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Decision-making status of rural women and technology adoption: A study of Haryana

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Abstract

The status of women is a critical indicator of social development and gender equality, particularly in rural contexts where traditional norms continue to shape everyday decision-making. The present study examines the multidimensional status of rural women across autonomy, social, religious and cultural, economic, independent, respect-related, and health and nutrition decision-making domains, and analyses its relationship with the adoption of farm and household technologies. The study was conducted in two districts of Haryana-Kurukshetra and Mahendragarh-using a structured interview schedule administered to rural women respondents. Weighted Mean Scores, correlation analysis, and t-tests were employed for data analysis. The findings reveal that rural women exhibit relatively higher participation in personal autonomy, religious practices, health-related decisions, and independent decisions, while comparatively lower participation is observed in economic and agricultural decision-making. Significant positive correlations were found between women's status across all domains and the adoption of farm and household technologies. District-wise comparison indicates that the overall status of women in Kurukshetra is significantly higher than in Mahendragarh. The study underscores that technological adoption not only enhances productivity but also contributes to women's empowerment and improved socio-economic status in rural areas.

Keywords: Rural women, status of women, decision-making, farm technologies, household technologies, Haryana

Introduction

The status of women has long been a central concern in sociological inquiry, development studies, and gender discourse. Women's status refers to their position in the social structure, reflected through access to resources, participation in decision-making, autonomy, respect, and control over their own lives. Classical sociological thinkers emphasized status as a key dimension of social stratification. Max Weber (1946) ^[7] conceptualized status as a component of social hierarchy distinct from class, rooted in social honor and prestige. Emile Durkheim (1893) ^[3] linked gender roles to social solidarity, highlighting how traditional divisions of labor often constrained women's autonomy. Similarly, Talcott Parsons (1955) ^[5] viewed the family as a functional unit where expressive roles were largely assigned to women, often limiting their decision-making power.

Women comprise nearly half the global population and one-third of its workforce, playing indispensable roles in both domestic and public spheres. National development cannot be achieved without empowering this significant demographic. Historically, women in Vedic society enjoyed equal rights, but their status deteriorated during the

medieval period, reaching a low point by the 18th century. The 20th century brought technological advancements that eased many domestic responsibilities and transformed the role of women-though such benefits have yet to fully reach rural women.

The position of women has been closely tied to the sexual division of labor. In early societies, men hunted while women cared for children. However, with the advent of agriculture, women began participating in outdoor labor such as weeding and transportation, which elevated their social standing (Baig, 1976).

According to Merton (1957), social roles and status are interlinked, with one's status encompassing a variety of roles in a given social structure. Factors such as age, gender, occupation, and income determine an individual's social standing (Davis, 1949). High-status individuals enjoy social respect, freedom of choice, and access to resources, while those of lower status often face restrictions and limited opportunities (Hochschild, 1975).

Autonomy and participation in decision-making among rural women vary across regions and are influenced by educational levels, economic status, and cultural context. For instance, Bradshaw (2015) observed that rural women in

Nicaragua had less agency in reproductive decisions than their urban counterparts. Ahuja and Narayan (2016) found that women in Haryana played significant roles in fodder and dairy-related decisions, though joint decision-making was more common.

The status and roles of women are shaped by societal norms, cultural expectations, and the pace of technological change. As technology advances, it alters traditional work roles and introduces new dynamics into the socio-economic landscape. In rural households, women increasingly use appliances like washing machines, grinders, refrigerators, and pressure cookers, saving both time and labor. This shift allows for greater participation in social life, support in family income, and improved caregiving (Mohyuddin and Begum, 2013).

Labor-saving devices, such as gas stoves and water supply systems, have replaced firewood and coal, improving women's health and household efficiency. Women continue to play multiple roles-as farmers, caregivers, homemakers, and contributors to income generation. Technological improvements have helped reduce workload and enhance the quality of life for many rural women.

Historically, rural women had limited access to modern agricultural technologies due to gender-based restrictions and cultural norms. However, this is gradually changing. Mallik noted increased female involvement in modern agricultural practices, although decision-making power remains limited. Promoting equality requires changing societal mindsets and providing women with opportunities to participate in decisions regarding technology use.

The late 18th and 19th centuries saw a gradual improvement in the socio-economic roles of Indian women. Technological developments created new job opportunities and skill demands, increasing the need for female labor. Women are now more aware of health and hygiene due to effective national programs.

