

**INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON RURAL
WOMEN WELL-BEING**

AMITAV SUTER



**DEPARTMENT OF AGRICULTURAL EXTENSION &
INFORMATION SYSTEM**

SHER-E-BANGLA AGRICULTURAL UNIVERSITY

DHAKA-1207

DECEMBER, 2020

**INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON RURAL
WOMEN WELL-BEING**

BY
AMITAV SUTER
Reg. No. 18-09171

A thesis

Submitted to the Faculty of Agriculture
Sher-e-Bangla Agricultural University, Dhaka
In partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE (MS)

IN

AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

SEMESTER: JULY-DECEMBER, 2020

APPROVED BY:

(Dr. Muhammad Humayun Kabir)
Supervisor
Professor
Dept. of Agril. Ext. and Info. System
Sher-e-Bangla Agricultural University

(Dr. Md. Sekender Ali)
Co-Supervisor
Professor
Dept. of Agril. Ext. and Info. System
Sher-e-Bangla Agricultural University

(Prof. Mohammad Zamshed Alam)
Chairman
Examination Committee
Dept. of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University



Department of Agricultural Extension and Information System

Sher-e-Bangla Agricultural University

Sher-e-Bangla Nagar,

Dhaka-1207, Bangladesh

CERTIFICATE

This is to certify that the thesis entitled **“INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON RURAL WOMEN WELL-BEING”** submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka in partial fulfillment of the requirements for the degree of **Master of Science (M.S.) in Agricultural Extension and Information System**, embodies the result of a piece of bona-fide research work conducted by **AMITAV SUTER, Registration No. 18-09171** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that any help or source of information, as has been availed of during the course of this study has been duly acknowledged by the Author.

Dated: December, 2020

Dhaka, Bangladesh

Dr. Muhammad Humayun Kabir

Supervisor

Professor

Department of Agricultural Extension and
Information System

Sher-e-Bangla Agricultural University



**DEDICATED
TO
MY BELOVED
PARENTS**

ACKNOWLEDGEMENTS

All the praises are due to almighty the merciful god, who enabled the researcher to complete the study successfully. Guidance, help and co-operation have been received from several persons or authority during the tenure of the study. The author is immensely grateful to all of them.

The author with a sense of respect, expresses his heart felt gratitude to **Supervisor Professor Dr. Muhammad Humayun Kabir**, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his untiring and painstaking guidance, innovative suggestions, continuous supervision, timely instructions and inspirations throughout the tenure of research work.

Heartfelt gratitude and profound respect to **Co-supervisor Professor Dr. Md. Sekender Ali**, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his constructive criticism, valuable suggestions and co-operation throughout the study period.

Cordial thanks and honors to **Professor Mohammad Zamshed Alam, Chairman**, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his helpful comments and providing necessary facilities during the period of the research work.

The author is grateful to Agriculture Extension Officer and Sub Assistant Agriculture Officers of Nesarabad (Swarupkati) upazila under Pirojpur district for rendering co-operation during the field work. Special thanks to the rural women, who were the respondents of the study area and gave their valuable time for interview during collection of data.

The author takes the opportunity to express his indebtedness and profound respect to his beloved father Adhir ranjon suter, mother Ranju rani mittro, brother Uzzal suter, cousin Saysob suter, Tumpa suter, Puja suter, Banna suter, Puku suter and other relatives for their blessings, sacrifices, financial support and encouragement for higher study which can never be forgotten.

Finally, Author expresses his gratefulness to Saysob Suter for his valuable inspiration, encouragement and co-operation for this research work.

The Author

LIST OF CONTENTS

CHAPTER	TITLE	Page
	ACKNOWLEDGEMENTS	i- ii
	TABLE OF CONTENTS	iii-vi
	LIST OF TABLES	vii
	LIST OF FIGURES	viii
	LIST OF APPENDICES	viii
	ABBREVIATIONS USED	ix
	ABSTRACT	x
CHAPTER I	INTRODUCTION	1-8
1.1	General Background of the Study	1
1.2	Statement of the Problem	3
1.3	Specific Objectives	4
1.4	Justification of the Study	4
1.5	Assumptions of the Study	4
1.6	Scope of the Study	5
1.7	Limitations of the Study	5
1.8	Definition of related terms	6-8
CHAPTER II	REVIEW OF LITERATURE	9-21
2.1	Review of literature on general content of Influence	9
2.2	Women's participation in homestead vegetable cultivation	12
2.3	Relationship between women Characteristics with their Influence	14
2.3.1	Age and Influence	14
2.3.2	Education and Influence	15
2.3.3	Dependency ratio and Influence	16
2.3.4	Farm size and Influence	18
2.3.5	Annual family income and Influence	18
2.3.6	Extension contact and Influence	19
2.3.7	Training and Influence	20

2.3.8	Knowledge and Influence	20
2.3.9	Time spent and Influence	20
2.4	The Conceptual Framework of the Study	20-21
CHAPTER III	METHODOLOGY	22-31
3.1	Locale of the Study	22
3.2	Population and Sample	25
3.3	Variables of the Study	25
3.4	Measurement of Variables	26
3.4.1	Measurement of Independent variables	26
3.4.1.1	Age	26
3.4.1.2	Education	26
3.4.1.3	Dependency ratio	27
3.4.1.4	Farm size	27
3.4.1.5	Annual family income	27
3.4.1.6	Extension media contact	28
3.4.1.7	Training on homestead vegetable cultivation	28
3.4.1.8	Knowledge about homestead vegetable cultivation	28
3.4.1.9	Time spent in homestead vegetables cultivation	28
3.5	Measurement of Dependent Variables	29
3.6	Instrument for Data Collection	30
3.7	Collection of Data	30
3.8	Data Processing	30
3.9	Statement of Hypothesis	30
3.9.1	Research Hypothesis	31
3.9.2	Null Hypothesis	31
3.10	Statistical Analysis	31
CHAPTER IV	RESULTS AND DISCUSSION	32-44
4.1	Selected Characteristics of the Rural Women	32
4.1.1	Age	33
4.1.2	Education	33
4.1.3	Dependency ratio	34

4.1.4	Farm size	35
4.1.5	Annual family income	35
4.1.6	Extension media contact	36
4.1.7	Training on homestead vegetable cultivation	37
4.1.8	Knowledge about homestead vegetable cultivation	37
4.1.9	Time spent in homestead vegetable cultivation	38
4.2	Influence of homestead vegetable cultivation	39
4.3	Contribution of the selected characteristics of the respondents to their Influence of homestead vegetable cultivation	40
4.3.1	Significant contribution of extension media contact to their Influence of homestead vegetable cultivation	41
4.3.2	Significant contribution of education to their Influence of homestead vegetable cultivation	42
4.3.3	Significant contribution of knowledge about homestead vegetable cultivation to their Influence of homestead vegetable cultivation	43
4.3.4	Significant contribution of training on homestead vegetable cultivation to their Influence of homestead vegetable cultivation	43-44
CHAPTER V	SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	45-49
5.1	Summary of the Findings	45
5.1.1	Selected characteristics of the rural women	45
5.1.2	Influence of homestead vegetable cultivation	45
5.1.3	Factors related to their Influence of homestead vegetable cultivation	46
5.2	Conclusions	47
5.3	Recommendations	48
5.3.1	Recommendations for policy implications	48
5.3.2	Recommendations for the further study	49

BIBLIOGRAPHY

50-56

APPENDIX

57-62

LIST OF TABLES

TABLE	TITLE	PAGE
1.1	Vegetable Productions in Bangladesh, 2010-11 to 2018-19	2
	Distribution of Population, Sample Size and Reserve	
3.1	List of Respondents in Four Selected Villages of Nesarabad (swarupkati) Upazila	25
4.1	The salient features of the selected characteristics of the women	32
4.2	Distribution of the women according to their age	33
4.3	Distribution of the women according to their education	34
4.4	Distribution of the women according to their dependency ratio	34
4.5	Distribution of the women according to their farm size	35
4.6	Distribution of the women according to their annual family income	36
4.7	Distribution of the women according to their media contact	36
4.8	Distribution of the women according to their training	37
4.9	Distribution of the women according to their knowledge	38
4.10	Distribution of the women according to their time spent	39
4.11	Distribution of the respondents according to their Influence	39
4.12	Regression coefficients of the contributing variables related to their Influence of homestead vegetable cultivation on rural women well-being	40

LIST OF FIGURES

FIGURE	TITLE	Page No
2.1	The conceptual framework of the study	21
3.1	A map of Pirojpur district showing Nesarabad (Swarupkati) upazila	23
3.2	A map of Nesarabad (Swarupkati) upazila showing the study area	24

LIST OF APPENDICES

APPENDIX	TITLE	Page No
APPENDIX-A	An English Version of the Interview Schedule on “INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON RURAL WOMEN WELL-BEING”	57-62

ABBREVIATIONS USED

GDP	Gross Domestic Product
BBS	Bangladesh Bureau of Statistics
ICT	Information Communication Technology
FOA	Food and Agricultural Organisation
NGOs	Non-Government Organisations
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
FS	Farm Size
β	Regression analysis model
IPM	Integrated Pest Management
SAAO	Sub-Assistant Agriculture Officer

INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON RURAL WOMEN WELL-BEING

ABSTRACT

The objectives of this study were to describe some selected characteristics of the homestead vegetable cultivators; to assess the influence of homestead vegetable cultivation on rural women well-being and to explore the contribution of the selected characteristics of the vegetable cultivators to their perceived influence of homestead vegetable cultivation on rural women well-being. The study was conducted with randomly selected 103 women of Guarekha union under Nesarabad upazila of Pirojpur district. A pre-tested interview schedule was used to collect data from the respondents during 3rd August, 2020 to 27th November, 2020. Influence of homestead vegetable cultivation on rural women well-being was the dependent variable and nine selected characteristics of the respondents contributed the independent variables of the study. Linear multiple regression was used to examine the contribution of the selected characteristics of the respondents. The data revealed that highest percentage (64.08%) of the rural women had medium influence of homestead cultivation compared to 26.21 percent and 9.71 percent had low and high influence, respectively. Four characteristics of the respondent's viz. extension media contact, education, training on homestead vegetable cultivation and knowledge about homestead vegetable cultivation had significant positive contribution with influence of homestead vegetable cultivation. Therefore, the policy makers should consider these significant variables for makers policies regarding expand of homestead vegetable cultivation.

CHAPTER I

INTRODUCTION

1.1 General Background of the Study

Bangladesh is one of the poorest and most densely populated countries in the world with an estimated average population density of around 1115 inhabitants per square kilometer (BBS, 2020). Due to poverty, majority of its population, particularly women and children suffer from severe malnutrition. The country is basically an agricultural country. Different crops are produced throughout the year. Although rice is the dominant crop, vegetable occupy a very important place in rice-based cropping systems and play a distinct role in the crop sub-sector to provide nutrition, enhance food security and uplift economic benefits to the producers.

Vegetables are essential in diet, provide fiber, trace minerals, vitamins, carbohydrates and proteins. Vegetables help to prevent various diseases resulting from malnutrition and unbalanced nutrition. Home gardening can play a very important role to improve the nutrition level in the country which is almost overlooked by producing vegetable. In Bangladesh a good amount of vegetable is grown throughout the year. In view of increase in income, population and nutritional consideration, there is a great need for vegetable cultivation.

