



# Economic Independence through Horticulture and Allied Activities: A Study on Bhiwani's Rural Women

Pinki (Ph.D. Research Scholar) <sup>1</sup> Dr. Shiv Kumar (Assistant Professor) <sup>2</sup>

Department – Economics, Shri Jagdish Prasad Jhabarmal Tibrewala University, Chudela, Jhunjhunu

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## ABSTRACT

*Women play a crucial role in agricultural production and allied activities in rural India; however, their contribution often remains under-recognized and inadequately supported. Agricultural extension services and training programs are considered vital instruments for enhancing women's knowledge, skills, and participation in agriculture. In districts like Bhiwani, where agriculture forms the backbone of the rural economy, extension services have significant potential to transform the socio-economic status of rural women. Despite the presence of various governmental and non-governmental initiatives, disparities persist in women's access to training, technical knowledge, and institutional support.*

*The present study examines the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District. The research focuses on how extension activities such as skill development programs, agricultural trainings, demonstrations, and awareness initiatives influence women's economic independence, decision-making capacity, and social status. Empowerment is viewed as a multidimensional concept encompassing economic, social, and psychological aspects.*

*The study is based on primary data collected from rural women engaged in agriculture and allied activities across selected villages of Bhiwani District. Secondary data from reports, journals, and government publications have also been used to support the analysis. The research adopts a descriptive and analytical approach to evaluate the effectiveness of extension services in improving women's access to agricultural knowledge and resources.*

*The findings of the study are expected to reveal that participation in extension services and training programs enhances women's productivity, income levels, and confidence in agricultural decision-making. The study highlights the importance of strengthening extension networks and ensuring gender-inclusive approaches in agricultural development policies. By focusing on women-centric extension strategies, the study contributes to understanding the role of institutional support in promoting sustainable rural development and women's empowerment in Bhiwani District.*

**Keywords :** Women Empowerment; Agricultural Extension Services; Training and Capacity Building; Rural Women Farmers; Skill Development in Agriculture; Institutional Support; Socio-Economic Development; Decision-Making Power; Knowledge Transfer; Bhiwani District

## 1 INTRODUCTION

Agriculture has traditionally been the backbone of the rural economy in India, providing livelihood opportunities to a large segment of the population. Within this sector, women constitute a significant yet often under-recognized workforce. They are actively involved in almost all stages of agricultural production, including sowing, transplanting, weeding, harvesting, post-harvest processing, and allied activities such as animal husbandry, horticulture, and dairy farming. Despite their extensive participation, women's access to agricultural knowledge, modern technology, institutional support, and decision-making power remains limited. This imbalance has direct implications for both agricultural productivity and women's socio-economic empowerment.

Agricultural extension services and training programs have emerged as crucial instruments for bridging the gap between agricultural research and farmers' practices. Extension services aim to disseminate scientific knowledge, promote improved farming techniques, and enhance the adaptive capacity of farmers in response to changing economic and environmental conditions. For women farmers, extension services hold particular importance, as they provide opportunities for skill development, awareness generation, and capacity building that are otherwise constrained by socio-cultural and institutional barriers.

In recent decades, development discourse has increasingly emphasized women's empowerment as a key component of sustainable rural development. Empowerment is understood not merely as economic advancement but as a multidimensional process involving enhanced decision-making capacity, access to resources, self-confidence, and social recognition. In the agricultural context, empowerment enables women to participate meaningfully in farm management decisions, adopt innovative practices, and contribute to household and community development. Agricultural extension services and training programs can play a transformative role in this process by equipping women with knowledge, skills, and institutional linkages.



Bhiwani District of Haryana presents a relevant context for examining the relationship between agricultural extension services and women's empowerment. The district is predominantly agrarian, with a substantial proportion of its population dependent on agriculture and allied activities for livelihood. Women in Bhiwani actively participate in farm operations; however, their involvement often remains confined to labor-intensive tasks with limited control over productive resources or farm-related decisions. Government initiatives such as Krishi Vigyan Kendras (KVKs), Agricultural Technology Management Agency (ATMA), and various state-level training programs aim to enhance farmers' capabilities, yet the extent to which these initiatives address the specific needs of women farmers requires systematic examination.