Technology tailored to local conditions-known as appropriate technology-plays a crucial role in increasing agricultural productivity. The gender-related impacts of these technologies significantly affect women's lives. Enhancing women's access to agricultural and domestic technologies is essential for bridging the gender gap in farming and promoting broader social equity.

Anitha emphasized that improved tools reduced physical strain and enhanced efficiency. Dipti highlighted the role of Krishi Vigyan Kendras (KVKs) in spreading awareness about drudgery-reducing tools, which significantly improved productivity.

From a feminist perspective, scholars such as Simone de Beauvoir (1949) ^[2] argued that women's subordinate status is socially constructed rather than biologically determined. Later feminist theorists emphasized autonomy, control over resources, and participation in decision-making as core indicators of women's empowerment (Sen, 1999) ^[6].

In the Indian context, the issue of women's status has been discussed extensively by social reformers and thinkers. Raja Ram Mohan Roy and Ishwar Chandra Vidyasagar highlighted women's education and social rights as prerequisites for social progress. Mahatma Gandhi viewed women as equal moral agents and emphasized their role in both the household and the public sphere. B.R. Ambedkar strongly linked women's status to legal rights, economic

independence, and social justice, arguing that the progress of a society can be measured by the degree of progress women have achieved. Contemporary Indian scholars have further emphasized that rural women's empowerment is closely tied to access to technology, education, and economic opportunities.

In rural India, women play a pivotal role in agriculture and household management, yet their contributions often remain undervalued and invisible. Decision-making power within households and communities is shaped by patriarchal norms, caste, class, and regional variations. The adoption of farm and household technologies has the potential to alter these dynamics by reducing drudgery, saving time, increasing productivity, and enhancing women's bargaining power within the family. Against this backdrop, the present study seeks to examine the status of rural women across multiple decision-making domains and its relationship with the adoption of farm and household technologies in Haryana.

Research Methodology

For the present study, two districts representing the two identified stages were selected using random sampling. Accordingly, Kurukshetra and Mahendragarh districts of Haryana were chosen for conducting the research. From each selected district, two blocks were selected randomly. In Kurukshetra district, Thanesar and Ladwa blocks were selected, while in Mahendragarh district, Mahendragarh and Satnali blocks were chosen for the study. From each selected block, four villages were randomly selected. In Kurukshetra district, Amin, Bahari, Ghararsi, and Barwa villages were selected from Thanesar block, whereas Umri, Lohara, Geeta Colony, and Chhapra villages were selected from Ladwa block. Similarly, in Mahendragarh district, Bass Khudana, Mahendragarh, Sigra, and Chajiyawas villages were selected from Mahendragarh block, while Jarwa, Digrota, Bass, and Dhana villages were selected from Satnali block. Thus, a total of sixteen villages were selected for the study. From each selected block, 180 respondents were selected purposively based on the objectives of the study. Consequently, a total sample of 360 respondents was drawn for the present investigation.

Statistical Analysis of Data

The collected data was coded, tabulated, analyzed and interpreted according to the objectives of the present study with the help of appropriate statistical techniques. The descriptive statistical tools such as frequency, percentage, chi-square, weighted mean score, coefficient of correlation (r) and two sample t-test were adopted to draw the inferences.

Data collection: The data were collected personally by the researcher through the combination of interview schedule and questionnaire.

- a) **Categorization:** While collecting data different categories of background information were made to make coding simpler.
- b) **Coding:** After categorization, coding was done as determined by coding numbers of every expected answer of each respondents on coding sheets in excel.
- c) **Tabulation:** To get a clear picture of findings, the

coded data were decoded transferring from coding sheets to tables.

- d) Statistical analysis:** For interpretation of results, different statistical tools and techniques employed are given below.

(i) Frequency and percentage

The number of times an individual item is repeated in a series is called its frequency. The way in which the observations are classified and distributed in the proper class interval are known as frequency distribution. Frequency and percentage were calculated for preparing socio and economic profile.