Weather, climate and soil of Bangladesh are very much suitable growing vegetables round the year. But vegetable consumption is so low that per capita/day availability is hardly 112 gm whereas the requirement is estimated to 400 gm. (FAO, 2003). Potato, tomato, brinjal, pumkin etc. are grown in homestead. Homestead is the dwelling place and it is the centre where vegetables are cultivated. Homestead as defined by Abdullah (1986) is the land owned and occupied by the dwelling unit of the household and immediate area surrounding by the dwelling unit including courtyard, pond, road space around homestead, space used for cultivation of trees and vegetable and unutilized space. Cultivable land is a scarce resource in densely populated Bangladesh, which is mostly used for production of rice and other field crops. However, many small homesteads of Bangladesh remains unutilized, underutilized or not scientifically managed, which could be brought under round the year vegetable

cultivation for reducing the above mentioned problems. Many vegetable are in homestead such as cabbage, carrot, eggplant, cauliflower, potato, tomato, radish, sweet gourd, wax gourd, bitter gourd, teasel gourd, point gourd etc. not much care is taken for growing these vegetable in Bangladesh. Little attention is given to cultivate these vegetables, though these are very important source of human nutrition. There is a great scope for increasing the production of vegetable throughout the year. The benefit that can be obtained by growing more vegetables may be as follows: sources of high economic benefit, substitute of grain as crop, utilization of fallow land, vegetable export, agro-based industry and health-improvement etc. (Jahan, 2014).The total production of vegetable during the period from 2010-11 to 2018-19 is shown in Table 1.1.

Table 1.1 Vegetable Productions in Bangladesh, 2010-11 to 2018-19

Year	Production (thousand MT)
2010-11	5621
2011-12	6531
2012-13	5952
2013-14	6967
2014-15	8685
2015-16	7373
2016-17	10158
2017-18	10516
2018-19	16459

Source: Agricultural Statistics, BBS, 2020

In Bangladesh out of 8.52 million hectare cultivated land, 0.03-million-hectare land (about 5 percent) is under homestead while average individual homestead covers 0.04 hectare. Nearly 4.9 million household (30 percent) are non-farm out of total 18 million households. About 70 percent of 10 million farm households have below one hectare land (small farm) (BBS, 2020). Thus, homestead farming is the most significant system of production in rural Bangladesh.

In Bangladesh women are not habituated generally in working outside and their movement is mostly restricted to the homestead area (FSRDP, 1990). Halim (1987) reported that the women are potential producer of the agricultural product and through their participation in intensive agricultural production they increase the GDP coming from agriculture.

As of the 2020 Bangladesh census, women constitute nearly half (45.94%) of the total population and 80% of them live in the rural areas (BBS, 2020). Women from landless and marginally landless rural families cultivate different kinds of vegetable. Undoubtedly, women can play a vital role if their full talent can be explored. If women can perform their roles in homestead vegetable cultivation properly and skillfully, they will be able to ensure food security and family nutrition, increase family income and contribute to the overall improvement of Bangladesh. Considering this fact, the researcher is persuaded to conduct the research on ‘Influence of Homestead Vegetable Cultivation on Rural Women Well-being’.

1.2 Statement of the Problem

Influence refers to one’s involvement in an events, thing or situation. Influence of the rural women in homestead vegetable cultivation is very vital to agricultural development of Bangladesh, where an overwhelming majority of them live in rural areas who are very close to agricultural production system.

With a view to conduct an investigation on various aspects of homestead vegetable cultivation, the researcher undertook this piece of study entitled “Influence of homestead vegetable cultivation on rural women well-being”. The purpose of this study was to know the answer of the following questions:

1. At what extent homestead vegetable cultivation is influenced for improving rural women.
2. What are the characteristics of the rural women engage in homestead vegetable cultivation?
3. What is the contribution of selected characteristics of the rural women to their influence of homestead vegetable cultivation?

1.3 Specific Objectives

The following specific objectives have been framed out in order to give proper direction to the research work:

1. To assess the influence of homestead vegetable cultivation on rural women wellbeing
2. To describe some selected characteristics of the homestead vegetable cultivators
3. To explore the contribution of the selected characteristics of the vegetable cultivators to their perceived influence of homestead vegetable cultivation on rural women well-being

1.4 Justification of the Study

The major focus of the study is to assess the influence of homestead vegetable cultivation. Government and non-government organizations are currently putting effort and allocating resources for production-oriented research and also encouraging the rural people to undertake homestead vegetable cultivation. So, evaluation of the influence of homestead vegetable cultivation is necessary. Considering the above findings, the researcher became interested to undertake a study to determine the participation of rural women in homestead vegetable cultivation.

1.5 Assumption of the Study

The researcher had the following assumptions in mind while undertaking this study:

1. The selected respondents were competent enough to reply the queries made by the researcher.
2. The responses furnished by the respondents were valid and reliable.
3. Information furnished by the respondents included in the sample was the representative opinion of the whole population of the study area.
4. The researcher who acted as interviewer was well adjusted to social and environment condition of the study area. Hence, the data collected by her from the respondents were free from bias.
5. All the data concerning the variables of the study were normally and independently distributed.

1.6 Scope of the Study

The findings of the study will be particularly applicable to the respondent of the 4 villages of Guarekha union in Nesarabad (Swarupkati) upazila under Pirojpur district. However, the findings may also have implication to other areas of Bangladesh where the physical, socio-economic, cultural and geographical condition is similar with the study area. Thus, the findings are expected to be useful to the students, researcher and extension policy makers of different nation buildings organization to improve techniques and strategies for effective extension work with the rural people, particularly with the rural women.

1.7 Limitation of the Study

In order to make the study manageable and meaningful from the point of view of research, it was necessary to impose some limitations as stated below:

1. The study was confined to four selected villages of Guarekha union in Nesarabad (swarupkati) upazila under pirojpur district.
2. The characteristics of the respondent in the study area were many and varied but only nine characteristics were selected for investigation in this study as stated in the objectives.
3. There were many rural women in Guarekha union but only 103 respondents who participate in homestead vegetable cultivation were considered for this study.
4. This study included two types of vegetable which can be grown in homestead area, viz. i) Winter vegetable and ii) Summer vegetable.
5. Only 9 operations and cultivation of 10 vegetable were selected under each of the activities for measuring extent of influence.
6. The researcher relied on the data furnished by the respondent from their memory during interview.
7. For some cases, the researcher faced unexpected interference from the over interested side-talkers while collecting data from the target populations. However, the researcher tried to overcome the problem as far as possible with sufficient tact and skill.

1.8 Definition of related terms

The terms which have been frequently used throughout the research work are defined and interpreted below:

Vegetable

The farm vegetable in this study, referred to the edible parts of plants (root, stem, leaf, fruit etc.) which are eaten as cooked food and green salad.

Rural women

In the present study, rural women were housewives living in village and engaged in homestead vegetable cultivation directly or indirectly.

Respondent

Respondent referred to the women beneficiaries who were participated in homestead vegetable cultivation and were included to the sample.

Age

Age of a respondent was defined as the span of her life and was operationally measured by the number of years from her birth to the time of interview.

Level of Education

Education referred to the development of desirable knowledge, skill and attitude in the individual through reading, writing, and other related activities. It is measured in terms of schooling of individual respondent.

Dependency ratio

Dependency ratio of household was defined as the number of individuals in the family including herself, her husband, children and other dependent members who live and eat together.

Farm size

It referred to the area of land owned by a woman or her husband on which farming activities are carried out. A respondent was considered to have full benefit from

cultivated area either owned by him/her or obtained on share cropping system. The areas are estimated in terms of full benefit to the women. The right of women on the land taken on lease or mortgage from others was regarded as ownership in estimating the farm size.

Family income

Family income was defined as the total earning of the respondent and the members of her family from agriculture and other sources (services, business, labor etc.) during a year.

Media contact

Media contact refers to an individual access to or contact to the communication media and sources or any extension teaching methods being used for dispersion of new technologies among rural women.

Training on homestead vegetable cultivation

It refers to the total number of days attended by the women in her life to the various agriculture related training courses.

Knowledge about homestead vegetable cultivation

It referred to the rationalistic understanding of the rural women about different activities related to homestead cultivation in the homestead area.

Homestead area

In this study homestead area was considered as “A land adjoining area including garden, courtyard, pond and threshing floor. The homestead area for this study was defined as the raised land in which the household had its entire dwelling including living rooms, kitchen, cattle shed, goat shed, front yard, court yard and the area under vegetables, fruit trees, backyard bushes, bamboo bunches etc.

Time spent in homestead vegetable cultivation

It referred to how much time spent in homestead vegetable cultivation.

Influence of vegetable cultivation

This term referred to ones decision to continue the cultivation of vegetable.

Well-being

Wellbeing is not just the absence of disease or illness. It's a complex combination of a person's physical, mental, emotional and social health factors. Wellbeing is strongly linked to happiness and life satisfaction. In short, wellbeing could be described as how you feel about yourself and your life.

CHAPTER II

REVIEW OF LITERATURE

Review of literature gives the direction of the researcher to carry out the research program. And so, the rationale of this chapter is to review the literature having consequence to the present study. This chapter deals with a brief review of previous research studies relating to the influence of homestead vegetable cultivation. The relevant information regarding this influence of homestead vegetable cultivation is limited in number. However, the researcher has tried her best to collect needful information through searching relevant studies. Unfortunately, few research works were found directly related to the influence of homestead vegetable cultivation. The research program is concerned with influence of homestead vegetable cultivation. No research has been conducted on influence of homestead vegetable cultivation. So, directly related literature were not readily available for this study. Therefore, the findings of such studies related to the extent of and other partial studies have been reviewed in this chapter. The reviews are accessibly existed here based on the major objectives of the study. This chapter consists of three sections. The first section deals with the general effect of various services related to influence; the second section deals with women's participation in homestead vegetable cultivation and the third section deals with the past studies in connection with the relationships of selected characteristics of the rural women and their trend of influence and fourth section deals with the conceptual framework of the study. However, research works related to influence of homestead vegetable cultivation in different aspects of some important topics are presented below.

2.1 Review of literature on general content of influence

Azumah et al. (2018) study examined the influence of various agricultural technology transfer methods using primary data collected from 543 women in the Northern and Upper East regions of Ghana. We employed descriptive statistics supported by Kendall's *W*-test and chi-squared distribution test to identify and assess various agricultural technology transfer methods and their perceived influence. In the order of importance, we found women-to-women approach, technology demonstration fields, household extension, and radio as the main agricultural extension methods in use in

the study area. We found a significantly low patronage of the mass media and Information and Communication Technology (ICT) mechanisms such as video, mobile phone, posters, drama, and newspapers for communicating information to women. Demonstration, women-to-women, and household extension methods were perceived as the most effective agricultural extension methods. We recommend among others, that Ministry of Food and Agriculture of Ghana should be empowered to train women through both conventional (i.e.demonstration fields), and technology-led approaches using ICT and mass media such as video, mobile phones, and radio, since these methods have been found to be cost effective with significant impact on agricultural technology adoption decisions of women.

Sultana (2018) conducted a study on influence of krishokerjanala for disseminating of agricultural information and found that majority (64.2 percent) of the respondents reported 'KrishokerJanala' was moderately effective while 11.3 percent and 24.5 percent of them respectively perceived it as high and less effective as a medium for disseminating agricultural information.

Sabbir (2016) conducted a study on influence of krishokerjanala for strengthening agricultural advisory system and found that majority of the respondents (79.5%) perceived ICT-based service like KrishokerJanala as moderately effective as an agricultural advisory system.

Uddin (2006) conducted a study on influence of world vision agricultural development activities in gazipur and found revealed that 72.4 percent of the beneficiaries had medium level of influence of World Vision agricultural development activities as compared to 15.2 percent less and 12.4 percent high influence.

Scharmerhorn et al. (1988) added that influence may be defined as the degree to which a group or social system achieve its goal. An effective group is one that shows high level of both task performance and human resource maintenance overtime.

Jamilah et al. (2010) added that influence may be defined as the degree to which a group or social system achieve its goal. An effective group is one that shows high level of both task performance and human resource maintenance overtime.

Mohanan (1992) told that extension starts with knowledge management and ends up with human enrichment. Agricultural extension by its nature has an important role in promoting the adoption of new technologies and innovations.

