if a respondent passed the final examination of class five or equivalent examination, his/her education score

has given five (5). Each respondents of can't read & write has given a score of zero (0). A person not knowing reading or writing but being able to sign only has given a score of 0.5. If a respondent did not go to school but took non-formal education, his/her educational status was determined as the equivalent to a formal school student. This variable appears in item number 2 in the interview schedule as presented in Appendix-I.

3.4.1.3 Family size

The family size of a respondent was measured by the total number of her family members including herself, her husband, children and other dependents eating and staying together. This variable has been shown in the question no. 3 of the interview schedule.

3.4.1.4 Area under vegetable production

It refers to the area of land owned by a respondent on which vegetable growing activities are carried out. However, it was estimated in terms of hectare(ha). Data obtained in response to questions under item number 4 in the interview schedule (Appendix-I) formed the basis for determining vegetable production area of the respondent.

3.4.1.5 Vegetable cultivation experience

Vegetable cultivation experience of a respondent was determined by the total number of year involved in vegetable cultivation. A score of one (1) was assigned for each year vegetable cultivation. This variable appears in item number 5 in the interview schedule as presented in Appendix-I.

3.4.1.6 Annual family income

Annual family income of a respondent was measured on the basis of total yearly earning from agriculture and other sources (service, business, daily labor etc.) by the respondent herself and other family members. For calculation of income score, one (1) score was assigned for each one thousand taka ('000 BDT)(question no. 6 of the interview schedule).

3.4.1.7 Benefit Cost Ratio (BCR)

Benefit Cost Ratio (BCR) was calculated by dividing the total income from vegetable cultivation by the total cost of vegetable cultivation. This variable appears in item number 7 in the interview schedule as presented in Appendix-I.

3.4.1.8 Attitude towards vegetable cultivation

Attitude towards vegetable cultivation of a respondent implies to her beliefs, outlook, perception and action tendencies. To determine this criterion, a number of 12 statements (6 positive and 6 negative) were randomly presented before the interviewees. A five-point scale was used to measure the attitude of the beneficiaries. This scoring was done in the following manner: For positive statements a score of 4, 3, 2, 1 and 0 was given for responses strongly agree, agree, neutral, disagree and strongly disagree respectively. For negative statement, the opposite process was followed. All the scores for positive and negative statements were summed up and the final score was determined. The range of final score is zero (0) to forty eight (48) where zero (0) indicate poor attitude and forty eight (48) indicate highest or favorable attitude of the rural women towards vegetable cultivation. This variable appears in item number eight (8) in the interview schedule as presented in Appendix-I.

3.4.1.9 Time spent in vegetable management

Time spent in vegetable management was determined by the total time (hrs) involved in vegetable management per week during the vegetable production. A score of one (1) was assigned for each hour vegetable management activities. This variable appears in item number 9 in the interview schedule as presented in Appendix-I.

3.4.1.10 Organizational participation

Organizational participation of a respondent was computed on the basis of her participation in different organizations. This variable appears in item number

ten (10) in the interview schedule as presented in Appendix-I. Scoring of the organizational participation was done by using the following scoring system:

Nature of participation	Score assigned
No participation	0
Participation as ordinary member for 1 year	1
Participation as executive member for 1 year	2
Participation as secretary/ president for 1 year	3

Thus organization participation score of a respondent was determined by adding the score obtained from all the 6 selected organizations.

3.4.1.11 Extension contact

It was defined as one's extent of exposure to different communication media related to farming activities. Extension contact of a respondent was measured by computing extension contact score on the basis of their nature of contact with eight extension media. Each respondent was asked to indicate her nature of contact with five alternative responses, like regularly, frequently, sometimes, rarely and not at all basis to each of the eight media and score of four, three, two, one and zero were assigned for those alternative responses respectively. These five options for each medium were defined specially to each medium considering the situation, rationality and result of pre-test. Logical frequencies were assigned for each of the five-alternative nature of contact. Extension contact of a respondent was measured by adding the scores of eight selected source of information. Thus, extension contact score of a respondent could range from 0 to 32, where zero indicated no extension contact and 32 indicated highest level of extension contact. This variable appears in item number eleven (11) in the interview schedule as presented in Appendix-I.

3.4.1.12 Training exposure

Training exposure of a vegetable cultivation was determined by the total number of day when he attended in different training programs in her life regarding vegetable cultivation. A score of one (1) was assigned for each day of training attended. This variable appears in item number twelve (12) in the interview schedule as presented in Appendix-I.

3.4.1.13 Knowledge on vegetable cultivation

Vegetable cultivation knowledge of a respondent was measured by asking 15 questions related to different components of vegetable cultivation. It was measured assigning weightage two to four marks depending on question. So, the total assigned scores for all the questions became forty. The score was given according to response at the time of interview. Answering a question correctly an individual could obtain full score. While for wrong answer or no answer he obtained zero (0) score. Partial score was assigned for partially correct answer. Thus, the vegetable cultivation knowledge score of a respondents could range from zero (0) to forty (40), where zero indicates low knowledge and forty indicates highest knowledge on vegetable cultivation. This variable appears in item number thirteen (13) in the interview schedule as presented in Appendix-I.

3.4.2 Measurement of Decision Making Ability

The extent of decision making ability of rural women in vegetables production It was defined as one's extent of exposure of decision making ability of rural women in vegetables production. The extent of decision making ability in vegetables production of a respondent was measured by computing decision making ability score on the basis of their nature of selected twenty items regarding vegetable production. Each respondent was asked to indicate her nature of decision making ability with five alternative responses, decision made by herself, decision made by consultation with husband, decision made by consultation by family members, decision made by others and no ability to make decision to each of the twenty selected items regarding vegetable

production and score of 4, 3, 2, 1 and 0 were assigned for those alternative responses, respectively. Thus, the extent of decision making ability in vegetables production score of a respondents could range from 0 to 80, where zero indicated no decision making ability in vegetables production and eighty indicated highest level of decision making ability in vegetables production. This variable appears in item number 14 in the interview schedule as presented in Appendix-I.

3.5 Constraints faced by rural women in decision making

Constraints faced by rural women in decision making were measured on the basis of extent of constraints faced by the respondent on different aspects of vegetable production. The following scores were assigned against each of the constraints:

Extent of constraints	Score
Very High constraint	4
High constraint	3
Moderate constraint	2
Little constraint	1
No constraint	0

Constraints in decision making of a respondent were measured by asking her 12 questions related to different components of decision making constraints regarding vegetable production. Thus, Constraints faced by rural women in decision making score could range from 0 to 48 where 0 indicated very low constraint and 48 indicated very high constraint faced in decision making during vegetable production. This variable appears in item number fifteen (15) in the interview schedule as presented in Appendix-I.