(ii) Weighted Mean Score (Mean)

The weighted arithmetic mean is similar to an ordinary arithmetic mean (the most common type of average), except that instead of each of the data points contributing equally to the final average, some data points contribute more than others. The notion of weighted mean plays a role in descriptive statistics and also occurs in a more general form in several other areas of mathematics. Let $x_1, x_2, \dots, x_n$ be n values with weights $w_1, w_2, \dots, w_n$, respectively. The mean value was worked out by dividing the total by corresponding observation as shown in formula.

$$\bar{x} = \frac{\sum_{i=1}^n x_i \cdot w_i}{\sum_{i=1}^n w_i}$$

$$\bar{x} = \frac{(x_1 \cdot w_1) + (x_2 \cdot w_2) + \dots + (x_n \cdot w_n)}{w_1 + w_2 + \dots + w_n}$$

- (iii) Two sample t-test:** This was used to measure significant difference in various aspects of knowledge level in rural area of Kurukshetra and Mahendragarh district. It was also used to measure the significant difference in knowledge of basic, technical and working aspects of farm and household technologies practiced by the respondents. The formula used is as under:

Two-Sample T-Test

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

$\bar{X}_1$ = observed mean of 1st sample
 $\bar{X}_2$ = observed mean of 2nd sample
 S_1 = standard deviation of 1st sample
 S_2 = standard deviation of 2nd sample
 n_1 = sample size of 1st sample
 n_2 = sample size of 2nd sample

- (iv) Coefficient of correlation (r):** Coefficient of correlation (r) to measure the strength and direction of the relationship between dependent variables and the extent of adoption of farm and household technologies.

Correction coefficient formula

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

Results

This section covered the women participation in seven domain i.e. autonomy decision capabilities, social decisions, religious decisions, economic decisions, independence decisions, respect given aspects and health and nutrition decisions in following tables.

Status of rural women in autonomy decisions capabilities

The rural women participation in autonomy decisions capabilities were found (Table 1). It was observed that women were free to wear clothes of their choice with the highest weighted mean score (2.72) and got 1st rank and option to cook food as per her preferences with weighted mean score (2.64) and got 2nd ranked and 3rd rank to authority to attend social ceremonies (WMS AS 2.55).

Status of rural women in social decisions

The result Table 2 indicated that freedom to celebrate special moments with your family with the weighted mean scores (2.38) and got 1st rank followed by authority to decide on hosting social events with the weighted mean scores (2.35) and got 2nd ranked and authority to decide on children's education (2.28 weighted mean score). It was also noticed that women of Kurukshetra district were having more participation in social decision as compare to women of Mahendragarh district.

Status of rural women in religious and cultural decisions

The result in Table 3 showed that religious and cultural decisions were performed by the rural women like freedom to accept gifts from her daughter-in-law's family with weighted mean scores (2.56) and got rank 1st followed by freedom to worship any deity of her choice (2.42) and got 2nd rank and right to choose whom to invite home (2.43) and got 3rd rank. In religious and cultural decisions women of Kurukshetra district participated more as compare to women of Mahendragarh district.

Status of rural women in economic decisions

The perusal of data regarding participation of rural women in economic matters are presented in Table 4. The women were free to open bank account with the highest weighted mean score (2.39) and got 1st rank followed by autonomy over her income (2.28) and got 2nd rank. Regarding autonomy over income as some of women were employed as well as women receive money in certain customary practices like Raksha Bandhan, Diwali, Teej etc.

Table 1: Status of rural women in autonomy decisions capabilities

Autonomy decisions capabilities	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Free to wear clothes of her choice	154 (85.56)	18 (10.00)	8 (4.44)	130 (72.23)	35 (19.44)	15 (8.33)	981	2.72	I
Cook food as per her preferences	145 (80.56)	25 (13.88)	10 (5.56)	118(65.56)	40(22.22)	22 (12.22)	951	2.64	II
Free to go for a picnic or a movie	117 (65.00)	52 (28.89)	11 (6.11)	90 (50.00)	67 (37.22)	23 (12.78)	893	2.48	IV
Authority to attend social ceremonies.	126 (70.00)	40 (22.22)	14 (7.78)	105 (58.33)	57 (31.67)	18 (10.00)	919	2.55	III
Autonomy to make decisions regarding agricultural activities.	87 (48.33)	50 (27.78)	43 (23.89)	72 (40.00)	38 (21.11)	70 (38.89)	766	2.12	VI
Opportunity to engage in social development programs.	103 (57.22)	44 (24.44)	33 (18.33)	90 (50.00)	52 (28.89)	38 (21.11)	842	2.33	V
Freedom to socialize with men at workplace	68 (37.78)	29 (16.11)	83 (46.11)	40 (22.22)	15 (8.33)	125 (69.45)	620	1.72	X
Free to work with male members as needed.	73 (40.56)	33 (18.33)	74 (41.11)	52 (28.89)	29 (16.11)	99 (50.00)	672	1.86	IX
Authority to decide whether to undertake official trips or travel outside.	82 (45.56)	72 (40.00)	26 (14.44)	60 (33.33)	24 (13.33)	96 (53.34)	740	2.05	VII
Freedom for rest and work as males do.	90 (50.00)	52 (28.89)	38 (21.11)	72 (40.00)	46 (25.56)	62 (34.44)	792	2.02	VIII