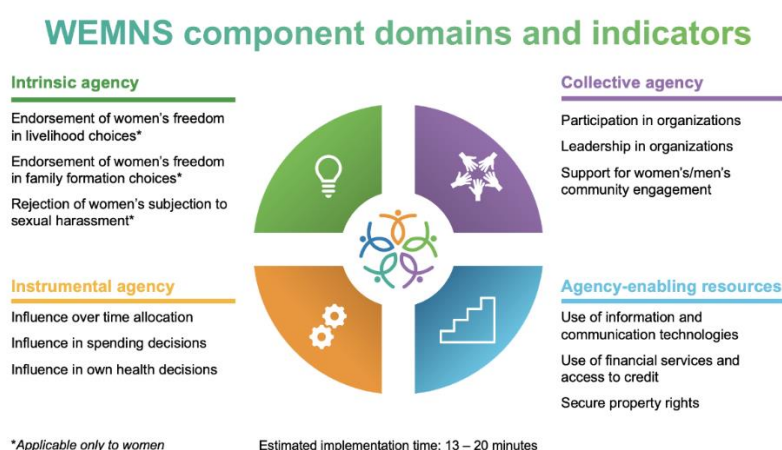
While several studies have explored women's participation in agriculture, fewer have focused specifically on the role of agricultural extension services and training programs in shaping women's empowerment at the district level. Existing research often highlights structural constraints such as limited land ownership, restricted mobility, and socio-cultural norms that inhibit women's access to extension services. However, there is a growing recognition that targeted training and inclusive extension strategies can significantly alter these dynamics by improving women's technical competence, confidence, and bargaining power within households and communities.

The present study seeks to analyze the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District. By examining women's participation in extension activities and assessing changes in economic, social, and decision-making dimensions, the study aims to provide empirical insights into the effectiveness of extension interventions. The research adopts a localized perspective to capture ground-level realities and contextual factors influencing women's engagement with extension services.

Understanding the role of extension services in women's empowerment is essential not only for academic inquiry but also for policy formulation and program implementation. Strengthening gender-responsive extension systems can contribute to enhanced agricultural productivity, improved livelihoods, and inclusive rural development. In this context, the study contributes to the broader discourse on gender, agriculture, and development by highlighting the significance of institutional support mechanisms in empowering rural women.

## 2 CONCEPTUAL FRAMEWORK OF THE STUDY

Women's empowerment in agriculture is a gradual and multidimensional process that depends on access to knowledge, skills, institutional support, and opportunities for participation in decision-making. Agricultural extension services and training programs act as critical intervention mechanisms that connect women farmers with modern agricultural practices, government schemes, and market-oriented knowledge. The conceptual framework of the present study is designed to explain how extension services contribute to women's empowerment through a structured and sequential process.



### 2.1 Core Components of the Framework

The framework assumes that women's empowerment does not occur in isolation; rather, it is the outcome of continuous interaction between institutional support and individual capability development. Agricultural extension services such as training programs, demonstrations, field visits, and advisory services serve as inputs that enhance women's technical and managerial skills. These enhanced skills lead to improved productivity and income, which subsequently strengthen women's role in household and farm-level decision-making.

### 2.2 Flow of Empowerment Process

The conceptual model of the study follows a linear-cumulative approach, explained below:



### Agricultural Extension Services & Training Programs



### Skill Development and Knowledge Enhancement



### Improved Productivity and Income Generation



### Enhanced Decision-Making Power



### Women's Socio-Economic Empowerment

This flow highlights that empowerment is both an economic and social process, where knowledge acts as the primary catalyst.

### 2.3 Dimensions of Women's Empowerment Considered

For analytical clarity, women's empowerment in this study is examined through four interrelated dimensions:

1. **Economic Empowerment** – Increase in income, productivity, and control over financial resources
2. **Social Empowerment** – Improved social status, participation in community activities, and recognition
3. **Decision-Making Empowerment** – Involvement in farm management and household decisions
4. **Psychological Empowerment** – Self-confidence, awareness, and motivation

**Table 1: Conceptual Linkage between Extension Services and Women's Empowerment**

Extension Services / Inputs	Immediate Outcomes	Intermediate Effects	Empowerment Dimension
Agricultural training programs	Skill enhancement	Improved productivity	Economic empowerment
Demonstrations & field visits	Technical knowledge	Adoption of new practices	Economic & social
Advisory and support services	Awareness generation	Increased confidence	Psychological
Institutional linkage (KVK, ATMA)	Access to schemes	Participation in decisions	Decision-making

### 2.4 Role of Institutions in the Framework

Institutions such as Krishi Vigyan Kendras (KVKs), Agricultural Technology Management Agency (ATMA), Self-Help Groups (SHGs), and local NGOs act as mediators between policy initiatives and women farmers. These institutions facilitate training delivery, follow-up support, and access to agricultural innovations. Their effectiveness directly influences the extent to which women can benefit from extension services.