3.6 Hypothesis of the Study

According to Kerlinger (1973) a hypothesis is a conjectural statement of the relation between two or more variables. Hypothesis are always in declarative

sentence form and they are related, either generally or specifically from variables to variables. In broad sense hypotheses are divided into two categories: (a) Research hypothesis and (b) Null hypothesis.

3.6.1 Research hypothesis

Based on review of literature and development of conceptual framework, the following research hypothesis was formulated:

“Each of the 13 selected characteristics of the respondents has significant relationship with their decision making ability in vegetables production.”

3.6.2 Null hypothesis

A null hypothesis states that there is no relationship between the concerned variables. The following null hypothesis was formulated to explore the relationship of the selected characteristics with their use of media in receiving information. Hence, in order to conduct tests, the earlier research hypothesis was converted into null form as follows:

“There is no relationship of the selected characteristics of respondents with their decision making ability in vegetables production.”

3.7 Compilation of Data

After completion of field survey data recorded in the interview schedules were coded, compiled, tabulated and analyzed in accordance with the objectives of the study. In this process, all the responses in the interview schedule were given numerical coded values. All the collected data were checked and cross checked before transplanting to the Microsoft Excel. All collected data were carefully entered in Microsoft Excel. After exporting, errors were detected and necessary corrections were made accordingly. At last, data were exported from the program Microsoft Excel to SPSS version 20.0, which offered statistical tools applied to social sciences.

3.8 Statistical Analysis

Both descriptive and analytical methods were utilized in order to analyze the data. Descriptive techniques have been used to represent current circumstances, depict wide range of variables separately and construct tables presented in results. These included: frequency distribution, percentage, range, mean and standard deviation.

Analytical techniques have been utilized to investigate the relationship of the selected characteristics of the respondents with their decision making ability in vegetables production. Pearson's Product Moment Coefficient of Correlation (r) was used in order to explore the relationships between each of the selected characteristics of the respondents and their decision making ability in vegetables production. Five percent (0.05) level of probability was the basis for rejecting any null hypothesis throughout the study. The SPSS computer package version 20.0 was used to perform all these process.

CHAPTER IV

RESULTS AND DISCUSSION

The recorded observations in accordance with the objective of the study were presented and probable discussion of the findings was made with probable justifiable and relevant interpretation in this chapter. The findings of the study and their interpretation have been presented in four sections according to the objective of the study. The first section deals with the selected characteristics of the women, while the second section deals with the decision making ability of rural women in vegetables production. The third section deals with the relationship of each of the women' selected characteristics with their decision making ability in vegetables production, while the fourth section deals with the constraints faced by rural women in decision making.

4.1 Characteristics of the women

Behavior of an individual is determined to a large extent by one's personal characteristics. There were various characteristics of the rural women that might have consequence to face the decision making ability in vegetables production. But in this study, thirteen characteristics of them were selected as independent variables, which included their age, education, family size, farm size under vegetable production, vegetable cultivation experience, annual family income, benefit cost ratio (BCR), attitude towards vegetable cultivation, time spent in vegetable management, organizational participation, extension contact, training exposure and knowledge on vegetable cultivation that might be greatly influenced the decision making ability of rural women in vegetables production. The salient features of these characteristics of the rural women are presented below:

4.1.1 Age

The age of the women varied from 23 to 53 years with a mean and standard deviation of 32.88 and 7.76 respectively. Considering the recorded age the women were classified into three categories namely 'young', 'middle aged' and

‘old aged’ following the age category of MoYS (2012). The distributions of the women in accordance of their age are presented in Table 4.1.

Table 4.1 Distribution of the rural women according to their age

Category	Basis of categorization (years)	Observed range (years)	Women		Mean	SD
			Number	Percent		
Young aged	≤ 35	23-53	69	59.5	32.88	7.76
Middle aged	36-50		39	33.6		
Old aged	> 50		8	6.9		
Total			116	100		

Table 4.1 reveals that the young aged women comprised the highest proportion (59.5 %) followed by middle aged category (33.6 %) and the lowest proportion were made by the old aged category (6.9 %). Data also indicates that the young and middle aged category constitute almost 93.1 % of total women. Therefore, it could be said that most of the women vegetables growers in the study area are young to middle aged.

4.1.2 Education

The educational scores of the women ranged from 0 to 12 with a mean and standard deviation of 4.55 and 3.03 respectively. Based on the educational scores, the women were classified into five categories. The distributions of women according to their level of education are presented in Table 4.2.

Table 4.2 Distribution of rural women according to their education

Category	Basis of categorization (score)	Observed range (score)	Women		Mean	SD
			Number	Percent		
Can't read and write	0	0-12	3	2.6	4.55	3.03
Can sign only	0.5		10	8.6		
Primary education	1-5		61	52.6		
Secondary education	6-10		36	31.0		
Above secondary	>10		6	5.2		
Total			116	100		

Table 4.2 shows that women under primary education category constitute the highest proportion (52.6 %) followed by secondary education (31.0 %). On the other hand, the lowest 2.6 percent in can't read and sign category. In the study area education of the women vegetable farmer was satisfactory which was above the national average (63 percent) on Bangladesh (BBS, 2012).

4.1.3 Family size

Family size of the women ranged from 3 to 8 with the mean and standard deviation of 4.99 and 1.23 respectively. According to family size the women were classified into three categories viz. 'small', 'medium' and 'large' family. The distribution of the vegetable women according to their family size is presented in Table 4.3.

Table 4.3 Distribution of the rural women according to their family size

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean	SD
			Number	Percent		
Small family	≤ 3 ($\bar{x}-1SD$)	3-8	45	38.8	4.99	1.23
Medium family	4-6 ($\bar{x}\pm 1SD$)		56	48.3		
Large family	> 6 ($\bar{x}+1SD$)		15	12.9		
Total			116	100.0		

Table 4.3 indicates that the medium size family constitute the highest proportion (48.3 %) followed by the small size family (38.8 %). Only 12.9 percent women had large family size. Such finding is quite normal as per the situation of Bangladesh.