Figure in the parentheses denote percentage

Table 2: Status of rural women in social decisions

Social decisions	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Authority to decide on hosting social events.	98 (54.44)	72 (40.00)	10 (5.56)	82 (45.56)	54 (30.00)	44 (24.44)	846	2.35	II
Authority to decide on children's education.	103(57.22)	59(32.78)	18(10.00)	85(47.22)	29(16.11)	66(36.67)	824	2.28	III
Freedom to choose your children's school.	90 (50.00)	81 (45.00)	9 (5.00)	73 (40.56)	65 (36.11)	42 (23.33)	686	1.90	V
Right to choose your children's life partner.	71 (39.45)	96 (53.33)	13 (7.22)	51 (28.33)	49 (27.22)	80 (44.45)	749	2.08	IV
Free to celebrate special moments with family.	91 (50.56)	82 (45.56)	7 (3.88)	80 (44.44)	75 (41.67)	25 (13.89)	859	2.38	I

Figure in the parentheses denote percentage

Table 3: Status of rural women in religious and cultural decisions

Religious and cultural decisions	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Freedom to worship any deity of her choice	108 (60.00)	64 (35.56)	9 (5.00)	90 (50.00)	73 (40.56)	17 (9.44)	894	2.48	II
Permitted to go outside for religious worship.	98 (54.44)	77 (42.78)	5 (2.78)	82 (45.56)	75 (41.67)	23 (12.78)	872	2.42	IV
Free to send & receive gifts	103 (57.22)	65 (36.11)	12 (6.67)	85 (47.22)	68 (37.78)	27 (15.00)	869	2.41	V
Right to choose whom to invite home.	98 (54.44)	75 (41.67)	7 (3.89)	87 (48.33)	72 (40.00)	21 (11.67)	877	2.43	III
Freedom to send gifts to relatives and daughters-in-law on special occasions.	110 (61.11)	59 (32.78)	11 (6.11)	93 (51.67)	68 (37.78)	19 (10.56)	893	2.48	II
Freedom to accept gifts from your daughter-in-law's family.	125 (69.44)	47 (26.11)	8 (4.44)	98 (54.44)	69 (38.33)	13 (7.22)	922	2.56	I

Figure in the parentheses denote percentage

Table 4: Status of rural women in economic decisions

Economic decisions	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Free to open bank account	103 (57.22)	58 (32.22)	19 (10.56)	87 (48.33)	66 (36.67)	27 (15.00)	862	2.39	I
Autonomy over her income	92 (51.11)	55 (30.56)	33 (18.33)	83 (46.11)	58 (32.22)	39 (21.67)	823	2.28	II
Freedom to spend your money as see fit.	85 (47.22)	67 (37.22)	28 (15.56)	74 (41.11)	69 (38.33)	37 (20.56)	814	2.26	III
Authority to make decisions regarding loans when necessary.	58 (32.22)	77 (42.78)	45 (25.00)	43 (23.89)	45 (25.00)	78 (43.33)	670	1.86	IV

Figure in the parentheses denote percentage

Status of rural women in independent decisions

The analysis of data in Table 5 revealed that independent decisions were performed by the rural women like vote according to her preference with weighted mean scores (2.51) and got rank 1st followed by free to use social media platforms (2.45) and got 2nd rank and free to use mobile phone (2.43) and got 3rd rank. Status of Kurukshetra women in independent decisions was more as compare to women of Mahendragarh district. Independent decisions were taken as

self- sufficiency and self -reliance and state of being free from family control.

Status of rural women in respect given aspect

The table 6 showed the status of rural women in respect given aspect. The result revealed that respect in front of visitors with the weighted mean score (2.48) and got 1st ranked followed by family conflicts, her opinion is respected (2.27) and got 2nd ranked.