Bembridge (1979) defined agricultural extension as a chain of fixed communicative mediations that are meant, among others, to improve and/or encourage improvements which supposedly assist to resolve (usually multi-actor) challenging circumstances.

Mears (1981) stated that an organization or group influence depends upon the performances of numerous small group or members which function and interact within the overall organizational or group system.

Coutts et al. (2005) defined Agricultural advisory services also increase the abilities and resources of persons, communities and organizations to manage change.

Maunder (2007) defined that Agricultural extension is an informal education process that assists women in improving their agricultural practices and approaches, increasing production efficiency and income, bettering their standard of living and lifting their social and educational standards.

Suryanarayana et al. (1990) revealed that 65 percent of the contact women were effective in influencing other fellow women, 23 percent of the contact women were more effective and 12 percent were less effective. It was particularly observed that the contact women who effectively used extension teaching methods were significantly successful in extension knowledge on improved technology to other women in the area of their operation.

Hasan (2002) found in his study that the highest proportion (44 percent) of the respondents perceived the existence of medium use, compared to 26 percent low use and 3 percent high use in respect of selected agricultural technologies.

Paul (1989) observed that as regards influence of result demonstration 74 percent women opined it as high comparison to 21 percent medium and only 5 percent low. In other words, 95 percent of the women considered result demonstration either as medium or high in respect of influence.

2.2 Women's participation in homestead vegetable cultivation

Chowdhury (2009) conducted a study on participation of women in farm and non-farm activities in two villages of Sadar Upazilla of Mymensingh district. This study showed that in case of both low and medium income households, female participation is moderately higher in non-farm activities than the high income households.

Nahar (2008) in her study in a selected area of Gazipur district observed that the involvement of rural woman in each of the homestead activities i.e. homestead vegetable cultivation, post-harvest activities, poultry raising and goat rearing and the extent of participation is high in all cases which is highly encouraging. In fact, these kinds of activities are mostly performed by the rural women in our country and have perfectly reflected in her study.

Uddin (2008) conducted a study among the women of Shariatpur district. He found that 68.63 percent of the respondent had medium and 31.37 percent had low involvement in home gardening practices.

Hasan (2006) observed that the highest proportion (98 percent) of conventional rural women had medium involvement in homestead activities. On-the other hand, percent of organic women farm workers had high involvement in homestead farming activities by organic women farm workers was significantly higher than that of conventional rural women's farming activities.

Ajayi (1995) performed analysis based on the descriptive examination of women's agricultural activities in four local government areas giving emphasis on market economy that features very prominently in national income accounting, erroneous belief that most rural women do not make an appreciable contribution to crop production is undetermined. He found that most women take part in planting, weeding, harvesting, and post-harvest activities of subsistence crops.

Akanda (1994) study revealed that highest proportion of the rural women had high participation in vegetable cultivation while only 15 percent of the high participation in the cultivation of fruit trees.

Halim et al. (1994) reported that in Bangladesh, women produced Indian spinach, amaranth, okra, gourd, cucumber and pumpkin during summer season and country bean, brinjal and tomato during winter season in their homestead garden successfully.

Vlassak (1993) observed that in third world countries, the role of women in agricultural production were extremely important. The tasks in agriculture as well as in food distribution and provide to women an income of their own, which was essential because of the increasing importance of money in developing countries. Women liked to increase agricultural production, but their activities were being impeded in different ways.

Akhter (1989) stated that women were involved in homestead agricultural production activities such as vegetable, fruits, timber, small animals (goat, sheep) and poultry to supply food and to increase family income.

Halim (1987) informed that women were potential producer of the homestead agricultural products and through their participation intensive homestead products may be produced. But due to lack of knowledge and utilization of proper technology and manageable practices the production remained below the expected level.

Dey (1985) mentioned in his paper that women in the households were economically active and played important role in post-harvest operations as well as other activities

like kitchen gardening and livestock care.

Hossain (1985) mentioned in his paper that women were involved in most of the post-harvest operations of vegetables production. He also advocate some measures to be taken by the government, policy makers, planners, development workers and researchers for the effective integration of participation in different homestead production and management activities like vegetable growing, livestock raising, fish cultivation, post-harvest operation and household decision making.

2.3 Relationship between women characteristics with their influence

Relationship between women characteristics with their influence of homestead vegetable cultivation are given below under the following headings:

2.3.1 Age and Influence

Sultana (2018) found had no significant relationship between the age of the beneficiaries and influence of krishokerjanala for disseminating of agricultural information.

Islam (2014) implied that there is no significant relationship between age and awareness on agricultural extension activities.

Uddin (2006) found a significant negative relationship between the age of the beneficiaries and influence of world vision agricultural development activities.

Hossain (1999) did not find any significant relationship between age and influence of agricultural development activities.

Mohanan (1992) stated that in Gambhira collective farming co-operative group member's influence has no significant relationship with their age.

Paul (1989) in his study found the influence of result demonstration was significantly related with age of the women. This means that older women viewed result demonstration to be more effective than younger women. This was probably because

the extension personnel in whose women's demonstrations are generally tried out more frequently selected older women. Due to more access to result demonstration by the older people, its influence was also more for them.

Hossain (1999) did not find any significant relationship between age and influence of agricultural development activities.

Shankaraiah and Swamy (2012) concluded that age of the women had no significant relationship with attitude of women and scientists towards dissemination of technologies.

Kim and lee (2017) found that the age of the women had a significant positive relationship with the effects of agricultural extension service on farm productivity.

Paul (1989) in his study found the influence of result demonstration was significantly related with age of the women.

Majdyan (1996) appeared that age shows a consistent finding on the influence of the media. These indicated that the relationships were all significant and there existed a negative trend.

Sarker (1996) observed that there was no relationship between the age of the women and their opinion on influence of information disseminated through ARPs to the women.

2.3.2 Education and Influence

Kim and lee (2017) found that the education of the women had a significant positive relationship with the effects of agricultural extension service on farm productivity.

Sabbir (2016) found a significant relationship between the education of the beneficiaries and influence of world vision agricultural development activities.

Uddin (2006) found a significant relationship between the education of the beneficiaries and influence of world vision agricultural development activities.

Mohanan (1992) stated that in Gambhira collective farming co-operative group member's influence has no significant relationship with their education.

Suryanaryana et al. (1990) reported that there was a positive significant relationship between education level of the contact women and their influence in influencing the adoption behavior of other women. It was, therefore, concluded that the higher level of education of contact women more influences the adoption behavior of other fellow women.

Shankaraiah and Swamy (2012) concluded that education of the women had a positively significant relationship with Attitude of women and Scientists towards Dissemination of Technologies.

Islam (2014) implied that a positively significant relationship between education and awareness on agricultural extension activities.

Hossain (1999) also found a significant relationship between education and influence of agricultural development activities.

Pudasaini (1983) also noted that as education level increases, the rate of productivity declines hence there is diminishing marginal productivity with regards to education.

2.3.3 Dependency ratio and Influence

Dependency ratio is a value which comes from family size. So, literature related to family size and Influence are mentioned below:

Uddin (2006) conducted a study on influence of agricultural activities of world vision in gazipur and found that had a significant positive relationship between family size and influence of agricultural activities.

Salahuddin (2003) in his study observed that the family size of rural women had significant negative relationship with their involvement in homestead vegetable production.

Islam (2002) in his study found that family size of the women had non- significant relationship with their involvement in income generating activities.

Chowdhury (2000) in his study found that family size of the rural women had no significant relationship with their opinion for participation in development activities.

Nahar (2000) reported that there was no relationship between family size and participation of women in homestead vegetable cultivation, poultry, farming and goat rearing but she found a significant positive relationship between family size and participation in post-harvest practices.

Akanda (1994) mentioned that family size of the rural women had significant positive relationship with their participation in the cultivation of fruit trees. The relationship with homestead vegetable cultivation and non-farm household activities was also positive but not significant.

Rao (1994) reported that rural women's participation in agriculture was positive correlated with the size of their family.

Parveen (1993) found that there was a significant positive relationship between family size of the farm women and their awareness and knowledge on environmental degradation

Akhter (1989) in her study found that family size of rural women had significant negative correlation with their attitude towards homestead production. She remarked that the household women with large family had low attitude towards homestead production because of heterogeneous opinions of the members of the large family.

Devi (1983) reported that family size had significant positive association with the farm and house management role performance of the rural women.

2.3.4 Farm size and Influence

Shankaraiah and Swamy (2012) concluded that farm size of the women had a positively significant relationship with Attitude of women and Scientists to Dissemination of Technologies.

Bardhan (2006) also found a significant relationship between the farm size of the beneficiaries and influence of agricultural development activities.

Uddin (2006) found had no relationship between the farm size of the beneficiaries and influence of krishokerjanala for strengthening agricultural advisory system.

Haq (2004) revealed that farm size of the women had a significant and positive relationship with influence of an agricultural organization.

Mohanan (1992) stated that in Gambhira collective farming co-operative group member's influence has no significant relationship with their farm size.

Taslimet al. (1989) found a significant relationship between the farm size of the beneficiaries and influence of agricultural development activities.

Haque (1982) found a significant relationship between the farm size of the beneficiaries and influence of agricultural development activities.

2.5.5 Annual family income and Influence

Kim and lee (2017) found that annual income of the women had a significant positive relationship with the effects of agricultural extension service on farm productivity.

Shankaraiah and Swamy (2012) concluded that annual family income of the women had a positively significant relationship with Attitude of women and Scientists towards Dissemination of Technologies.

Dercon et al. (2009) found that the annual income had positive significant relationship with contribution of agricultural extension to productivity.

Uddin (2006) found a significant relationship between the annual family income of the beneficiaries and influence of world vision agricultural development activities.

Evenson and Mwangi (2001) observed that there was a positive relationship between annual income from field crop and influence of agricultural extension services.

Haq et al. (2003) found that the extension contact had positive impact on the income of women.

Hossain (1999) found a positive significant relationship between family income and influence of agricultural development activities.

Mohanani (1992) stated that in Gambhira collective farming co-operative group member's influence has no significant relationship with the annual income of the women.

Paul (1989) observed that there was a positive significant relationship between the income of the women and their opinion on the influence of result demonstration.

2.3.6 Extension contact and Influence

Dercon et al. (2009) found that the contact had no significant relationship with contribution of agricultural extension to productivity.

Uddin (2006) found had no significant relationship between the contact of the beneficiaries and influence of world vision agricultural development activities.

Suryanarayana et al. (1990) revealed that age group of contact women has a significant negative relationship with the influence of contact women in influencing the adoption behavior of other fellow women.

Haq and *Usami*(2003) found that the extension contact had a positive impact on the income of women.

2.3.7 Training and Influence

Uddin (2006) conducted a study on influence of agricultural activities of world vision in gazipur and found that had a significant positive relationship between training and influence of agricultural activities.

2.3.8 Knowledge and Influence

No previous review of literature was found in relation with knowledge and influence.

2.3.9 Time spent and Influence

No previous review of literature was found in relation with time spent and influence.

2.4 The Conceptual Framework of the Study

In scientific research, selection and measurement of variables constitute an important task. The conceptual framework of Rosenberg and Hoveland (1960) was kept in mind while framing the structural arrangement for the dependent and independent variables. The present study tried to focus two concepts: the first, the selected characteristics of rural women and the second, influence of homestead vegetable cultivation. In view of prime findings, the researcher constructed a conceptual framework of the study which is presented in Figure 2.1.