4.1.4 Area under vegetable production

The area under vegetable production of the women ranged from 0.18 ha to 0.87 ha with a mean and standard deviation of 0.43 and 0.15 respectively. Based on their area under vegetable production, the women were classified into three

categories namely ‘small’, ‘medium’ and ‘high’ area under vegetable production. The distribution of the rural women according to their area under vegetable production is presented in Table 4.4.

Table 4.4 Distribution of rural women according to their area under vegetable production

Category	Basis of categorization (ha)	Observed range (ha)	Women		Mean	SD
			Number	Percent		
Small area	≤ 0.28 ($\bar{x}-1SD$)	0.18-0.87 (ha)	18	15.5	0.43	0.15
Medium area	0.29-0.58 ($\bar{x}\pm 1SD$)		60	51.7		
Large area	> 0.58 ($\bar{x}+1SD$)		38	32.8		
Total			116	100		

Table 4.4 indicates that the medium area under vegetable production constituted the highest proportion (57.6 %) followed by large area under vegetable production (32.8 %), whereas the lowest 15.5 percent women had large area under vegetable production. Data also shows that overwhelming majority (84.50%) of the rural women had medium to large area under vegetable production.

4.1.5 Vegetable cultivation experience

Score of vegetable cultivation experience of women ranged from 3 to 25 with the mean and standard deviation of 9.66 and 5.25 respectively. There were three categories on the basis of vegetable cultivation experience and their distribution is given below:

Table 4.5 Distribution of the rural women according to their vegetable Cultivation experience

Category	Basis of categorization (year)	Observed range (year)	Women		Mean	SD
			Number	Percent		
Low experience	≤ 8	3-25	60	51.7	9.66	5.25
Medium experience	9-16		45	38.8		
High experience	>16		11	9.5		
Total			116	100		

Table 4.5 reveals that the majority (51.7 %) of the women fell in low experience in vegetable cultivation category, whereas the lowest 9.5 percent in high experience and 38.8 percent in medium experience in vegetable cultivation category. The findings of the study reveal that above 90.5 percent of the women in the study area had low to medium experience in vegetable cultivation.

4.1.6 Annual family income

The score of annual family income of the women ranged from 68 to 290 thousand (BDT) with a mean and standard deviation of 134.22 and 51.65, respectively. On the basis of annual family income, the women were classified into three categories as presented in Table 4.5.

Table 4.6 Distribution of the rural women according to their annual family income

Category	Basis of categorization ('000' BDT)	Observed range ('000' BDT)	Women		Mean	SD
			Number	Percent		
Low income	≤ 100	68-290	35	30.2	134.22	51.65
Medium income	101-200		70	60.3		
High income	>200		11	9.5		
Total			116	100.00		

Data reveals that the women having medium annual income constituted the highest proportion (60.3 %), while 30.2 percent had low income and lowest proportionate (9.5 %) had high income. It was indicating that vegetable cultivation is practiced by the women farmers having comparatively low to medium economic condition (90.5%). Although they have good amount of area under vegetable production and vegetable farming experience as well. But their annual family income is not in good condition. High production cost and low market value of vegetable are the reason for this condition.

4.1.7 Benefit Cost Ratio (BCR)

Benefit Cost Ratio (BCR) of vegetable cultivation score of the women ranged from 1.18 to 3.36 with a mean and standard deviation of 2.32 and 0.41 respectively. Based on the benefit cost ratio (BCR) score, the women were classified into three categories namely 'low', 'medium' and 'high' benefit cost ratio (BCR). The distribution of the women according to their benefit cost ratio (BCR) of vegetable cultivation is presented in Table 4.7.

Table 4.7 Distribution of rural women according to their benefit cost ratio (BCR) of vegetable cultivation

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
Low BCR	≤ 1.90 ($\bar{x} - 1SD$)	1.18-3.36	12	10.3	2.32	0.41
Medium BCR	1.91–2.73 ($\bar{x} \pm 1SD$)		87	75.0		
High BCR	> 2.73 ($\bar{x} + 1SD$)		17	14.7		
Total			116	100		

Table 4.7 indicates that the highest proportion (75.0 %) of the women had medium benefit cost ratio (BCR) of vegetable cultivation compared to 14.7 percent had high benefit cost ratio (BCR) and the lowest proportion (10.3 %) had low BCR of vegetable cultivation. Table also shows that 89.70 percent of the rural women had medium to high BCR.

4.1.8 Attitude towards vegetable cultivation

Score of attitude towards vegetable cultivation of the women ranged from 18 to 37 against the possible range of 0 to 48 with mean and standard deviation of 26.37 and 4.59 respectively. On the basis of attitude towards vegetable cultivation scores, the women were classified into three categories namely ‘unfavorable’, ‘neutral’ and ‘favorable’ attitude towards vegetable cultivation. The distribution of the women according to their attitude towards vegetable cultivation is given in Table 4.8.

Table 4.8 Distribution of rural women according to their attitude towards vegetable cultivation

Category	Basis of categorization (score)	Observed range (score)	Women		Mean	SD
			Number	Percent		
Unfavorable attitude	<24	18-37	34	29.32	26.37	4.59
Neutral attitude	24		10	8.62		
Favorable attitude	>24		72	62.06		
Total			116	100		

The findings of the present study reveal that around 62.06 percent of the rural women in study area had favorable attitude towards vegetable cultivation.

4.1.9 Time spent in vegetable management

Time spent in vegetable management of the women ranged from 10 to 25 with a mean and standard deviation of 16.81 and 3.95 respectively. Based on the time spent in vegetable management score, the women were classified into three categories namely minimum, average and maximum time spent in vegetable management. The distribution of the women according to their time spent in vegetable management is presented in Table 4.9.

Table 4.9 Distribution of the rural women according to their time spent in vegetable management

Category	Basis of categorization (Mean±SD)	Observed range (score)	Number	Percent	Mean (\bar{x})	SD
Minimum time spent	≤ 13 ($\bar{x} - 1SD$)	10-25	27	23.3	16.81	3.95
Average time spent	14-21 ($\bar{x} \pm 1SD$)		70	60.3		
Maximum time spent	>21 ($\bar{x} + 1SD$)		19	16.4		
Total			116	100.0		

Table 4.5 indicates that the highest proportion (60.3 %) of the women had average time spent compared to 23.3 percent in minimum time spent and 16.4 percent women in maximum time spent category in vegetable management respectively. From the survey, it can be said that most of the women in the study area are not only related to vegetable production but also different activities.