Status of rural women in health and nutrition decisions

The table 7 indicated the status of rural women in health and nutrition decision. The result showed that medical treatments as per her choice with the weighted mean score (2.66) and ranked 1st followed by devoted full attention to her health (2.35) and got 2nd rank.

Status level of rural women in different domains of decision making: The rural women participation in decision making of different domains of decision making was calculated by awarding 3, 2, 1 points to always, seldom and never respectively. For the statements in different domains of women participation, total score of each respondent was calculated by summing up the scores of each domain. The minimum and maximum score achieved by the respondents were calculated and categorised as low, moderate and high levels (Table 8.)

The result revealed that two-fifth of the respondents (43.90%) has medium level of autonomy decision. Region-

wise data revealed that half of the respondents (50.00%) has high level of status was found among women of Kurukshetra (37.20%) in comparison to Mahendragarh district (29.40%).

The results indicated the social decision-making levels of respondents from the districts of Kurukshetra and Mahendragarh. In Kurukshetra, the highest proportion of respondents (48.60%) demonstrated a high level of social decision-making, followed by more than one-fourth (28.30%) who exhibited a medium level. In Mahendragarh, one-third of the respondents (33.90%) were found to have a medium level of social decision-making.

The results revealed that the highest proportion of respondents (42.20%) had a medium level of involvement in religious and cultural decision-making. Region-wise analysis showed that 47.20% of rural women in Kurukshetra and 31.70% in Mahendragarh reported high participation in religious activities.

Table 5: Status of rural women in independent decisions

Independent decisions	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Freedom to choose your job.	85 (47.22)	73 (40.56)	22 (12.22)	58 (32.22)	84 (46.67)	38 (21.11)	803	2.23	V
Free to choose her personal transportation.	68 (37.78)	80 (44.44)	32 (17.78)	42 (23.33)	93 (51.67)	45 (25.00)	753	2.09	VI
Free to choose her investments.	53 (29.44)	68 (37.78)	59 (32.78)	39 (21.67)	57 (31.67)	84 (46.67)	737	2.04	VII
Free to use mobile phone.	122 (67.78)	44 (24.44)	14 (7.78)	98 (54.44)	34 (18.89)	48 (26.67)	878	2.43	III
Free to use social media platforms.	115 (63.89)	56 (31.11)	9 (5.00)	95 (52.78)	48 (26.67)	37 (20.56)	884	2.45	II
Option to go for an outing with friends	113 (62.78)	46 (25.56)	21 (11.67)	87 (48.33)	54 (30.00)	39 (21.67)	860	2.38	IV
Vote according to her preference.	125 (69.44)	42 (23.33)	13 (7.22)	101 (56.11)	52 (28.89)	27 (15.00)	906	2.51	I

Figure in the parentheses denote percentage

Table 6: Status of rural women in respect given aspect

Respect given aspects	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Respect in front of visitors.	109 (60.56)	62 (34.44)	9 (5.00)	87 (48.33)	81 (45.00)	12 (6.67)	895	2.48	I
In family conflicts, her opinion is respected.	81 (45.00)	87 (48.33)	12 (6.67)	68 (37.78)	74 (41.11)	38 (21.11)	819	2.27	II
Intimacy respects her consent.	67 (37.22)	79 (43.89)	34 (18.89)	59 (32.78)	56 (31.11)	65 (36.11)	747	2.07	IV
Contraceptives used with your consent.	95 (52.78)	59 (32.78)	26 (14.44)	74 (41.11)	58 (32.22)	48 (26.67)	815	2.26	III

Figure in the parentheses denote percentage

Table 7: Status of rural women in health and nutrition decisions

Health and nutrition decisions	Kurukshetra			Mahendragarh			TWS	WMS	Rank
	Always	Seldom	Never	Always	Seldom	Never			
Medical treatments as per her choice.	107 (59.44)	65 (36.11)	8 (4.44)	98 (54.44)	90 (50.00)	25 (13.89)	958	2.66	I
Freedom to decide on your immunizations.	97 (53.89)	48 (26.67)	35 (19.44)	78 (43.33)	70 (38.89)	32 (17.78)	828	2.3	IV
Freedom to allocate her funds towards nutritious food.	102 (56.67)	61 (33.89)	17 (9.44)	56 (31.11)	96 (53.33)	28 (15.56)	833	2.31	III
Devote full attention to her health.	98 (54.44)	59 (32.78)	23 (12.78)	89 (49.44)	54 (30.00)	37 (20.56)	847	2.35	II

Figure in the parentheses denote percentage

The results revealed that one-fifth of the respondents (21.10%) had low participation in economic decision-making, while the highest proportion (48.30%) reported a high level of participation. Region-wise analysis showed that one-third of rural women in Kurukshetra (35.30%) had a medium level of participation, whereas one-fourth of rural women in Mahendragarh (25.60%) also reported medium participation in economic decision-making.