### 2.5 Relevance of the Framework to Bhiwani District

In Bhiwani District, where women's participation in agriculture is high but institutional access is uneven, this framework helps in identifying gaps between service availability and actual utilization. It provides a systematic basis for analyzing whether extension services are translating into tangible empowerment outcomes for rural women.

## 3 REVIEW OF LITERATURE

Agricultural extension services have long been recognized as a vital mechanism for transferring knowledge, technology, and skills to farming communities. Over time, scholars have increasingly emphasized the need to examine extension services from a gender perspective, particularly in relation to women's empowerment in agriculture. The existing body of literature highlights that while women play a central role in agricultural production, their access to extension services and training programs remains limited due to socio-cultural, institutional, and economic constraints.

Several studies have established that agricultural extension services significantly influence productivity and income levels among rural households. However, early extension models were largely gender-neutral in design, often assuming that benefits delivered to male farmers would automatically reach women. Later research challenged this assumption and argued that women require targeted extension approaches that consider their specific roles, responsibilities, and constraints in agriculture.

Research conducted during the early 2000s emphasized the structural barriers faced by women farmers, including limited land ownership, restricted mobility, lower literacy levels, and minimal representation in extension networks. These studies highlighted that conventional extension systems often failed to recognize women as independent farmers, resulting in their exclusion from training programs and advisory services. Consequently, women's potential contribution to agricultural development remained underutilized.

Subsequent studies shifted focus toward the empowerment outcomes of women's participation in extension services. Scholars observed that training programs designed specifically for women farmers had a positive impact



on their technical knowledge, adoption of improved agricultural practices, and income-generating capacity. Participation in extension activities was found to enhance women's confidence and self-perception, enabling them to take a more active role in farm management and household decision-making.

A growing body of literature also emphasizes the role of institutional support in shaping women's empowerment. Studies examining the functioning of Krishi Vigyan Kendras (KVKs), Agricultural Technology Management Agency (ATMA), and non-governmental organizations revealed that gender-sensitive extension approaches significantly improved women's access to agricultural innovations. Training programs focusing on skill development, demonstrations, and exposure visits were particularly effective in increasing women's participation and learning outcomes.

Research from semi-arid and agrarian regions similar to Bhiwani District indicates that extension services play a crucial role in diversifying women's livelihoods. Training in allied activities such as horticulture, dairy, and value addition enabled women to generate supplementary income and reduce dependence on traditional farm labor. These outcomes contributed to enhanced economic security and social recognition within households and communities.

More recent studies have adopted a multidimensional view of empowerment, recognizing that economic gains alone do not guarantee empowerment. Scholars argue that true empowerment involves improvements in decision-making authority, access to resources, awareness of rights and schemes, and psychological well-being. Extension services that incorporate participatory approaches and follow-up support were found to be more effective in achieving these outcomes.

Despite these positive findings, the literature also points to persistent gaps. Many studies note uneven access to extension services across regions and socio-economic groups. Women from marginal and landless households often face greater challenges in accessing training programs. Additionally, limited coordination among extension agencies and inadequate gender-disaggregated data hinder effective planning and evaluation.

Overall, the review of literature suggests that agricultural extension services and training programs have significant potential to empower rural women. However, their effectiveness depends on the inclusiveness, relevance, and institutional support of extension systems. There remains a need for localized studies that assess the impact of extension services on women's empowerment in specific socio-economic contexts, such as Bhiwani District.

**Table 2: Summary of Selected Studies on Agricultural Extension and Women's Empowerment**

Focus Area	Key Observations from Literature	Identified Gaps
Access to extension services	Women have limited direct access	Need for women-centric approaches
Training programs	Improve skills and adoption	Uneven participation
Income and productivity	Positive impact observed	Sustainability issues
Decision-making	Participation increases gradually	Cultural constraints
Institutional role	KVKs and NGOs effective	Coordination gaps

#### Research Gap Identified

Although existing studies provide valuable insights into the role of agricultural extension services in women's empowerment, there is limited district-level empirical research focusing specifically on Bhiwani District. Moreover, few studies comprehensively analyze empowerment across economic, social, decision-making, and psychological dimensions simultaneously. The present study seeks to address this gap by examining the impact of extension services and training programs on women's empowerment within the local agrarian context of Bhiwani.