4.1.10 Organizational participation

Organizational participation score of the women ranged from 0 to 6 with a mean and standard deviation of 2.41 and 1.54 respectively. Based on organizational participation score, the women were classified into three categories namely low, medium and high participation. The distribution of the women as per their organizational participation is presented in Table 4.10.

Table 4.10 Distribution of the rural women according to their organizational participation

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
No participation	0	0-6	11	9.5	2.41	1.54
Low participation	1 ($\bar{x} - 1SD$)		30	25.9		
Medium participation	2-4 ($\bar{x} \pm 1SD$)		62	53.4		
High participation	>4 ($\bar{x} + 1SD$)		13	11.2		
Total			116	100.0		

Data reveals that the highest proportion (53.4 %) of the women had medium organizational participation, while 25.9% had low organizational participation and the lowest 9.5 % had no organizational participation. Data also reveals that 11.2% of the women had high organizational participation. However, about four-fifth (79.30%) of the rural women had low to medium organizational participation. It means that most of the time they involved in farm management and household activities.

4.1.11 Extension contact

The observed score of extension contact of the women ranged from 12 to 29 percent against the possible range of 0 to 32. The average score of the women was 18.93 with a standard deviation of 3.92. The women were classified into three categories on the basis of their extension contact scores namely low, medium and high extension contact. The distribution of the women according to their extension contact is given in Table 4.11.

Table4.11 Distribution of rural women according to their extension contact

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
Low contact	≤ 15 ($\bar{x}-1SD$)	12-29	22	19.0	18.93	3.92
Medium contact	16-23 ($\bar{x}\pm 1SD$)		75	64.7		
High contact	>23 ($\bar{x}+1SD$)		19	16.3		
Total			116	100		

Table 4.11 shows that the highest proportion (64.7 %) of the women had medium extension contact as compared to 16.3 percent of them having high extension contact and the lowest 19.0 percent women had low extension contact. The table again reveals that majority of the respondents (83.7%) had low to medium extension contact. Low level of extension service or lack of women's awareness might be the reason behind this scenario.

4.1.12 Training exposure

Training exposure score of the women ranged from 0 to 21 with a mean and standard deviation of 11.04 and 5.51 respectively. Based on the training exposure score, the women were classified into four categories namely 'no training', 'low', 'medium' and 'high' training exposure. The distribution of the women according to their training exposure is presented in Table 4.12.

Table 4.12 Distribution of the rural women according to their training Exposure

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
No training	0	0-21	7	6.0	11.04	5.51
Low training	≤ 6 ($\bar{x} - 1SD$)		20	17.2		
Medium training	7-16 ($\bar{x} \pm 1SD$)		64	55.2		
High training	> 16 ($\bar{x} + 1SD$)		25	21.6		
Total			116	100.0		

Table 4.12 indicates that the highest proportion (55.2%) of the women had medium training exposure compared to 17.2 percent in low training exposure and 21.6 percent in high training exposure category respectively. 17.2 percent of the respondents had low training exposure category whereas 6.0 percent of rural women had no training. The table also shows that most of the rural women of the study area had different different level of training exposure regarding vegetable production.

4.1.13 Knowledge on vegetable cultivation

Knowledge on vegetable cultivation scores of the women ranged from 17 to 31 against possible score of 0 to 40. The mean and standard deviation were 23.24 and 3.36 respectively. Based on the knowledge on vegetable cultivation scores, the women were classified into three category namely poor knowledge, medium knowledge and sound knowledge on vegetable cultivation (Table 4.13).

Table 4.13 Distribution of vegetable women according to their knowledge on vegetable cultivation

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
Poor knowledge	≤ 20 ($\bar{x}-1SD$)	17-31	28	24.1	23.24	3.36
Medium knowledge	21-26 ($\bar{x}\pm 1SD$)		64	55.2		
Sound knowledge	> 26 ($\bar{x}+1SD$)		24	20.7		
Total			116	100		

Table 4.13 reveals that 55.2 percent of the women had medium knowledge on vegetable cultivation, 24.1percent had poor knowledge on vegetable cultivation and the lowest 20.7 percent had sound knowledge on vegetable cultivation. Thus,more than three-fourth(75.9%)of the women had medium to sound knowledge on vegetable cultivation. In the study area,it is also observed that education level and training exposure on vegetable cultivation is quite satisfactory.These might be the factors of having 75.9% medium to sound knowledge of the rural women.

4.2 Decision making ability of rural women in vegetables production

Decision making ability of rural women in vegetables production scores ranged from 38 to 59 against possible score of 0 to 80. The average score and standard deviation were 46.63 and 4.68 respectively. Based on the decision making ability in vegetables production scores, the women were classified into three categories namely low, medium and high decision making ability in vegetables production (Table 4.14)

Table 4.14 Distribution of rural women according to their decision making ability in vegetables production

Category	Basis of categorization (Mean±SD)	Observed range (score)	Women		Mean (\bar{x})	SD
			Number	Percent		
Low decision making ability	≤ 42 ($\bar{x}-1SD$)	38-59	23	19.8	46.63	4.68
Medium decision making ability	43-51 ($\bar{x}\pm 1SD$)		72	62.1		
High decision making ability	> 51 ($\bar{x}+1SD$)		21	18.1		
Total			116	100.0		

Table 4.14 reveals that 62.1 percent of the women faced medium decision making ability in vegetables production where 19.8 percent women faced low decision making ability in vegetables production and the 18.1 percent women faced high decision making ability in vegetables production. Thus, an overwhelming majority (81.9 %) of the women had low to medium decision making ability in vegetables production. In Bangladesh, specially in rural area decision making regarding household and farm management activities is dominated by male person or they jointly take the decision.

4.3 Relationship between the selected characteristics of the women and their decision making ability in vegetables production

This section deals with exploring the relationships between the independent and dependent variables of the study. The independent variables were age, education, family size, area under vegetable production, vegetable cultivation experience, annual family income, benefit cost ratio (BCR), attitude towards vegetable cultivation, time spent in vegetable management, organizational participation, extension contact, training exposure and knowledge on vegetable cultivation. Decision making ability of rural women in vegetables production was one of the dependent variable. .