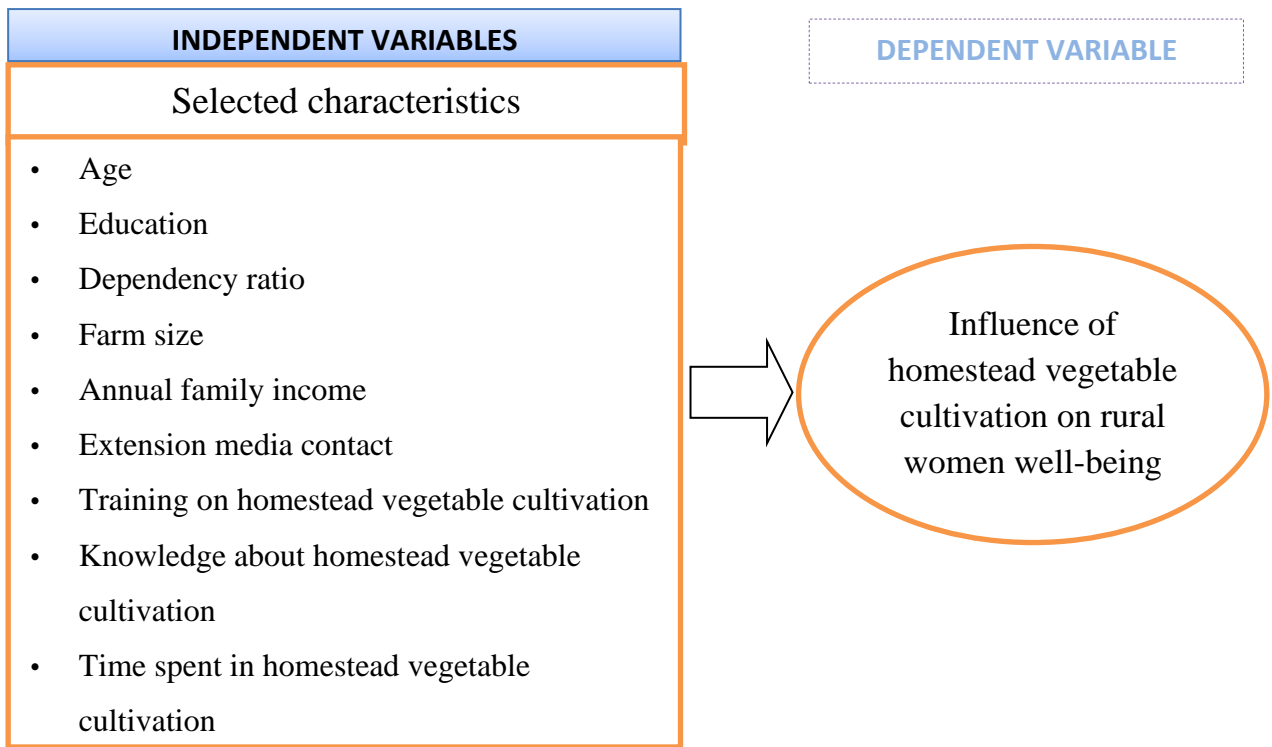


Figure 2.1 The Conceptual Framework of the Study

CHAPTER III

MATERIALS AND METHODS

The materials and methods used in conducting any research play a critically important role and deserve careful consideration by the researcher. The researcher was very much careful for using proper methods in all aspects of the investigation. Methods and procedures followed in conducting the study have been discussed in this chapter. Further, the chapter includes the operational format and comparative reflection of some variables used in the study. Also, statistical methods and their use have been mentioned in this chapter.

3.1 Locale of this Study

The study was conducted at four villages of Guarekha union of Nesarabad (Swarupkati) upazila under Pirojpur district. Out of nine villages, four villages in Guarekha union were selected randomly. The selected villages were Bishal, Batnatala, Gabbari and Rudrapur. The study area is situated 8 km away from Nesarabad (swarupkati) upazila. There are seven primary schools, two high schools and a college in the study area. There are also a post office and a big market in the study area. There are eleven mosques, two madrashas and five temple in this study area. Various NGOs are working on homestead development activities at the study area. A map of Pirojpur district showing Nesarabad (swarupkati) upazila is presented in Figure 3.1 and a map of Nesarabad (swarupkati) upazila showing the study area is presented in Figure 3.2.

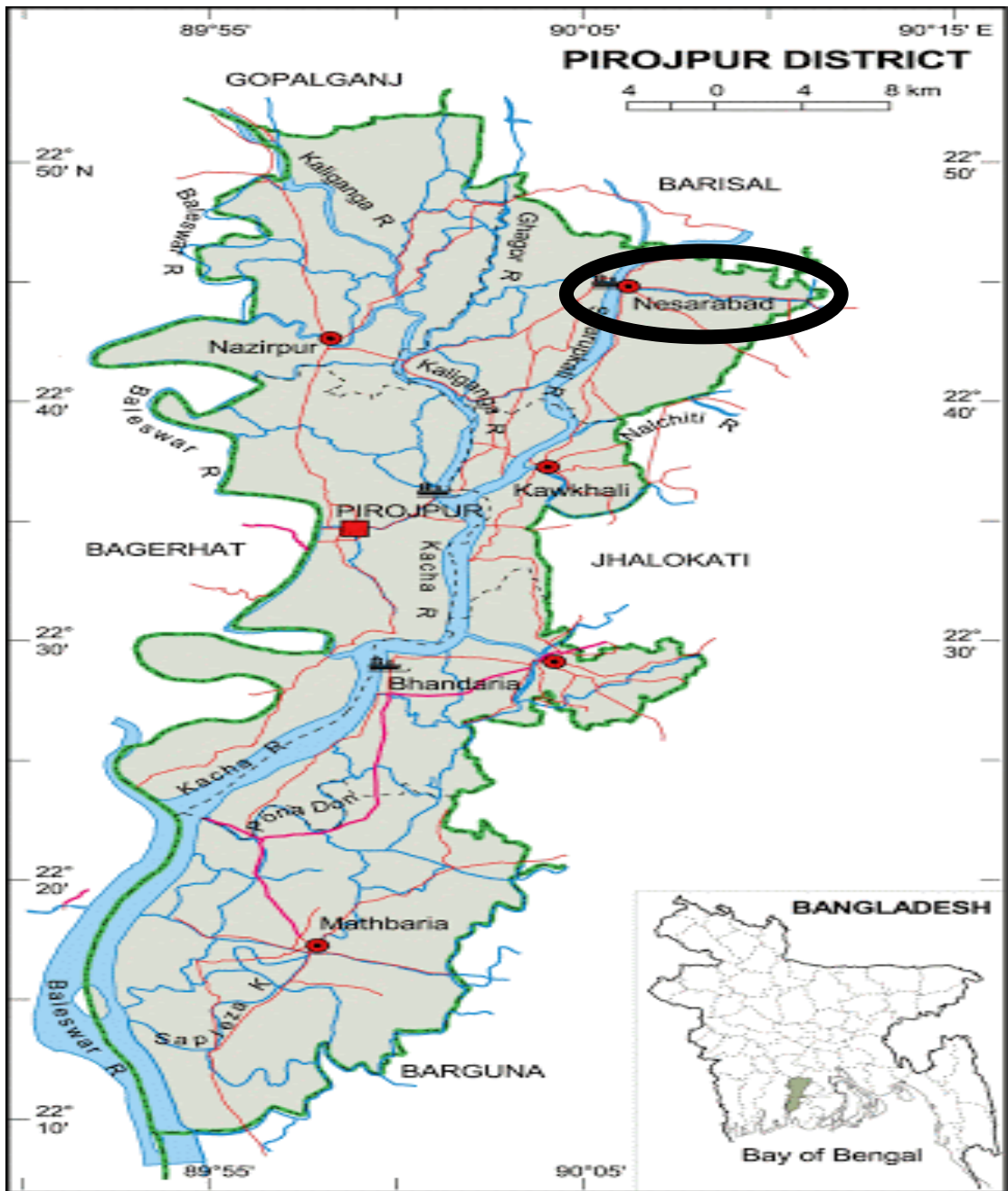


Figure 3.1: A map of Pirojpur district showing Nesarabad(Swarupkati) upazila

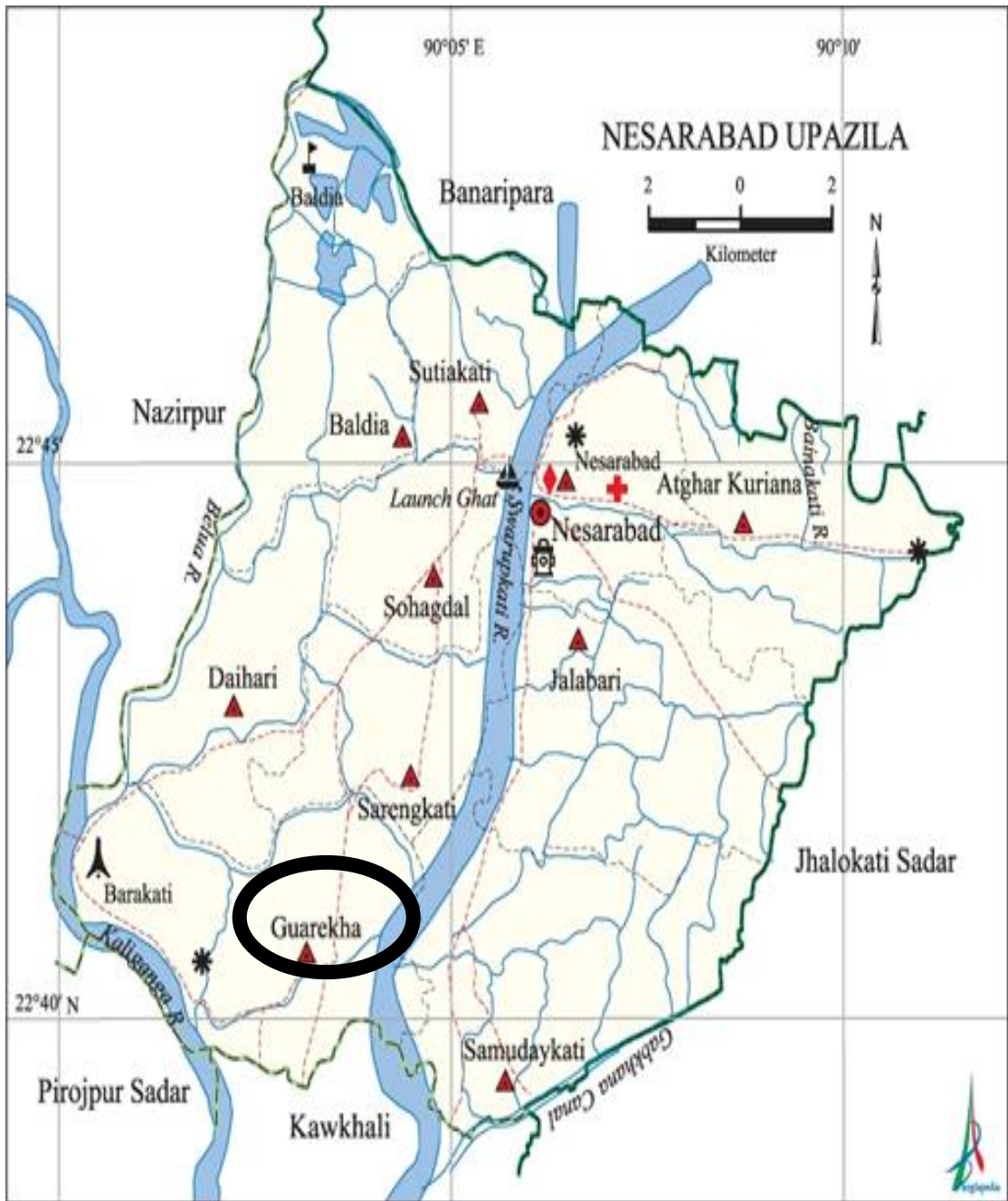


Figure 3.2: A map of Nesarabad(Swarupkati) upazila showing the study area

3.2 Population and Sample

The rural women of the selected four villages were considered as the population of the study. A separate list of respondents who are currently cultivating vegetable in their homestead area was prepared with the help of NGO personnel and local influential members. The number of rural women of the selected four villages was 1027 which constituted the population of the study. About 10 percent of the total population was selected proportionally from the selected villages as the sample. Thus, the total sample size stood at 103. Moreover, a reserved list of 10 rural women was prepared for use when the rural women under sample were not available during data collection. The distribution of the rural women included in the population, sample and those in the reserve list appears in Table 3.1.