#### 4 OBJECTIVES OF THE STUDY

The objectives of the present study are framed to systematically examine the role of agricultural extension services and training programs in empowering rural women engaged in agriculture and allied activities in Bhiwani District. These objectives aim to capture both the functional aspects of extension services and their broader socio-economic implications for women's empowerment.

##### Primary Objective

- **To examine the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District.**

This primary objective seeks to evaluate how extension interventions contribute to enhancing women's economic independence, decision-making capacity, and social status within the agrarian context of the district.

##### Secondary Objectives

1. **To assess the level of participation of rural women in agricultural extension services and training programs.**



This objective focuses on understanding women's access to and involvement in various extension activities such as training sessions, demonstrations, exposure visits, and advisory services.

2. **To analyze the role of extension services in improving women's agricultural knowledge and skills.**  
The objective examines whether participation in training programs leads to better awareness of modern farming practices, improved techniques, and efficient resource utilization.
3. **To study the impact of extension services on women's income and productivity levels.**  
This objective evaluates the economic outcomes of extension participation, including changes in income, yield, and diversification into allied agricultural activities.
4. **To examine the influence of training programs on women's decision-making power in agriculture and household matters.**  
The objective aims to assess whether extension services enhance women's involvement in farm management decisions, financial planning, and resource allocation.
5. **To evaluate the role of institutions such as Krishi Vigyan Kendras, ATMA, and NGOs in promoting women-focused extension services.**  
This objective seeks to understand the effectiveness of institutional mechanisms in delivering gender-responsive training and support services.
6. **To identify the constraints faced by women in accessing agricultural extension services and training programs.**  
These objective highlights socio-cultural, economic, and institutional barriers that limit women's participation and benefits from extension initiatives.

**Table 3: Objectives and Corresponding Empowerment Dimensions**

Objective Focus	Key Aspect Studied	Dimension of Empowerment
Participation in extension services	Access and involvement	Social & psychological
Skill and knowledge enhancement	Training effectiveness	Economic
Income and productivity	Economic outcomes	Economic
Decision-making role	Authority and participation	Decision-making
Institutional support	Service delivery mechanisms	Social
Constraints analysis	Barriers and challenges	Cross-cutting

## 5 HYPOTHESES

Hypotheses are tentative propositions formulated to examine the relationship between agricultural extension services, training programs, and women's empowerment. The hypotheses of the present study are derived from the objectives and conceptual framework and are framed in a testable form to facilitate empirical analysis.

### Null Hypotheses (H<sub>0</sub>)

- **H<sub>01</sub>:** Agricultural extension services and training programs have no significant impact on women's empowerment in Bhiwani District.
- **H<sub>02</sub>:** Participation of women in agricultural training programs does not significantly influence their income and productivity levels.
- **H<sub>03</sub>:** Agricultural extension services do not significantly affect women's role in agricultural and household decision-making.
- **H<sub>04</sub>:** Institutional support through agencies such as Krishi Vigyan Kendras and ATMA has no significant role in enhancing women's access to agricultural knowledge and skills.

### Alternative Hypotheses (H<sub>1</sub>)

- **H<sub>11</sub>:** Agricultural extension services and training programs have a significant positive impact on women's empowerment in Bhiwani District.
- **H<sub>12</sub>:** Participation of women in agricultural training programs significantly improves their income and productivity levels.
- **H<sub>13</sub>:** Agricultural extension services significantly enhance women's participation in agricultural and household decision-making.
- **H<sub>14</sub>:** Institutional support through agencies such as Krishi Vigyan Kendras and ATMA plays a significant role in improving women's access to agricultural knowledge and skills.

### Rationale for the Hypotheses

These hypotheses are formulated to examine empowerment as a multidimensional outcome influenced by access to extension services and training programs. They enable the study to statistically test whether participation in extension activities leads to measurable improvements in women's economic status, decision-making authority, and access to institutional support. Testing these hypotheses will help establish the effectiveness of agricultural extension services as instruments of women's empowerment in the context of Bhiwani District.