Pearson's Product Moment Co-efficient of Correlation (r) was used to test the null hypothesis concerning the relationships between each of the selected characteristics of the women with their decision making ability in vegetables production. Five percent (0.05) level of probability was used as the basis for acceptance or rejecting the null hypothesis at $(116-2) = 114$ degrees of freedom. The results of correlation of coefficient (r) between the independent and dependent variables have been shown in Table 4.15. The details of inter correlation among all the variables have been shown in Appendix-II.

Table 4.15 Co-efficient of correlation between each of the selected characteristics of the women with their decision making ability in vegetables production (n = 114)

Focus variable	Explanatory variables	Correlation co-efficient values (r)	Tabulated value of 'r' with 114 df	
			0.05	0.01
Decision making ability of rural women in vegetables production	Age	0.009 ^{NS}	0.188	0.245
	Education	0.790 ^{**}		
	Family size	-0.085 ^{NS}		
	Area under vegetable production	0.233 [*]		
	Vegetable cultivation experience	0.032 ^{NS}		
	Annual family income	0.200 [*]		
	Benefit Cost Ratio (BCR)	0.531 ^{**}		
	Attitude towards vegetable cultivation	0.662 ^{**}		
	Time spent in vegetable management	0.689 ^{**}		
	Organizational participation	0.056 ^{NS}		
	Extension contact	0.034 ^{NS}		
	Training exposure	0.113 ^{NS}		
	Knowledge on vegetable cultivation	0.479 ^{**}		

^{NS} Not Significant

* Significant at 0.05 level (5 percent)

** Significant at 0.01 level (1 percent)

4.3.1 Relationship between age of the women and their knowledge on vegetable production

The following observations were recorded regarding the relationship between the age of woman and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of “r” (0.009) was found smaller than that of the tabulated value (0.188) with 114df at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was insignificant.
- iii. The null hypothesis was accepted.

The findings indicated that the age of women vegetable farmer was insignificant. So, there is no relationship of age of the women with their knowledge on vegetable production. Roy (2006) found that age of the farmer had no significant relationship with their knowledge on boro rice cultivation. Similar results were observed by Khan (2005), Islam (2005) and Rahman (2004) in their respective studies.

4.3.2 Relationships between education of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between level of education of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of ‘r’ (0.790) was found to be higher than the tabulated value (0.245) with 114 degrees of freedom at 0.01 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at both 0.05 and .01 level of probability and showed a positive trend.

iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that education of the women was an important factor for decision making ability in vegetables production. This means that education of the women and their decision making ability in vegetables production were dependent to each other. It means that decision making ability in vegetables production were found more among those women who had more education than the women with less education.

4.3.3 Relationships between family size under vegetable production of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between family size under vegetable production of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.085) was found to be lower than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was not significant at 0.05 level of probability and showed a negative trend.
- iii. The null hypothesis was accepted.

Based on the above findings, it can be said that family size of the women was not an important factor for decision making ability in vegetables production. There is no relationship between family size of the rural women and their decision making ability in vegetable production.

4.3.4 Relationships between area under vegetable production of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between farm size under vegetable production of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.233) was found to be higher than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at 0.05 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that farm size under vegetable production of the women was an important factor for decision making ability in vegetables production. This means that farm size under vegetable production of the women and their decision making ability in vegetables production were dependent to each other. It means that decision making ability in vegetables production were found more among those women who had more farm size under vegetable production than the women with less farm size under vegetable production.

4.3.5 Relationship between vegetable cultivation experience of the women and their knowledge on vegetable production

The following observations were recorded regarding the relationship between the vegetable cultivation experience of woman and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of "r" (0.032) was found smaller than that of the tabulated value (0.188) with 114df at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was insignificant.
- iii. The null hypothesis was accepted.

The findings indicated that the vegetable cultivation experience of women vegetable farmer was insignificant. So, it can be said that there is no

relationship between vegetable cultivation experience and their decision making ability on vegetable production.

4.3.6 Relationships between annual family income of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between annual family income of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.200) was found to be higher than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at 0.05 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that annual family income of the women was an important factor for decision making ability in vegetables production. This means that annual family income of the women and their decision making ability in vegetables production were dependent to each other. It means that decision making ability in vegetables production were found more among those women who had more annual family income than the women with less annual family income.

4.3.7 Relationships between benefit cost ratio (BCR) of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between benefit cost ratio (BCR) of vegetable production and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.531) was found to be higher than the tabulated value (0.245) with 114 degrees of freedom at 0.01 level of probability as shown in Table 4.15.

- ii. The relationship between the concerned variables was significant at 0.01 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that benefit cost ratio (BCR) of vegetable production was an important factor for decision making ability by the rural women in vegetables production. This means that benefit cost ratio (BCR) of vegetable production and decision making ability by the rural women in vegetables production were dependent to each other. It means that decision making ability in vegetables production were found more among those women who had gotten more benefit cost ratio (BCR) of vegetable production than the women with less benefit cost ratio (BCR).

4.3.8 Relationships between attitude towards vegetable cultivation of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between attitude towards vegetable cultivation of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.662) was found to be higher than the tabulated value (0.245) with 114 degrees of freedom at 0.01 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at 0.01 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that attitude towards vegetable cultivation of the women was an important factor for decision making ability in vegetables production. This means that attitude towards vegetable cultivation of the women and their decision making ability in vegetables production were not independent to each other. It means that decision making ability in vegetables production were found more among those women who had more

attitude towards vegetable cultivation than the women with poor attitude towards vegetable cultivation.

4.3.9 Relationships between time spent in vegetable management of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship time spent in vegetable management of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.689) was found to be higher than the tabulated value (0.245) with 114 degrees of freedom at 0.01 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at 0.01 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that time spent in vegetable management of the women was an important factor for decision making ability in vegetables production. This means that time spent in vegetable management of the women and their decision making ability in vegetables production were not independent to each other. It means that decision making ability in vegetables production were found more among those women who spent more time in vegetable management than the women with less time spent in vegetable management.

4.3.10 Relationships between organizational participation of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between organizational participation of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.056) was found to be lower than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was not significant at 0.05 level of probability.
- iii. The null hypothesis was accepted.

Based on the above findings, it can be said that organizational participation of the women was not an important factor for decision making ability in vegetables production. There is no relationship between organizational participation of the rural women and their decision making ability in vegetable production.

4.3.11 Relationships between extension contact of rural women and their making ability in vegetables production

The following observations were recorded regarding relationship between extension contact of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.034) was found to be lower than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was insignificant at 0.05 level of probability.
- iii. The null hypothesis was accepted.