Table 3.1 Distribution of Population, Sample Size and Reserve List of Respondents in Four Selected Villages of Nesarabad Upazila

Sl. No.	Name of the Villages	Total number of the rural women	Sample Size	Number of rural women in the reserved list
1.	Bishal	275	28	3
2.	Batnataala	247	25	2
3.	Gabbari	262	26	2
4.	Rudrapur	243	24	3
Total		1027	103	10

3.3 Variables of the Study

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 hypothesis contains at least two elements as independent variable and dependent variable. An independent variable is the factor which is manipulated by the experimenter to ascertain its relationship to an observed phenomenon. A dependent variable is the factor which appears, disappears or varies as the experimenter introduces, removes or varies the independent variable (Townsend, 1953). The dependent variable of the study is "Influence of homestead vegetable cultivation on rural women well-being" and independent variables were:

age, level of education, dependency ratio, farm size, annual family income, extension media contact, training on homestead vegetable cultivation, knowledge about homestead vegetable cultivation, time spent in homestead vegetable cultivation. In order to conduct a study in accordance with the objectives it was necessary to measure the variables. The procedures of measuring the variables have been described below:

3.4 Measurement of Variables

In order to conduct a study in accordance with the objectives it was necessary to measure the variables. The procedures of measuring the variables have been described below:

3.4.1 Measurement of independent variables

The independent variables of this study were nine selected characteristics of women of Nesarabad (Swarupkati) upazila under Pirojpur district as mentioned earlier. Procedure for measuring independent variables has been discussed below:

3.4.1.1 Age

The age of a respondent was measured in terms of actual years from her birth to the time of interview on the basis of her response. A unit score was assigned for each year of one's age (Akter, 2003).

3.4.1.2 Level of education

Education of rural women was measured by the number of years of successful schooling. A score of one was assigned for each year of formal schooling completed by a respondent (Sharmin, 2005). For example, if a respondent passed the SSC examination, he was given a score of 10. Besides, a respondent did not know how to read and write her education score was assigned as 0 (zero), a score of 0.5 was given to those respondents who did not know how to read and write but could sign her name only.

3.4.1.3 Dependency ratio

The dependency ratio 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.

3.4.1.4 Farm size

Farm size was measured as the size of her farm on which rural women continued her farming operations during the period of study. It included the area of homestead, land cultivation under her or her family cultivation as well as those obtained from others as borga, lease and also given to others as borga.

The area was measured in terms of hectare. The farm size of a respondent was measured by using the following formula:

$$FS = A + B + 1/2(C + D) + E$$

Were,

FS = Farm size

A= Homestead area (including pond & garden)

B= Land under own cultivation

C= Land given to others on borga

D= Land taken from others on borga

E= Land taken from others on lease

Actual size of the farm was considered as the score of the farm size. For example, if a respondent had 0.05 ha of land then his score was 0.05. The data were first recorded in local unit and then converted to hectare.

3.4.1.5 Annual family income

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. For example, if a respondent mentioned that her annual family income is Tk. 1,75,000 then her annual family income score would be 175.

3.4.1.6 Extension media contact

It was defined as one's extent of exposure to different communication media related to farming activities. Agricultural extension media contact of a women was measured by computing agricultural extension media contact score on the basis of their nature of contact with eight agricultural extension media. Each women was asked to indicate his nature of contact with five alternative responses, regularly, often, occasionally, rarely and not at all basis to each of the eight media and score of 4, 3, 2, 1 and 0 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. Agricultural extension media contact of the women was measured by adding the scores of eight selected source of information.

3.4.1.7 Training on homestead vegetable cultivation

Training on homestead vegetable cultivation score of a respondent was measured by the number of days that a respondent had received training on homestead vegetable cultivation in her entire life. It was indicated by the total number of days of receiving agricultural training by a respondent under different training programs. If a respondent did not participate any training courses her score was 0 and if a respondent attained 1 course with 5 days duration her assigned score was 5. If a respondent attained 2 courses with 5 days duration her assigned score was 10.

3.4.1.8 Knowledge about homestead cultivation

Knowledge of the respondents was measured by asking 10 (ten) selected questions and random (1-3) score was assigned to each of the questions. Full marks were given to appropriate answer and partial score was given for partially correct answer whereas 0 (zero) score was given to wrong or no answer. Knowledge about homestead cultivation score could range from 0 to 20 where 0 indicated no knowledge to 20 indicated high knowledge.

3.4.1.9 Time spent in homestead vegetables cultivation

It referred to how much time spent in homestead vegetable cultivation. A rural Women generally work in the homestead vegetable cultivation. Some women do work

in the homestead area 1 or 2 hours and others work in the homestead area 5 to 6 hours per day.

3.5 Measurement of Dependent Variable

Influence of homestead vegetable cultivation on rural women well-being was the dependent variable of the study. After through consultation with the relevant expert and searching literatures, the following items were collected to measure the influence of homestead vegetable cultivation:

- Homestead cultivation helps to ensure balanced nutrition
- Increase vitamin and mineral uptake through vegetable consumption
- Help to reduce health disease
- Helping hand for ensuring food security
- Influence to increase family farm income
- Passing time in effective work
- Decrease vegetable purchasing cost
- Increase beauties of the home

The women were requested to extent their opinion regarding influence of these statements for improving their well-being. They provided answer in four point scale such as not at all influence, low influence, medium and high influence. The responses were scored as following:

<u>Nature of influence</u>	<u>Score assigned</u>
Not at all influence	0
Low influence	1
Medium influence	2
High influence	3

As 8 statements were selected for the study, influence score of a respondent could range from 0 to 24, while 0 indicating no influence and 24 indicating the highest influence score.

3.6 Instrument for Data Collection

Data were collected using a structured interview schedule. Both open and closed form questions were included in the schedule based on the measurement procedures discussed earlier in section 3.5.

Before finalization, the interview schedule was pre-tested with 10 rural women of the study area. On the basis of the pre-test experiences necessary corrections, modifications and alterations were made before finalizing the interview schedule for final data collection. During modification of the schedule, valuable suggestions were received from the research supervisor and relevant experts. The interview schedule was then printed in its final form and multiplied. A copy of interview schedule in English version was placed in Appendix A.

3.7 Collection of Data

Data were collected personally by the researcher himself through face-to-face interview. To familiarize with the study area and for getting local support, the researcher took help from the local leaders and the field staffs of Upazila Agriculture Office. The researcher made all possible efforts to explain the purpose of the study to the women. Report was established with the women prior to interview and the objectives were clearly explained by using local language as far as possible. Data were collected during the period of 3rd August, 2020 to 27th November, 2020.

3.8 Data Processing

After completion of field survey, all the data were coded, compiled and tabulated according to the objectives of the study. Local units were converted into standard units. All the individual responses to questions of the interview schedule were transferred in to a master sheet to facilitate tabulation, categorization and organization. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form.

3.9 Statement of Hypothesis

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.

3.9.1 Research Hypothesis

Research hypothesis states a possible contribution with the variables being studied or a difference between experimental treatments that the researcher expects to emerge. The following research hypothesis was put forward to know the relationships between each of the nine selected characteristics of the women and their influence of homestead vegetable cultivation. “Each of the nine selected characteristics of the rural women will have significant contribution with their influence of homestead vegetable cultivation.”

3.9.2 Null Hypothesis

A null hypothesis states that there is no contribution with the concerned variables. The following null hypothesis was undertaken for the present study “There is no contribution of the selected characteristics of rural women with their influence of homestead vegetable cultivation.” “The selected characteristics were age, level of education, dependency ratio, farm size, annual family income, extension media contact, training on homestead vegetable cultivation, knowledge about homestead vegetable cultivation, time spent in homestead vegetable cultivation.

3.10 Statistical Analysis

The data were analyzed in accordance with the objectives of the study. The statistical measures such as range, means, standard deviation, number and percentage distribution were used to describe the variables. Regression analysis model (β) was used in order to explore the contribution of the selected characteristics of the respondents with influence of homestead vegetable cultivation. Five percent (0.05) level of probability was the basis for rejecting any null hypothesis throughout the study. The SPSS computer package was used to perform all these processes.

CHAPTER IV

RESULTS AND DISCUSSION

The findings of the study and logical interpretations of the results have been presented in this chapter. Findings were recorded in accordance with the objective of the study. This chapter has been described in three sections. The first section deals with the selected characteristics of the respondents, while the second section deals with their extent of influence of homestead vegetable cultivation have been discussed. In the third section, the contribution of selected characteristics of respondents with their influence of homestead vegetable cultivation has been discussed.

4.1 Selected Characteristics of the Rural Women

Nine characteristics of the respondents were selected to find out their contribution with their influence of homestead vegetable cultivation. The selected characteristics included age, level of education, dependency ratio, farm size, annual family income, extension media contact, training on homestead vegetable cultivation, knowledge about homestead vegetable cultivation, time spent in homestead vegetable cultivation. These characteristics of the rural women are described in this section. A summary profile of the characteristics of rural women (independent variables) is shown in Table 4.1.

Table 4.1 The salient features of the selected characteristics of the women

Characteristics	Measuring Unit	Range		Mean	SD
		possible	observed		
Age	Years	-	23-78	50.75	13.03
Level of education	Year of schooling	-	00-18	7.73	4.75
Dependency ratio	Score	-	0-300	50.22	45.31
Farm size	Hectare	-	.03-3.47	0.85	0.84
Annual family income	("000" Tk.)	-	51-582	239.42	126.57
Extension media contact	Score	0-32	4-25	13.69	4.09
Training on homestead vegetable cultivation	(hrs/days)	-	0-15	3.9	2.75
Knowledge about homestead vegetable cultivation	Score	0-20	7-16	12.60	1.50
Time spent in homestead vegetable cultivation	Score	-	1-6	3.14	1.42

4.1.1 Age

The age of the rural women ranged from 23 to 78 years, with a mean with 50.75 years and the standard deviation was 13.03. On the basis of their age, the rural women were classified into three categories: “young aged” (upto 35), “middle aged” (36- 55) and “old aged” (above 55). The distribution of the rural women according to their age is shown in Table 4.2.

Table 4.2 Distribution of the women according to their age

Categories	Women		Mean	SD
	Number	Percent		
Young aged (upto 35)	17	16.50	50.75	13.03
Middle-aged (36-55)	33	32.04		
Old aged (above 55)	53	51.46		
Total	103	100		

Data presented in Table 4.2 indicated that the highest proportion (51.46 percent) of the respondents was the old aged category compared to 32.04 percent middle aged and 16.50 percent young aged category. It was found that old aged respondents are more interested in participation in homestead vegetable cultivation. The extension agents can make use of these views and opinions in designing their extension activities.

4.1.2 Education

The education score of the rural women ranged from 0-18, with a mean of 7.73 and standard deviation 4.75. Based on their education scores, the rural women were classified into four categories namely illiterate (0-0.5), primary education (1-5), secondary education (6-10) and above secondary (above 10). The distribution of the rural women according to their education is shown in Table 4.3.