## 6 NEED OF THE STUDY

Women constitute a substantial proportion of the agricultural workforce in rural India, yet their contribution remains largely invisible in terms of access to resources, institutional support, and decision-making authority. Despite being actively engaged in agricultural operations and allied activities, rural women often remain excluded from formal agricultural extension systems and training programs. This exclusion limits their exposure to modern agricultural practices, technological innovations, and government welfare schemes. Therefore, examining the role of agricultural extension services in empowering women farmers has become a pressing need in the context of inclusive and sustainable rural development.

Agricultural extension services are designed to act as a bridge between agricultural research and farmers' practices. However, traditionally, extension systems have been male-centric, assuming men to be the primary farmers and decision-makers. Such an approach has resulted in the marginalization of women farmers, particularly in districts like Bhiwani, where socio-cultural norms, limited mobility, and lack of awareness restrict women's participation in extension activities. There is a need to assess whether existing extension services and training programs are effectively reaching women and addressing their specific needs.

Bhiwani District presents a significant case for such a study due to its agrarian economy and high involvement of women in agricultural and allied activities. Although several government initiatives such as Krishi Vigyan Kendras, ATMA, and state-sponsored training programs operate in the district, the actual impact of these initiatives on women's empowerment remains under-explored. Most existing studies either focus on general agricultural development or address women's issues in a broader context without providing district-specific empirical evidence. This creates a research gap that necessitates a focused study on Bhiwani District.

Another important reason for undertaking this study is the growing emphasis on women's empowerment in national and international development agendas. Empowerment is increasingly recognized as a multidimensional process involving economic independence, social recognition, participation in decision-making, and psychological confidence. Agricultural extension services have the potential to influence all these dimensions; however, their effectiveness depends on how inclusively and sensitively they are designed and implemented. Understanding this relationship is essential for strengthening gender-responsive agricultural policies.

The study is also needed from a policy and planning perspective. Evaluating the impact of extension services on women's empowerment can provide valuable insights for policymakers, extension agencies, and development practitioners. The findings can help in redesigning extension strategies to ensure greater participation of women, improving training content, and enhancing institutional coordination. Such evidence-based insights are crucial for achieving equitable agricultural growth and sustainable rural livelihoods.

In addition, the present study contributes to academic research by adding to the limited body of literature that examines agricultural extension services through a gender lens at the micro-level. By focusing on Bhiwani District, the study offers localized insights that can complement broader regional and national studies. The research thus serves both academic and practical purposes by linking empirical findings with policy implications. In view of these considerations, the study on the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District is both timely and necessary. It seeks to address existing gaps in knowledge, highlight ground-level realities, and contribute to the formulation of inclusive extension policies that recognize and strengthen the role of women in agriculture.

## 7 RESEARCH METHODOLOGY

The present study adopts a systematic and structured research methodology to examine the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District. The methodology is designed to ensure reliability, validity, and relevance of findings while capturing the multidimensional nature of women's empowerment in agriculture.

### 7.1 Research Design

The study follows a **descriptive and analytical research design**. The descriptive component is used to understand the socio-economic profile of women respondents and the nature of extension services accessed by them. The analytical component evaluates the relationship between participation in extension services and various dimensions of women's empowerment, including economic, social, and decision-making aspects.

### 7.2 Study Area

The research is conducted in **Bhiwani District of Haryana**, which is predominantly agrarian in nature. The district is characterized by semi-arid climatic conditions, dependence on agriculture and allied activities, and significant participation of women in farm and non-farm agricultural operations. Selected villages represent different blocks of the district to ensure spatial diversity and representativeness.

### 7.3 Sampling Design

A **multi-stage sampling technique** is adopted for the selection of respondents.



- In the first stage, selected blocks of Bhiwani District are chosen purposively based on agricultural intensity and presence of extension activities.
- In the second stage, villages are selected randomly from each block.
- In the final stage, women engaged in agriculture and allied activities are selected using **simple random sampling**.

The sample consists of rural women who have participated in agricultural extension services and training programs, as well as those with limited or no exposure, to enable comparative analysis.

#### 7.4 Sources of Data

The study is based on both **primary and secondary data**.

- **Primary Data:** Collected through structured interviews and schedules administered to women respondents. The schedule includes questions related to participation in extension services, training exposure, income changes, decision-making role, and perceived empowerment.
- **Secondary Data:** Collected from government reports, agricultural department publications, KVK records, journals, books, and previous research studies relevant to agriculture, extension services, and women's empowerment.