Based on the above findings, it can be said that extension contact of the women was not an important factor for decision making ability in vegetables production. There is no relationship between extension contact of the rural women and their decision making ability in vegetable production.

4.3.12 Relationships between training exposure of rural women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between training exposure of the rural women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.113) was found to be lower than the tabulated value (0.188) with 114 degrees of freedom at 0.05 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was not significant at 0.05 level of probability.
- iii. The null hypothesis was accepted.

Based on the above findings, it can be said that training exposure of the rural women was not an important factor for decision making ability in vegetables production. There is no relationship between training exposure of the rural women and their decision making ability in vegetable production.

4.3.13 Relationships between knowledge on vegetable cultivation of women and their decision making ability in vegetables production

The following observations were recorded regarding relationship between knowledge on vegetable cultivation of the women and their decision making ability in vegetables production on the basis of correlation coefficient:

- i. The computed value of 'r' (0.479) was found to be higher than the tabulated value (0.245) with 114 degrees of freedom at 0.01 level of probability as shown in Table 4.15.
- ii. The relationship between the concerned variables was significant at 0.01 level of probability and showed a positive trend.
- iii. The null hypothesis could be not accepted.

Based on the above findings, it can be said that knowledge on vegetable cultivation of the women was an important factor for decision making ability in

vegetables production. This means that knowledge on vegetable cultivation of the women and their decision making ability in vegetables production were not independent to each other. It means that decision making ability in vegetables production were found more among those women who had more than the women with less knowledge on vegetable cultivation.

4.4 Constraints faced by rural women in decision making

Constraints faced by rural women in decision making scores ranged from 10 to 33 against possible score of 0 to 40. The average score and standard deviation were 18.39 and 5.42 respectively. Based on the constraints faced in decision making scores, the respondents were classified into three categories namely low, medium and high constraints faced in decision making (Table 4.16).

Table 4.16 Distribution of the rural women according to their constraints faced in decision making

Category	Basis of categorization (score)	Observed range (score)	Respondents		Mean (\bar{x})	SD
			Number	Percent		
Low constraints	≤ 13 ($\bar{x} - 1SD$)	10-33	25	21.6	18.39	5.42
Medium constraints	14-24 ($\bar{x} \pm 1SD$)		76	65.5		
High constraints	> 24 ($\bar{x} + 1SD$)		15	12.9		
Total			116	100.0		

Table 4.16 reveals that 65.5 percent of the respondent had medium constraints faced in decision making, 21.6 percent had low constraints faced in decision making and 12.9 percent had high constraints faced in decision making during vegetable cultivation. Thus, an overwhelming majority (78.4 percent) of the respondent had medium to high constraints faced in decision making during vegetable cultivation.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Major Findings

5.1.1 Selected characteristics of the rural women

Age: The young aged women comprised the highest proportion (59.5 %) and the lowest proportion (6.9 %) constituted by the old aged category. Middle aged category belongs to 33.6%.

Level of education: Primary education constituted the highest proportion (52.6 %) and the lowest 2.6 percent in can't read and write category.

Family size: The medium family size constituted the highest proportion (48.3 %), whereas the lowest proportion (12.9 %) constituted by the large family category.

Area under vegetable production: The medium area under vegetable production constituted the highest proportion (51.7 %) and the lowest 15.5 percent women had large area under vegetable production.

Vegetable cultivation experience: The majority (51.7 %) of the women fell in low experience in vegetable cultivation category, whereas the lowest 9.5 percent in high experience category.

Annual family income: The medium annual family income constituted the highest proportion (60.3 %) and the lowest 9.5 percent women had high annual family income.

Benefit Cost Ratio (BCR): The highest proportion (75.0 %) of the women had medium Benefit Cost Ratio (BCR) of vegetable cultivation and the lowest proportion (10.3 %) had low BCR of vegetable cultivation category.

Attitude towards vegetable cultivation: The majority (62.06%) of the women were felt in favorable attitude and the lowest 8.62% in neutral attitude towards vegetable cultivation category.

Time spent in vegetable management: The highest proportion (60.3 %) of the women had average time spent and the lowest 16.4 percent women in maximum time spent category in vegetable management respectively.

Organizational participation: The highest proportion (53.4 %) of the women had medium organizational participation and the lowest 9.5 percent had no organizational participation.

Extension contact: The highest proportion (64.7 %) of the women had medium extension contact and the lowest 16.3 percent women were felt high extension media contact category.

Training exposure: The highest proportion (55.2 p%) of the women had medium training exposure and the lowest 21.6 percent in high training exposure category respectively.

Knowledge on vegetable cultivation: The highest proportion (55.2 %) of the women had medium knowledge on vegetable cultivation and the lowest 20.7 percent had high knowledge on vegetable cultivation.

5.1.2 Decision making ability of rural women in vegetables production

The highest proportion (62.1 %) of the women faced medium decision making ability in vegetables production and the lowest 18.1 percent women faced high decision making ability in vegetables production.

5.1.3 Relationship between the selected characteristics of the women and their decision making ability in vegetables production

There was found a positive relationship among women' education, farm size under vegetable production, annual family income, Benefit Cost Ratio (BCR), attitude towards vegetable cultivation, time spent in vegetable management,

knowledge on vegetable cultivation with their decision making ability in vegetables production.

5.1.4 Constraints faced by rural women in decision making

Most of the women (65.5 %) had medium constraints faced in decision making, 21.6 percent had low constraints and 12.9 percent had high constraints faced in decision making during vegetable cultivation.

5.2 Conclusions

The findings and relevant facts of research work prompted the researcher to draw following conclusions.

- i. Most of the rural women (81.9%) had low to medium decision making ability regarding vegetable production. Therefore, it is included that rural women are not aware about their role expectation or their decision is suppressed by male dominance.
- ii. Rural women's education had a significant positive relationship with their decision making ability in vegetables production. Therefore, it is concluded that any arrangement to increase their educational level would ultimately increase their decision making ability in vegetables.
- iii. Area under vegetable production of the rural women had also a significant positive relationship with their decision making ability in vegetables production. They should be encouraged more in vegetable farming as well as decision making.
- iv. A significant positive relationship is found between annual family income of the women and their decision making ability in vegetables production. Therefore, it is concluded that necessary steps taken to increase their annual income would ultimately increase their decision making ability in vegetables.
- v. Benefit Cost Ratio (BCR) of vegetable cultivation showed a significant positive relationship with decision making ability of rural women in

vegetables production. Therefore, it is concluded that steps to increase Benefit Cost Ratio (BCR) of vegetable cultivation would ultimately increase decision making ability of rural women in vegetables production.