Table 4.3 Distribution of the women according to their level of education

Categories	Women		Mean	SD
	Number	Percent		
Illiterate (0-0.5)	21	20.38	7.73	4.75
Primary level (1-5)	9	8.74		
Secondary level (6-10)	54	52.43		
Above secondary level (above 10)	19	18.45		
Total	103	100		

Data presented in Table 4.3 shows that the highest proportion (52.43 percent) of the women belonged to the secondary education category compared to 8.74 percent and 18.45 percent of the rural women belonged to primary level and above secondary level education respectively. Rest 20.38 percent were illiterate. The findings indicated that a large proportion of (61.17 percent) the rural women were primary level to secondary level.

4.1.3 Dependency ratio

Dependency ratio of the rural women ranged from 0-300, with a mean of 50.22 and standard deviation 45.31. Based on their dependency ratio scores, the rural women were classified into four categories namely No dependency (0), Low dependency (1-100), medium dependency (101-200) and large dependency (above 200). The distribution of the rural women according to their dependency ratio is shown in Table 4.4.

Table 4.4 Distribution of the women according to their dependency ratio

Categories	Women		Mean	S D
	Number	Percent		
No dependency (0)	1	0.97	50.22	45.31
Low dependency (1-100)	98	95.15		
Medium dependency (101-200)	2	1.94		
Large dependency (above 200)	2	1.94		
Total	103	100		

Data presented in Table 4.4 shows that the highest proportion (95.15 percent) of the women belonged to the low dependency (1-100) category compared to 1.94 percent, 1.94 percent and 0.97 percent of the rural women belonged to medium dependency (101-200), large dependency (above 200) and no dependency (0) respectively. Women with low dependency spent more time in homestead vegetable cultivation compared to other categories.

4.1.4 Farm size

Farm size of the rural women ranged from 0.03 to 3.47 hectares and the mean was 0.85 hectares with standard deviation of 0.84. According to the farm size of the rural women, they were classified into four categories as suggested by DAE (1999) “Marginal (upto 0.2)”, “Small (0.21-.99)”, “Medium (1.00-2.99)” and “Large (3 ha and above)”. The distribution of the rural women according to their farm size is shown in Table 4.5.

Table 4.5 Distribution of the women according to their farm size

Categories	Women		Mean	SD
	Number	Percent		
Marginal farm (upto 0.2 ha)	19	18.45	0.85	0.84
Small farm (0.21-.99 ha)	66	64.08		
Medium farm (1.00-2.99 ha)	17	16.50		
Large farm (3 ha and above)	1	0.97		
Total	103	100		

The Table 4.5 shows that highest proportion of the women belongs to small farm size category (64.08 percent) compared to 18.45 percent of them having marginal farm size, 16.50 percent had medium farm size and only 0.97 percent of them having large farm size.

4.1.5 Annual family income

Family income of the respondents ranged from 51 to 582 thousand taka with a mean of 239.42 and standard deviation of 126.57. Based on their family income, the respondents were classified into three categories: low income (upto 150),

medium income (151 - 300) and high income (above 300) which are shown in Table 4.6.

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

Categories	Women		Mean	SD
	Number	Percent		
Low income (Upto 150 thousand)	15	14.56	239.42	126.57
Medium income (151-300 thousand)	72	69.90		
High income (above 300 thousand)	16	15.54		
Total	103	100		

Data from Table 4.6 reveals that the highest proportion of the respondent (69.90 percent) had medium income while 14.56 percent had low income and only 15.54 percent had high income. In fact, the overwhelming majority of the respondent (85.44 percent) women of the study area constituted medium to high income categories.

4.1.6 Extension media contact

Extension contact scores of the respondent rural women were computed on the basis of their extent of contact of 8 sources of Media exposure. The observed media exposure scores of the rural women ranged from 4 to 25 against the possible range from 0 to 32, the mean and standard deviation were 13.69 and 4.09 respectively. According to this score, the rural women were classified into three categories: “low” (upto 11), “medium” (12-23) and “high” (above 23). The distribution of the rural women according to their extension contact is shown in Table 4.7

Table 4.7 Distribution of the women according to their media contact

Categories (Scores)	Women		Mean	SD
	Number	Percent		
Low (up to 11)	12	11.65	13.69	4.09
Medium (12-23)	74	71.84		
High (above 23)	17	16.51		
Total	103	100		

Data presented in Table 4.7 indicated that the highest proportion (71.84 percent) of

the respondent women of the study area had medium media exposure compared to 16.51 percent of the respondents had high media contact. Only 11.65 percent of the respondent women of the study area had low media contact. Media contact is a very effective and powerful source of receiving information about various new and modern technologies.

4.1.7 Training on homestead vegetable cultivation

The observed training exposure score of the rural women ranged from 0 to 15 with a mean of 3.9 and standard deviation of 2.75. Based on the training exposure scores, the rural women were classified into three categories: “low training” (upto 5), “medium training” (6-10) and high training (above 10). The distribution of the rural women according to their agricultural training score is presented in Table 4.8.

Table 4.8 Distribution of the women according to their training

Categories (Scores)	Women		Mean	SD
	Number	Percent		
Low (upto 5)	92	89.32	3.90	2.75
Medium (6-10)	9	8.74		
High (above 10)	2	1.94		
Total	103	100		

Data contained in Table 4.8 indicated that the highest proportion (89.32 percent) of the respondents was having low training on homestead vegetable cultivation compared to 8.74 percent of them having medium training. Only 1.94 percent had high training. Training increases knowledge and skills of the rural women in a specific subject matter area. Individuals who gain medium training are likely to be more competent in performing in different activities. But the fact that rural women who received no training, need attention of the authorities of extension services (GOs and NGOs) in the country. Providing adequate training on appropriate subject matter is likely to increase the knowledge of the rural women.

4.1.8 Knowledge about homestead vegetable cultivation

Knowledge on homestead vegetable cultivation score of the rural women was computed on the basis of their knowledge about vegetable cultivation with 10

questions. Their score ranged from 7 to 16 against the possible range from 0 to 20. The average was 12.60 and standard deviation was 1.50. On the basis of knowledge of homestead vegetables cultivation scores, the rural women were categorized into three categories such as low knowledge (upto 7), medium knowledge (8-14) and high knowledge (15-20). Table 4.9 represents the distribution of rural women according to their knowledge of homestead vegetable cultivation.

Table 4.9 Distribution of women according to their knowledge

Categories	Women		Mean	SD
	Number	Percent		
Low knowledge (upto 7)	16	15.53	12.60	1.50
Medium knowledge (8-14)	79	76.70		
High knowledge (15-20)	8	7.77		
Total	103	100		

Data presented in the Table 4.9 revealed that the majority (76.70 percent) of the women had medium knowledge regarding vegetable cultivation compared to 7.77 percent had high knowledge of homestead vegetables cultivation and 15.53 percent of the respondent women had low vegetable cultivation knowledge. The data also reveals that majority (92.23 percent) of the rural women had medium to low knowledge of homestead vegetable cultivation. It was remarkable that the rural women of the study area were very conscious about homestead vegetable cultivation.

4.1.9 Time spent in homestead vegetable cultivation

The observed time spent in homestead vegetable cultivation score of the respondents ranged from 1 to 6 against the possible range from 0 to 6 with a mean of 3.14 and the standard deviation of 1.42. On the basis of time spent in homestead vegetable cultivation they were classified into three categories: low (up to 2), medium (3-4) and high (above 4). The distribution of the rural women according to their time spent in homestead vegetable cultivation is shown in Table 4.10.

Table 4.10 Distribution of the women according to their time spent

Categories	Women		Mean	SD
	Number	Percent		
Little time spent (upto 2)	33	32.03	3.14	1.42
Medium time spent (3-4)	32	31.08		
Long time spent (above 4)	38	36.89		
Total	103	100		

Data presented in Table 4.10 indicated that the highest (36.89 percent) of the respondents were having long time spent compared to 31.08 percent of them having medium time spent and 32.03 percent having little time spent. Data also revealed that majority (67.97 percent) of the respondents had medium to long time spent in homestead vegetable cultivation.

4.2 Influence of homestead vegetable cultivation

The influence scores of the rural women in homestead vegetable cultivation ranged from 10-20 against possible range of 0-24 with a mean of 15.04 and standard deviation of 2.11. On the basis of influence scores, the rural women were classified into three categories as low influence (upto 8), medium influence (9-16) and high influence (17-24) and shown in Table 4.11.

Table 4.11 Distribution of the respondents according to their influence

Categories (Scores)	Women		Mean	SD
	Number	Percent		
Low influence (upto 8)	27	26.21	15.04	2.11
Medium influence (9-16)	66	64.08		
High influence (17-24)	10	9.71		
Total	103	100		

Data presented in Table 4.11 shows that the highest percentage (64.08 percent) of the rural women had medium influence of homestead cultivation compared to 26.21 percent of low influence and only 9.71 percent of the rural women had high influence.

4.3 Contribution of the selected characteristics of the respondents to their influence of homestead vegetable cultivation

In order to estimate the influence of homestead vegetable cultivation, the multiple regression analysis was used which is shown in the Table 4.12

Table 4.12 Regression Coefficients of the contributing variables related to their influence of homestead vegetable cultivation on rural women well-being

Dependent variable	Independent variable	β	ρ	R^2	Adj. R^2	F
Influence of homestead vegetable cultivation on rural women well-being	Age	0.015	0.861 ^{NS}	0.436	0.382	7.991
	Level of education	0.232	0.022*			
	Dependency ratio	0.108	0.180 ^{NS}			
	Farm size	0.031	0.770 ^{NS}			
	Annual family income	0.037	0.715 ^{NS}			
	Extension media contact	0.254	0.008**			
	Training on homestead vegetable cultivation	0.180	0.047*			
	Knowledge about homestead vegetable cultivation	0.198	0.032*			
	Time spent in homestead vegetable cultivation	0.059	0.456 ^{NS}			

** Significant at $p < 0.01$; *Significant at $p < 0.05$ and ^{NS} Non significant

Table 4.12 shows that there is a significant contribution of the respondents; education, extension media contact, training on homestead vegetable cultivation, and knowledge about homestead vegetable cultivation. Of these, extension media contact was the

most important contributing factors (significant at the 1% level) and education, training on homestead vegetable cultivation and knowledge about homestead vegetable cultivation were the important contributing factors (significant at the 5% level) while coefficients of other selected variables don't have any contribution with their influence of homestead vegetable cultivation on rural women well-being.

The value of R^2 is a measure of how of the variability in the dependent variable is accounted by the independent variables. So, the value of $R^2 = 0.436$ means that independent variables account for 43% of the variation in influence of homestead vegetable cultivation on rural women well-being. The F ratio is 7.991 which is highly significant ($p < 0.000$).

However, each predictor may explain some of the variance in respondent's influence of homestead vegetable cultivation on rural women well-being simply by chance. The adjusted R^2 value penalizes the addition of extraneous predictors in the model, but values 0.436 is still show that variance is influence of homestead vegetable cultivation on rural women well-being. It can be attributed to the predictor variables rather than by chance the suitable model (Table 4.12). In summary, the models suggest that the respective authority should be consider the women education, extension media contact, training on homestead vegetable cultivation and knowledge about homestead vegetable cultivation and in this connection some predictive importance has been discussed below:

4.3.1 Significant contribution of extension media contact to their influence of homestead vegetable cultivation

From the multiple regressions, it was concluded that the contribution of extension media contact to their influence of homestead vegetable cultivation was measured by the testing the following null hypothesis;

“There is no contribution of extension media contact to their influence of homestead vegetable cultivation”.

The following observations were made on the basis of the value of the concerned

variable of the study under consideration.

- a. The contribution of extension media contact was significant at 1% level (0.008).
- b. So, the null hypothesis could be rejected.
- c. The β -value of extension media contact was (0.254). So, it can be stated that as extension media contact increased by one unit, influence of homestead vegetable cultivation increased by 0.254 units. Considering the effects of all other predictors are held constant.