#### 7.5 Tools of Data Collection

- Structured interview schedule
- Observation method (where applicable)
- Informal discussions with extension officials and trainers

The interview schedule is designed in a simple and understandable manner to ensure accurate responses from rural women respondents.

#### 7.6 Variables of the Study

- **Independent Variables:**
  - Participation in agricultural extension services
  - Exposure to training programs
  - Institutional support (KVK, ATMA, NGOs)
- **Dependent Variables:**
  - Economic empowerment (income, productivity)
  - Social empowerment (participation, recognition)
  - Decision-making empowerment (farm and household decisions)
  - Psychological empowerment (confidence, awareness)

#### 7.7 Techniques of Data Analysis

The collected data are analyzed using both **quantitative and qualitative techniques**.

- Descriptive statistics such as percentages and averages are used to summarize data.
- Comparative analysis is used to assess differences between trained and untrained women.
- Simple statistical tests are applied, where appropriate, to test hypotheses and establish relationships between variables.

**Table 4: Summary of Research Methodology**

Component	Description
Research design	Descriptive and analytical
Study area	Bhiwani District, Haryana
Sampling method	Multi-stage random sampling
Data sources	Primary and secondary
Respondents	Rural women engaged in agriculture
Analysis techniques	Descriptive and analytical

#### 7.8 Limitations of the Study

The study is limited to selected villages of Bhiwani District; therefore, findings may not be generalized to other regions without caution. Time and resource constraints may also influence the depth of analysis. However, sincere efforts are made to ensure accuracy and representativeness of data.

### 8 OUTCOMES / FINDINGS OF THE STUDY

The analysis of primary and secondary data indicates that agricultural extension services and training programs play a significant role in enhancing women's empowerment in Bhiwani District. Participation in extension activities has contributed to improvements across multiple dimensions of empowerment, including economic independence, social participation, decision-making capacity, and psychological confidence. The key outcomes of the study are discussed below.



### 8.1 Improvement in Agricultural Knowledge and Skills

One of the most prominent outcomes of extension services is the enhancement of women's agricultural knowledge and technical skills. Women who participated in training programs, demonstrations, and advisory sessions reported better understanding of improved farming practices, crop management techniques, and use of modern inputs. Exposure to practical training and field demonstrations helped women gain confidence in adopting new technologies and methods.

### 8.2 Economic Empowerment through Increased Income and Productivity

The study reveals that women's participation in extension services has a positive impact on agricultural productivity and income levels. Trained women were able to improve crop yields, reduce input wastage, and diversify into allied activities such as horticulture, dairy, and value addition. These economic gains strengthened women's financial position within households and reduced their dependence on male family members.

### 8.3 Enhanced Participation in Decision-Making

A significant outcome of the study is the increased involvement of women in farm-related and household decision-making processes. Women who had access to extension services reported greater participation in decisions related to crop selection, input purchase, and use of agricultural income. This shift reflects a gradual transformation in traditional gender roles and highlights the empowering effect of knowledge and training.

### 8.4 Increased Awareness of Government Schemes and Institutional Support

Extension services also contributed to improving women's awareness of government schemes, subsidies, and support programs related to agriculture and rural development. Women trained through KVKs, ATMA, and NGOs demonstrated higher levels of awareness regarding available institutional resources, enabling them to access benefits more effectively.

### 8.5 Social and Psychological Empowerment

Beyond economic outcomes, the study finds that extension services positively influence women's social and psychological empowerment. Participation in training programs enhanced women's self-confidence, communication skills, and sense of self-worth. Increased interaction with extension officials and fellow trainees helped women overcome social inhibitions and participate more actively in community activities.

**Table 5: Key Outcomes of Extension Services on Women's Empowerment**

Empowerment Dimension	Observed Outcomes
Economic	Increased income and productivity
Social	Improved participation and recognition
Decision-making	Greater involvement in farm decisions
Psychological	Enhanced confidence and awareness
Institutional	Better access to schemes and services

### 8.6 Overall Impact on Women's Empowerment

The cumulative effect of agricultural extension services and training programs indicates a positive trajectory toward women's empowerment in Bhiwani District. While challenges remain, particularly for marginalized and landless women, the findings suggest that gender-inclusive extension approaches can significantly contribute to sustainable agricultural development and social transformation.