- vi. Attitude towards vegetable cultivation needs to be enhanced to increase decision making ability of rural women in vegetables production.
- vii. Rural women could be more motivated to spent more time in vegetable management which ultimately enhance their decision making ability of rural women in vegetables production.
- viii. Necessary arrangements should be made to increase knowledge on vegetable cultivation which would help to increase the decision making ability of rural women in vegetables production.
- ix. The findings reveals that majority (65.5 %) of the respondents had medium constraints in decision making during vegetable cultivation. It is concluded that the composite constraints faced by the women in decision making during vegetable cultivation needs to minimize for sustainable vegetable production.

5.3 Recommendations

5.3.1 Recommendations for policy implications

On the basis of observation and conclusions drawn from the findings of the study following recommendations are made:

- i. It is recommended that rural women should provide awareness campaign,proper training on decision making ability in household activities and vegetable production.
- ii. Arrangements should be made for enhancing the education level of the women through the establishment of night school, adult education and other extension methods as possible which would promote their knowledge at all aged women and also would gathered experience.

- iii. Area under vegetable production of the women should be modified through enhancing the capability of the women by the extension workers
- iv. The extension workers should work with the rural women to diversify their source of annual family income which would help them to maximize the decision making ability in vegetables production..
- v. Arrangements should be made for enhancing the market facilities through government and non-government organizations with a view to bringing the BCR facilities which would subsequently enhance the decision making ability of the women in vegetables production.
- vi. DAE and relevant NGOs should review their training program and offer motivational campaign as well as vegetable production guide to uplift the knowledge and attitude of the rural women toward vegetable cultivation.
- vii. An effective step should be taken by the Department of Agricultural Extension (DAE) and Non-Government Organizations (NGOs) for strengthening the women's qualities in favor of reducing the problems faced by the women in vegetable cultivation to a higher degree.
- viii. More manpower and technical expertise should be appointed at rural area. Therefore, more number of women can contact regularly the development workers and disseminate their earned skill to other women which helps to minimize the constraints in decision making

5.3.2 Recommendations for further study

On the basis of scope and limitations of the present study and observation made by the researcher, the following recommendations are made for future study.

- i. The present study was conducted in Bagerhat district. It is recommended that similar studies should be conducted in other areas of Bangladesh.
- ii. This study investigated the relationship of thirteen characteristics of the women with their decision making ability in vegetables production. Therefore, it is recommended that further study should be conducted with

other characteristics of the women to explore the decision making ability in vegetables production.

- iii. The present study was concern only with the extent of decision making ability in vegetables production. It is therefore suggested that future studies should be included more reliable measurement of concerned variable is necessary for further study.

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APPENDIX-I
ENGLISH VERSION OF THE INTERVIEW SCHEDULE
Department of Agricultural Extension and Information System
Sher-e-Bangla
Agricultural University

Dhaka-1207

An Interview Schedule for the Study Entitled

**DECISION MAKING ABILITY OF RURAL WOMEN IN
VEGETABLES PRODUCTION**

Name of the respondent: Serial

No: Union:

Village:

(Please provide following information. Your information will be kept confidential and will be used for research purpose only)

1. Age

How old are you? _____ years.

2. Education

Please mention your level of education.

a) I can't read and write

b) I can sign only

c) I have passed.....class.

3. Family size

How many members do you have in your family? Nos.

4. Farm size under vegetable production

How many farm areas do you have under vegetable production? ha

5. Vegetable cultivation experience

How long have been cultivating vegetable? Years

6. Annual family income

Please mention the amount of annual income from the following source during last year:

a) Income from Agricultural Crops

SL. No.	Crop Name	Production (Kg or Maund)	Production Cost	Income/Kg or Maund (Tk)	Total Income (Tk)
1.	Rice				
2.	Wheat				
3.	Maize				
4.	Jute				
5.	Potato				
6.	Pulse crop				
7.	Oil crop				
8.	Spice crop				
9.	Vegetables				
10.	Fruits				
11.	Others				
Total					

b) Income from animals and fish resources

Sl. No.	Income resources	Production (Kg or Maund/ Number)	Income/Unit (Tk)	Total Income(Tk)
1.	Livestock			
2.	Poultry			
3.	Fish resources			
Total				

c) Income from other resources

Sl. No.	Income resources	Total Income (Tk.)
1.	Service	
2.	Business	
3.	Day labor	
4.	Other family members	
5.	Others income source	
Total		

7. Benefit Cost Ratio (BCR)

Please mention the expenditure and income from vegetable cultivation in this year.

$$BCR = \frac{\text{Total Income}}{\text{Total Cost}}$$

8. Attitude towards vegetable cultivation

Please indicate your agreement with the following statement:

SL. No.	Statement	Extent of agreement/disagreement				
		SA (4)	A (3)	UD (2)	DA (1)	SDA (0)
1 (+)	Vegetable cultivation is profitable					
2 (-)	Vegetable cultivation is a laborious task					
3 (+)	Vegetable cultivation can empower the rural women					
4 (-)	The society doesn't support women to cultivate vegetable					
5 (+)	Post harvest activities of vegetable is easy					
6 (-)	Modern varieties do not help to increase vegetable production					
7 (+)	The socio-economic conditions of the villagers are improving by vegetable Cultivation					
8 (-)	Vegetable marketing is difficult					
9 (+)	Vegetable cultivation ensures nutrition of the family members					
10 (-)	It is difficult to get credit regarding vegetable cultivation					
11 (+)	It is possible to maintain a family through vegetable cultivation					
12 (-)	It is difficult to get training regarding vegetable cultivation					

Note: SA= Strongly Agreed; A=Agreed; UD=Undecided; DA=Disagreed; SDA= Strongly Disagreed;

9. Time spent in vegetable management

How much time do you spend in vegetable management?hours/week

10. Organizational participation

Please mention the nature of your participation:

Sl. No.	Name of organizations	Not involved (0)	Nature of participation		
			Ordinary Member (1)	Executive Member (2)	President/ Secretary (3)
1.	GO organized co-operative				
2.	Youth club				
3.	NGO organized co-operative				
4.	Farmers' co-operative organized by themselves				
5.	IPM club				
6.	FFS				