From the multiple regressions, it was concluded that extension media contact of the women had first highest positive contribution to their influence of homestead vegetable cultivation. The finding is supported by Suryanarayana et al.(1990).The result implies that with the increase of extension media contact of the women will increase their influence of homestead vegetable cultivation.

4.3.2 Significant contribution of education to their influence of homestead vegetable cultivation

The contribution of education to their influence of homestead vegetable cultivation was measured by the testing the following null hypothesis;

“There is no contribution of education to their influence of homestead vegetable cultivation”.

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the education was at 5% significance level (0.022).
- b. So, the null hypothesis could be rejected.
- c. The β -value of level education was (0.232). So, it can be stated that as education increased by one unit, influence of homestead vegetable cultivation increased by 0.247 units. Considering the effects of all other predictors are held constant.

Based on the above finding, it can be said that women have more education increased the women influence of homestead vegetable cultivation. This implies that with the increase of education of the women will increase their influence of homestead vegetable cultivation. Give support from other the result is similar with the research study of Kim and lee (2017).

4.3.3 Significant contribution of knowledge about homestead vegetable cultivation to their influence of homestead vegetable cultivation

From the multiple regression, it was concluded that the contribution of knowledge about homestead vegetable cultivation to their influence of homestead vegetable cultivation was measured by the testing the following null hypothesis;

“There is no contribution of knowledge about homestead vegetable cultivation to their influence of homestead vegetable cultivation”.

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of knowledge about homestead vegetable cultivation was significant at 5% level (0.032).
- b. So, the null hypothesis could be rejected.
- c. The β -value of knowledge about homestead vegetable cultivation was (0.198). So, it can be stated that as knowledge about homestead vegetable cultivation increased by one unit, women influence of homestead vegetable cultivation increased by 0.198 units. Considering the effects of all other predictors are held constant.

From the multiple regressions, it was concluded that knowledge about homestead vegetable cultivation of the women had highest positive contribution to their influence of homestead vegetable cultivation. This implies that with the increase of knowledge about homestead vegetable cultivation of the women will increase their influence of homestead vegetable cultivation.

4.3.4 Significant contribution of training on homestead vegetable cultivation to their influence of homestead vegetable cultivation

From the multiple regression, it was concluded that the contribution of training on homestead vegetable cultivation to their influence of homestead vegetable cultivation was measured by the testing the following null hypothesis;

“There is no contribution of training on homestead vegetable cultivation to their influence of homestead vegetable cultivation”.

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the training on homestead vegetable cultivation was significant at 5% level (0.047).
- b. So, the null hypothesis could be rejected.
- c. The β -value of training on pest control was (0.180). So, it can be stated that as training on pest control increased by one unit, women influence of homestead vegetable cultivation increased by 0.180 units. Considering the effects of all other predictors are held constant.

Multiple regressions showed that training on homestead vegetable cultivation was positive contribution to their influence of homestead vegetable cultivation. The finding is supported by Uddin (2006). The result implies that with the increase of training on homestead vegetable cultivation of the women will also increase their influence of homestead vegetable cultivation. Training on homestead vegetable cultivation helps women to make favorable possess as which ultimately help them to take adaptation.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

5.1.1 Selected characteristics of the rural women

Age: The highest proportion (51.46 percent) of the respondent women was the old aged category compared to 32.04 percent middle aged and 16.50 percent young aged category.

Education: The highest proportion (52.43 percent) of the respondent women belonged to the secondary education category compared to 8.74 percent and 18.45 percent of the rural women belonged to primary level and above secondary level education respectively. Rest 20.38 percent were illiterate.

Dependency ratio: The highest proportion (95.15 percent) of the respondent women belonged to the low dependency (1-100) category compared to 1.94 percent, 1.94 percent and 0.97 percent of the rural women belonged to medium dependency (101-200), large dependency (above 200) and no dependency (0) respectively.

Farm size: The highest proportion of the respondent women belongs to small farm size category (64.08 percent) compared to 18.45 percent of them having marginal farm size, 16.50 percent had medium farm size and only 0.97 percent of them having large farm size.

Annual family income: The highest proportion of the respondent women (69.90 percent) had medium income while 14.56 percent had low income and only 15.54 percent had high income.

Extension media contact: The highest proportion (71.84 percent) of the respondent women of the study area had medium media exposure compared to 16.51 percent of the respondents had high media contact. Only 11.65 percent of the respondent women of the study area had low media contact.

Training on homestead vegetable cultivation: The highest proportion (89.32 percent) of the respondent women was having low training on homestead vegetable cultivation compared to 8.74 percent of them having medium training. Only 1.94 percent had high training.

Knowledge about homestead vegetable cultivation: The majority (76.70 percent) of the respondent women had medium knowledge regarding vegetable cultivation compared to 7.77 percent had high knowledge about homestead vegetables cultivation and 15.53 percent of the respondent women had low vegetable cultivation knowledge.

Time spent in homestead vegetable cultivation: The highest (36.89 percent) of the respondent women were having long time spent compared to 31.08 percent of them having medium time spent and 32.03 percent having little time spent.

5.1.2 Influence of homestead vegetable cultivation

The influence scores of the rural women in homestead vegetable cultivation ranged from 10-20 against possible range of 0-24 with a mean of 15.04 and standard deviation of 2.11. The highest percentage (64.08%) of the rural women had medium influence of homestead cultivation compared to 26.21 percent of low influence and only 9.71 percent of the rural women had high influence.

5.1.3 Factors related to their influence of homestead vegetable cultivation

There is a significant contribution of respondents' education, extension media contact, training on homestead vegetable cultivation and knowledge about homestead vegetable cultivation and the rest five characteristics namely: age, dependency ratio, farm size, annual family income and time spent in homestead vegetable cultivation had no significant contribution with their influence of homestead vegetable cultivation.

5.2 Conclusion

A conclusion may be looked upon as an inference based on the findings of empirical study, pertinent facts and unbiased judgments. On the basis of the findings of the study the logical interpretation of their meanings and other relevant facts are promoted the researcher to draw the following conclusion:

1. The findings indicated that a large proportion (90.29) percent of the rural women opined low to medium influence of homestead vegetable cultivation on their livelihood. It may, therefore, be concluded that proper emphasis should be given on the rural women of all influence categories by the extension workers in order to encourage of homestead vegetable cultivation.
2. The findings of the study indicated that overwhelming majority (83.49) percent of the respondents had medium and low extension media contact for getting necessary agricultural information. Extension contact of the rural women had a significant positive contribution with their influence of homestead vegetable cultivation. Hence, it may be concluded that extension contacts increase the outlook of the rural women which lead them to adopt new technologies related to homestead vegetable cultivation.
3. The findings indicated that a large proportion (61.17) percent of the rural women were primary level to secondary level of education. Education of the rural women had significant contribution with their influence of homestead vegetable cultivation. According to this result it can be said that high literacy rate as well as higher educational level among the rural women of the study area have much influence in their influence of homestead vegetable cultivation.
- yt
4. The findings indicated that majority (84.47 percent) of the rural women had medium to high knowledge about homestead vegetable cultivation. Moreover Knowledge about homestead vegetable cultivation of the rural women had significant contribution on their influence about homestead vegetable cultivation. Therefore involves of rural women with knowledge gaining program is better for homestead vegetable cultivation.

5. Data indicated that the highest proportion (98.06 percent) of the respondents having low to medium training .Training of the rural women had significant positive contribution with their influence of homestead vegetable cultivation. The rural women having high training gained more knowledge and skill on homestead vegetable cultivation and as a result, they adopt new technologies related to homestead vegetable cultivation very swiftly.

5.3 Recommendations

Based on the findings of the present study, the following recommendations were made:

5.3.1 Recommendations for Policy Implications

Recommendations based on the findings and conclusions of the study are presented below:

- i. Steps should be taken to motivate the rural women in participating homestead vegetable cultivation. Extension workers must be well trained on the newly released vegetable cultivation practices/techniques as well as the running techniques so as to fit them as a credible source of information about the techniques and to make them skilled to implement/ solve any problem of the rural women.
- ii. DAE and other agriculture related organizations should take necessary steps to enhance their extension contact with the rural women. Due to social system and religion, rural women are reluctant to come in contact with male extension worker. So, more women extension worker should be employed to make personal contact along with other enhance group and mass media.
- iii. It may be recommended that arrangements should be made for enhancing the education level of the vegetable cultivators by the concerned authorities through the establishment of night school, adult education and other extension methods as possible.

- iv. DAE and other agriculture related organizations should organize necessary training and skill development program like training on vegetable cultivation, fertilizer application etc. so that the rural women could increase vegetable cultivation in their homestead as well as can increase their family income.
- v. Department of Agricultural Extension (DAE) and concern Non-Government Organizations (NGOs) should lunched program for gaining sustainable homestead vegetable production knowledge as well as to increase the influence of homestead vegetable cultivation .

5.3.2 Recommendations for further study

Short term and sporadic study being conducted in some specific location cannot provide all information for the proper understanding of the rural women towards the participation in homestead vegetable cultivation. Therefore, the following recommendations were made for further study:

- I. The present study was conducted in four selected villages of Pirojpur district. It is strongly felt that study of this nature be replicated in other parts of Bangladesh.
- II. This study investigated the contribution of nine personal and socio- economic characteristics of the rural women with their influence of homestead vegetable cultivation. Therefore, it is recommended that further study should be conducted involving other characteristics in this regard to better interpret the unexplained variations.
- III. Influence of rural women in homestead vegetable cultivation may be determined by using other ways and methods than the current study which may be used in conducting further research.
- IV. The study was conducted on women but male are equally important. So, a similar study may be conducted with male .

BIBLIOGRAPHY

- Abdullah, T. (1986). Homestead Agricultural Production in Bangladesh. ADAB News, 13(5):1-7.
- Ahmed, A. R., Bhuiya, M. A. A., Reza, Z. A. and Hossain, M. Z. (2004). Methods of Statistics. S. Ahmed & Associates, Manikganj-1800.
- Ajayi, S. (1995). Gender Roles in Subsistence Crop Production in Kwara State, Nigeria. Department of Agricultural Extension and Rural Development, University of Ilorin, Nigeria.
- Akanda, W. (1994). Participation of rural women in different farm and non-farm activities in two selected villages of Mymensingh district. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education., Bangladesh Agricultural University, Mymensingh.
- Akhter, A. (1989). Involvement of Women in Homestead Agriculture in Selected Village of Tangail District. M. S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Akter, T. (2003). Participation of Women in Income Generating Activities (IGA) of SUS. M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Azumah, S. B., Samuel, A., Donkoh, & Awuni, A. J. (2018). The perceived influence of agricultural technology transfer methods: Evidence from rice WOMEN in Northern Ghana. Cogent Food & Agriculture, 4(1).
- Bardhan, A. O. (2006). "An Assessment of women's Willingness to Pay for Extension Services Using the Contingent Valuation Method (CVM): The Case of Oyo State, Nigeria." Journal of Agricultural Education and Extension 12 (2): 97–108.