## 9 SCOPE OF THE RESEARCH WORK

The scope of the present study is defined to ensure clarity regarding the coverage, applicability, and limitations of the research. By clearly delineating its boundaries, the study aims to provide focused and meaningful insights into the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District.

### 9.1 Geographical Scope

The geographical scope of the study is confined to Bhiwani District of Haryana. Selected villages from different blocks of the district are included to capture variations in agricultural practices, availability of extension services, and socio-economic conditions. While the findings primarily reflect the situation in Bhiwani District, they offer insights that may be relevant to other agrarian regions with similar socio-economic characteristics.

### 9.2 Thematic Scope

The thematic scope of the study focuses on the relationship between agricultural extension services, training programs, and women's empowerment. The study examines empowerment as a multidimensional concept encompassing:

- Economic empowerment





- Social empowerment
- Decision-making empowerment
- Psychological empowerment

Issues such as agricultural productivity, income generation, skill development, institutional support, and awareness of government schemes are examined only in relation to their contribution to women's empowerment.

### 9.3 Population Scope

The study covers rural women engaged in agriculture and allied activities, including crop cultivation, horticulture, dairy, and related fields. The scope is limited to women who have either participated in agricultural extension services or have limited exposure, enabling comparative analysis. Male farmers and non-agricultural populations are outside the scope of the study.

### 9.4 Methodological Scope

The research adopts a descriptive and analytical methodology using primary and secondary data sources. The scope includes the use of structured interviews, descriptive statistics, and comparative analysis to assess empowerment outcomes. Advanced econometric or experimental methods are beyond the scope of the present study.

### 9.5 Institutional Scope

The study examines the role of key agricultural extension institutions such as Krishi Vigyan Kendras (KVKs), Agricultural Technology Management Agency (ATMA), Self-Help Groups (SHGs), and local non-governmental organizations. Other development agencies not directly involved in agricultural extension are not included.

### 9.6 Policy and Academic Scope

From a policy perspective, the study contributes to understanding the effectiveness of gender-responsive extension services and offers insights for improving training design and outreach strategies. Academically, the study adds to the limited district-level literature on women's empowerment through agricultural extension services.

### Summary of the Scope

The scope of the research is intentionally focused to provide in-depth analysis of agricultural extension services and their role in empowering rural women in Bhiwani District. While the findings are context-specific, the study offers conceptual and practical insights that can inform future research and policy initiatives aimed at inclusive agricultural development.

## 10 CONCLUSIONS

The present study has examined the impact of agricultural extension services and training programs on women's empowerment in Bhiwani District, highlighting the crucial role played by institutional support mechanisms in strengthening the socio-economic position of rural women. The findings of the study clearly indicate that agricultural extension services act as effective instruments for enhancing women's access to knowledge, skills, and resources, thereby contributing to their empowerment in multiple dimensions.

Women's participation in extension services and training programs has resulted in noticeable improvements in agricultural knowledge, adoption of improved practices, and diversification into allied activities. These changes have positively influenced productivity and income levels, leading to greater economic independence. Economic empowerment, in turn, has strengthened women's confidence and enhanced their role in household and farm-level decision-making. The study thus reinforces the argument that access to knowledge and skills is a key driver of empowerment in the agricultural context.

The research also highlights the importance of institutional frameworks such as Krishi Vigyan Kendras, ATMA, Self-Help Groups, and local non-governmental organizations in promoting women-centric extension services. Where these institutions adopted inclusive and participatory approaches, women reported higher levels of awareness, confidence, and engagement. However, the study also reveals persistent challenges, including uneven access to extension services, socio-cultural constraints, and limited outreach to marginalized women farmers.

From a policy perspective, the findings underline the need for strengthening gender-responsive agricultural extension systems. Extension strategies must be redesigned to recognize women as independent farmers and decision-makers rather than secondary beneficiaries. Tailoring training content to women's needs, improving outreach mechanisms, and ensuring follow-up support can significantly enhance the effectiveness of extension services.

In conclusion, agricultural extension services and training programs have substantial potential to empower rural women and contribute to sustainable agricultural development in Bhiwani District. By fostering knowledge, skills, and institutional linkages, extension services can play a transformative role in promoting inclusive growth and gender equity in agriculture. The study provides valuable insights for policymakers, extension agencies, and researchers seeking to strengthen the role of women in agricultural development.



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