11. Extension contact

Please state the extent of your contact with the following ones:

Sl. No.	Name of information sources	Extent of contact				
		Regularly (4)	Frequently (3)	Sometimes (2)	Rarely (1)	Not at all (0)
1.	Seed, Insecticide, Fertilizer dealer	> 9 times/year	7-9 times/year	4-6 times/year	1-3 times/year	0 time/year
2.	Ideal vegetable cultivators	> 9 times/year	7-9 times/year	4-6 times/year	1-3 times/year	0 time/year
3.	Agricultural Extension Officer (AEO)	> 6 times/year	5-6 times/year	3-4 times/year	1-2 times/year	0 time/year
4.	Sub Assistant Agriculture Officer (SAAO)	> 6 times/year	5-6 times/year	3-4 times/year	1-2 times/year	0 time/year
5.	Group discussion	Once in a month	Once/ 2 months	Once/ 3 months	Once/ 4 months	0 time/6 months
6.	Watching agril. related programs on TV	Daily	Weekly	Fortnightly	Once/ month	0 time/6 months
7.	Listening agril. related programs on radio	Daily	Weekly	Fortnightly	Once/ month	0 time/6 months
8.	Reading agril. related leaflet, booklet	Daily	Weekly	Fortnightly	Once/ month	0 time/6 months
Total						

12. Training exposure

Have you received any training related to vegetable cultivation?

(Please Put a Tick mark)

i) Yes

ii) No

If Yes, then mention the name the following ones:

Sl. No.	Name of the training course	Organization	Days
01.			
02.			
03.			
04.			
05.			

13. Knowledge on vegetable cultivation

Please answer the following questions:

Sl. No.	Questions	Total Marks	Marks Obtained
1.	Mention the name of two winter vegetables	2	
2.	Mention the name of two summer vegetables	2	
3.	Mention two fungal diseases of tomato	2	
4.	Mention the sowing time of the gourd vegetables	2	
5.	Distance of row to row and plant to plant of brinjal	3	
6.	Mention three fungal diseases of brinjal	3	
7.	Mention the procedure of inter-culture operations of gourd, cauliflower vegetables	4	
8.	Mention the method of insects and pests control for potato, tomato	4	
9.	Mention the methods of disease control of root vegetables	4	
10.	Mention the management procedure of earthing up for potato cultivation	2	
11.	Mention the management procedure of mulching for brinjal cultivation	2	
12.	Mention two beneficial insects for gourd field	2	
13.	Mention the maturity symptoms of cabbage	2	
14.	What vegetables are infected by the mosaic virus?	3	
15.	Do you practice pheromone trap during brinjal cultivation and how you do it?	3	

14. Extent of decision making ability

Please express your nature of decision making ability on the following items:

Sl. No.	Item	Extent of decision making ability				
		DMH (4)	DMCH (3)	DMCFM (2)	DMO (1)	NAMD (0)
1.	Land preparation					
2.	Leasing in and out of farm					
3.	Investment on farm capital					
4.	Time of sowing					
5.	Purchase or sale of farm implement/ machinery					
6.	Raising of nursery					
7.	Uprooting and transplanting of seedling					
8.	Choice of vegetable crops to be grown					
9.	Arrangement of inputs					
10.	Adoption of HYV					
11.	Inter culture operations					
12.	Manure and fertilizer types					
13.	Time of application of manure and fertilizer					
14.	Time of weeding					
15.	Irrigating fields					
16.	Time of harvesting					
17.	Storage of Production					
18.	Purchase or sale of cultivable					
19.	Preparation of produce of sale					
20.	Market sale					

[DMH=Decision Made by Herself;

DMCH=Decision Made by Consultation with Husband;

DMCFM=Decision Made by Consultation by Family Members;

DMO=Decision Made by Others;

NAMD=No ability to Make Decision]

15. Constraints faced by rural women in decision making

Please express your opinion on the following constraints:

Sl. No.	Item	Extent of problem				
		VH (4)	H (3)	M (2)	L (1)	NAT (0)
1.	Higher time consumption for household works					
2.	No management of time for farm and home activities					
3.	Family norms					
4.	Poor economic status of the family					
5.	Male dominance					
6.	Lack of education					
7.	Inability to take decision					
8.	Lack of proper guidance for taking decision					
9.	Lack of information about the solution to problem					
10.	No knowledge about improved technology					
11.	High cost of farm material					
12.	Lack of marketing facilities					

[VH=Very High; H=High; M=Medium; L=Low; NAT=Not at all]

Thanks for your kind co-operation.

Date:

.....
(Signature of the interviewer)

Appendix-II

Correlations matrix among the selected characteristics of the women and the decision making ability in vegetables production

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	Y
X ₁	1													
X ₂	-.070	1												
X ₃	.287**	-.146	1											
X ₄	.051	.224*	.022	1										
X ₅	.920**	-.070	.282**	.057	1									
X ₆	.015	.252**	-.021	.804**	.068	1								
X ₇	.020	.660**	-.067	.406**	.002	.385**	1							
X ₈	.014	.667**	-.105	.272**	-.017	.269**	.447**	1						
X ₉	-.245**	.798**	-.259**	.169	-.226*	.180	.495**	.552**	1					
X ₁₀	-.115	.231*	.011	.107	-.154	.174	.272**	.166	.118	1				
X ₁₁	.116	-.053	.251**	-.101	.119	-.082	-.023	-.004	-.085	-.048	1			
X ₁₂	-.269**	.137	-.004	-.058	-.275**	-.050	-.038	.029	.097	-.027	-.139	1		
X ₁₃	-.205*	.667**	-.127	.055	-.234*	.081	.369**	.413**	.658**	.209*	-.012	.011	1	
Y	.009	.790**	-.085	.233*	.032	.200*	.531**	.662**	.689**	.056	.034	.113	.479**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

X₁ = Age, X₂ =Education, X₃=Family size, X₄=Farm size under vegetable production, X₅=Vegetable cultivation experience, X₆=Annual family income, X₇=Benefit Cost Ratio (BCR) , X₈=Attitude towards vegetable cultivation, X₉= Time spent in vegetable management , X₁₀=Organizational participation, X₁₁=Extension contact, X₁₂=Training exposure, X₁₃=Knowledge on vegetable cultivation

Y= Decision Making Ability of Rural Women in Vegetables Production