- BBS. (2020). Statistical Year Book of Bangladesh. Bangladesh Bureau of Statistics. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- Bembridge, R. K. (1979). Effective Agricultural Communication Strategy. Need for Efficient Transfer of Technology. *Bangladesh Journal of Extension Education*, I (2): 91-100.
- Chowdhury, N. (2009). Participation of Rural Women in Farm and Non-Farm Activities: An Economic Analysis. M. Sc. Econ. Thesis, Dept. of Agricultural Economics, Bangladesh Agricultural University, Mymensingh.
- Coutts, J., Roberts, K., Frost, F. and Coutts, A. (2005). The Role of Extension in Building Capacity-What Works, and Why. Available at www.fao.org/_sd/exdirect/Exan 0015. htm.
- Dercon, E.D., Erike, A.S. and Eric, O. O. (2009). Effects of education on agricultural productivity of women. Kumasi, Ghana. *International Journal of Development Research* Vol. 4, Issue, 9, pp. 1951-1960.
- Dey, J. (1985). Women in Rice Farming Network: Country Profile in Bangladesh. A paper Presented at the project design workshop on women in rice farming systems. International Rice Research Institute, Manila, Philippines.
- Evenson, R. E and Mwabu, G. (2001). The effect of agricultural extension on farm yields Kenya. *African Deve. Rev.* 13(1):1-23.
- FAO. (2003). Data taken from FAO Website. [http: 1/1/www.FAO.org](http://1/1/www.FAO.org).
- FSRDP. (1990). Farming System Research and Development Project Program Report. Bangladesh Agricultural University, Mymensingh.
- Halim, A. (1987). Intensive Homestead Production Plant in Bangladesh. An unpublished Report of World Bank Consultancy. The World Bank Resident Mission in Dhaka, Bangladesh.

- Halim, A. (1987). Intensive Homestead Production Plant in Bangladesh. An unpublished Report of World Bank Consultancy. The World Bank Resident Mission in Dhaka, Bangladesh.
- Halim, A. B., Nahar, S. and Alam, A. B. M. M. (1994). "Research on Women in Agriculture: The Experience of BAU Farming System and Environment Studies." Paper Presented in the Workshop on Women in Agriculture: The Challenges, BRAC 23-24, March, Dhaka, Bangladesh.
- Haq, A. Z. M. (2004). Effect of extension contact on rice productivity in some selected sites of Gazipur District. *Bangladesh J. of Agric. Res.* 36 (4):723-732.
- Haq, A. Z. M., Ishida, A., Yokoyama, S. and Taniguchi, K. (2003). Outcomes and issues of agricultural extension services in Bangladesh. *J. of Agric. Ext. Res.* 8(17): 17- 22.
- Haq, M. J. and Usami, K. (2008). "Effects of Training on Skill Development of Agricultural Extension Workers in Bangladesh: A Case Study in Four Upazilas Under Kishoreganj District." *Journal of Social Sciences* 4 (1): 21–28. doi:10.3844/jssp.2008.21.28.
- Haque, M. E. (1982). women' Attitude towards Extension Activities of the Department of Agricultural Extension. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Hasan, A. (2002). Agricultural Extension in Southeast Asia (Historical Review). Farming System and Environmental Studies. Bangladesh Agricultural University. Mymensingh, Bangladesh.
- Hasan, K. (2006). Participation in Farming Activities by Conventional and Organic women. M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

- Hossain, M. A. (1985). Munoz in Rice Culture: A Case Study in Bangladesh Village. Paper Presented at the 16th working group meeting of Asia Rice Farming System Network, Bangladesh, 9-13 November.
- Hossain, M. E. (1999). women' Attitude towards Extension Activities of the Department of Agricultural Extension. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Islam, M. S., Islam, M., Abdullah, M. and Yesmin, R. (2014). Rural women's awareness on agricultural extension services. Journal of Agriculture and Veterinary Science. Volume 7, Issue 9 Ver. II (Sep. 2014), PP 54-58.
- Jamilah, S.D., Hunt, W., Birch, C. and William, B. (2010). Agricultural extension: Building capacity and resilience in rural industries and communities. Rural society: Volume 20, Issue 2.
- Kerlinger, F. N. (1973). Foundations of Behavioural Research. 2nd Edn. Delhi: Surjeet Publications.
- Kim, S. and lee, A. V. (2017). Evaluate the influence of the extension programme of Njala University College. Journal of Rural Development: 111 -128.
- Maunder, E. O. (2007). Influence of extension teaching methods in acquiring knowledge, skill and attitude by women women in Osun State. Journal of Applied Sciences Research. Vol.3(4): 282 – 286.
- Mears, M. (1981). Influence of some Aids in Extension Work at a village in Egypt, Unpublished PhD Thesis. Faculty of Agriculture. Ain-Shams University, Cairo, Egypt.
- Mohanan, S. (1992). Extension Education in Community Development, Ministry of Food and Agriculture, Food and Agriculture Organisation.
- Nahar, N. (2008). Relationship of Selected Characteristics of the Farm Women with Usefulness of Agricultural Radio Program and Homestead Farming

- Knowledge M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Paul, R. K. (1989). Influence of Result Demonstration as an Extension Teaching Methods.M.S (Ag. Ext. Ed.).Thesis.Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Rosenberg, M. and Hovland, C. I. (1960). Research on Communication and Attitude Quoted Triandis, H. C. (1971). Attitude and Attitude change New York: John WileyPublisher.
- Sabbir, M. (2016). Influence of krishokerjanala for strengthening agricultural advisory system. M.S. (Ag. Ext. Ed.) Thesis. Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.
- Scharmerhorn, A.S., Gboku, M. L. S and Jibowu, A. A. (1988). Evaluate the influence of the extension programme of Njala University College. Journal of Rural Development: 111 -128.
- Shankaraiah, and Swamy, (2012). Attitude of rural elite WOMEN towards extension activities performed by Upazilla Agricultural Extension personnel of DAE. The Agriculturists.12(1): 96-102 (2014).
- Sharmin, H. (2005). Rural Women's Perception of Benefits of Involvement in Income Generating Activities under a Non-Government Organization.M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Sultana, M.S. (2018). Influence of krishokerjanala for disseminating of agricultural information. M.S. (Ag. Ext. Ed.) Thesis. Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.
- Suryanarayana, M. B., Al-Subaiee, F. S. and Straquadine, G. S. (1990). Role of Agricultural Extension in Sustainable Rural Development in Pakistan.Pub.by Banat University of Agricultural Sciences and Veterinary Medicine, Timisoara, Romania. Lucrari Stiintifice, Serial I, Vol. XI (1). pp 291-308.

- Taslim, A., Nohmi, M., Yasunobu, K. & Ishida, A. (1989). Effect of Agricultural Extension Program on Smallholders' Farm Productivity: Evidence from Three Peasant Associations in the Highlands of Ethiopia. *Journal of Agricultural Science*, 5(8), 163.
- Townsend, J. C. (1953). *Introduction to Experimental Methods*. International Student Edition, New York. McGraw Hill Book Company Inc.
- Uddin, M. A. N. (2006). Influence of world vision agricultural development activities in gazipur. M.S. (Ag. Ext. Ed.) Thesis. Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.
- Uddin, M. M. (2008). Involvement of Rural Women in Home Gardening Practices in SDS Area of Shariatpur District. M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.
- Chowdury, A. R. (2000). Women's Opinion for Participation in Development Activities in A Selected BAUEC Village. M. S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Devi, L. (1983). Role expectation and role performance of rural women in farming activities. *Indian Journal of Extension Education*. 20 (3 & 4): 27-34.
- Islam, M. R. (2002). Involvement of BRAC Trained Women Beneficiaries in Income Generating Activities and Decision Making Role. M. S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Myensingh.
- Nahar, K. (2000). Participation of rural women in homestead agriculture in a selected area of Gazipur district, M.S.(Ag. Ext.Ed.)Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Parveen, S. (1993). Attitude of the rural women towards homestead agricultural production. M. S. (Ag. Ext. Ed.) Thesis, Department of Agricultural

Extension Education, Bangladesh Agricultural University, Mymensingh.

Rao, D. R. (1994). A Qualitative Exploration of some Socio-Economic Issue in South Uddamdi. Matlab, RDP Annual Report: Dhaka, Bangladesh Rural Advancement Committee.

Salauddin, M. (2003). "Involvement of Rural Women in Homestead vegetable cultivation in a selected Area of Ghoraghat Upazila Under Dinajpur District. M. S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, BAU, Mymensingh.

APPENDIX A
DEPARTMENT OF AGRICULTURAL EXTENSION & INFORMATION
SYSTEM
SHER-E-BANGLA AGRICULTURAL UNIVERSITY
Dhaka-1207
AN INTERVIEW SCHEDULE
on
INFLUENCE OF HOMESTEAD VEGETABLE CULTIVATION ON
RURAL WOMEN WELL-BEING

Respondents No:..... Mobile No:.....

Name of the respondent :.....

Village:..... Upazila:.....

Union:..... District:.....

Please answer the following questions. Your answer will be used for research purpose.

1. Age:

How old are you? years.

2. Level of Education:

Please mention your level of education giving tick (☐) mark against the appropriate response

- a) I cannot read and write (.....)
- b) I can sign only (.....)
- c) I studied up to class (.....)

3. Dependency ratio:

Please mention the following information:

No of family members age (0 to 14) =

No of family members age >65 =

No of family members age (15 to 64) =

$$\text{Dependency ratio} = \frac{\text{Age}(0 \text{ to } 14) + \text{Age} > 65}{\text{Age } 15 \text{ to } 64} \times 100$$

4. Farm Size:

Please mention the area of your land according to use:

Sl No.	Type of land Use	Area of land	
		Local Unit (Decimal/Bigha)	Hectare (ha)
A	Homestead area (including pond & garden)		
B	Own land under own cultivation		
C	Land given to others on barga		
D	Land taken from others on barga		
E	Land taken from others on lease		
Total Farm Size (FS) = A+B+1/2(C+D)+E			

5. Annual family income:

How much money you received from the following sources:

A. Income from agricultural sources

Sl No.	Income sources	Production (kg)	Value per unit (Tk)	Total income (Tk)
1	Rice			
2	Potato			
3	Tomato			
4	Brinjal			
5	Pumkin			
6	Pulse crops			
7	Livestock			
8	Poultry			
9	Fisheries			
10	Others			
Sub total				

B. Income from non-agricultural sources

Sl. No.	Sources of income	Total value (Tk)
1	Service	
2	Business	
3	Day labour	
4	Others (specify)	
Sub total (B)		

Total income = A +B =.....Tk.

6. Extension media contact:

Please indicate the nature of your contact with the following media:

Sl. No.	Media/ Sources	Nature of visit				
		Regularly (4)	Often (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1.	Agriculture extension officer					
2.	SAAO					
3.	Dealers (fertilizer, pesticide)					
4.	Radio					
5.	Television					
6.	Neighbours/Friends					
7.	Model WOMEN					
8.	Newspaper					

7. Training on homestead vegetable cultivation:

Have you received any training on Homestead cultivation? ()

Yes / () No

If yes, please give the following information:

Sl. No.	Name of training	Duration	Sponsoring agency
1.			
2.			
3.			

8. Knowledge about homestead cultivation:

Please mention your opinion regarding the following items:

Sl. No.	Items	Full Marks	Marks obtained
1	What type of vegetable is suitable for homestead Cultivation?	2	
2	Do you think homestead is ideal for Cultivation?	2	
3	Which soil is suitable for homestead Cultivation?	2	
4	Name two modern varieties of bean	2	
5	Mention two important disease of bean	2	
6	Name two modern varieties of tomato	2	
7	What is the suitable time for pumpkin cultivation?	2	
8	What is the main disease of bottle gourd?	2	
9	What is the suitable time for brinjal cultivation?	2	
10	What is the main disease of pointed gourd?	2	
	Total marks	20	

9. Time spent in homestead vegetable cultivation:

How many hours you spent for homestead vegetable cultivation?

Ans :hrs/day

10. Influence of homestead vegetable cultivation:

Please indicate your degree of influence regarding following statements:

Sl. No.	Statement	Influence			
		High (3)	Medium (2)	Low (1)	Not at all (0)
1.	Homestead cultivation helps to ensure balanced nutrition				
2.	Increase vitamin and mineral uptake through vegetable consumption				
3.	Help to reduce health disease				
4.	Helping hand for ensuring food security				
5.	Influence to increase family farm income				
6.	Passing time in effective work				
7.	Decrease vegetable purchasing cost				
8.	Increase beauties of the home				

Thanks for your nice co-operation and giving time to me for complete this interview

Signature:.....

Date:.....