The results revealed that the majority of rural women respondents (46.38%) had a medium level of independence in decision-making. Region-wise analysis showed that the highest proportion of respondents in Kurukshetra (45.00%) reported a high level of independence, while more than one-fourth of the respondents in Mahendragarh (28.90%) also demonstrated a high level of participation in independent decision-making.

Table 8: Status level of rural women in decision making in different domains

Autonomy level	Kurukshetra	Mahendragarh	Total
Low (1-10)	23 (12.80)	59(32.80)	82(22.80)
Medium (11-20)	90(50.00)	68(37.80)	158(43.90)
High (21-30)	67(37.20)	53(29.40)	120(33.30)
Social decision level			
Low (1-5)	27(15.00)	46(25.60)	73(20.30)
Medium (6-10)	51(28.30)	61(33.90)	112(31.10)
High (11-15)	102(56.70)	73(40.60)	175(48.60)
Religious and cultural level			
Low (6-9)	23(12.80)	47(26.10)	70(19.40)
Medium (10-13)	72(40.00)	76(42.20)	148(41.10)
High (14-18)	85(47.20)	57(31.70)	142(39.40)
Economic level			
Low (1-4)	19(10.60)	57(31.70)	76(21.10)
Medium (5-8)	64(35.60)	46(25.60)	110(30.60)
High (9-12)	97(53.90)	77(42.80)	174(48.30)
Independence level			
Low (7-11)	24(13.33)	36(20.00)	60(16.66)
Medium (12-16)	75(41.67)	92(51.10)	167(46.38)
High (17-21)	81(45.00)	52(28.90)	133(36.96)
Respect given level			
Low (1-4)	10(5.55)	26(14.44)	36(10.00)
Medium (5-8)	73(40.55)	68(37.77)	141(39.16)
High (9-12)	97(53.90)	86(47.79)	183(50.84)
Health level			
Low (1-4)	7(3.90)	24(13.30)	31(8.60)
Medium (5-8)	51(28.30)	47(26.10)	98(27.20)
High (9-12)	122(67.80)	109(60.60)	231(64.20)

Figure in the parentheses denote percentage

The results indicated the level of respect received by respondents from the districts of Kurukshetra and Mahendragarh. Overall, half of the respondents (50.84%) reported a high level of respect. Region-wise, the majority of respondents in Kurukshetra (53.90%) and the highest proportion in Mahendragarh (47.79%) also reported receiving a high level of respect.

The results indicated the health status of rural women from the districts of Kurukshetra and Mahendragarh. Overall, nearly two-thirds of the respondents (64.20%) reported a high level of health status. Region-wise analysis revealed that more than one-fourth of the respondents in Kurukshetra (28.30%) and one-fourth in Mahendragarh (26.10%) had a medium level of health status, showing a similar trend across both districts.

Correlation of status of rural women with extent of adoption of farm and household technologies

Table 9 presents the relationship between the status of rural women across various dimensions and their extent of adoption of farm and household technologies, using the coefficient of correlation (r) to assess the strength and direction of these associations. The findings reveal that autonomy is positively and significantly correlated with both farm technologies ($r = 0.48$) and household technologies ($r = 0.70$) at the 5% significance level. Similarly, social decision-making shows a significant positive correlation with farm technologies ($r = 0.45$) and household technologies ($r = 0.65$). Religious decision-making also demonstrates a strong positive correlation with farm technologies ($r = 0.62$) and household technologies ($r = 0.68$).

Economic decision-making is significantly correlated with the adoption of farm technologies ($r = 0.41$) and household technologies ($r = 0.58$). Independent decision-making shows a positive and significant correlation with farm technologies ($r = 0.41$) and with household technologies ($r = 0.69$). The aspect of respect received by women also correlates positively with farm technologies ($r = 0.48$) and household technologies ($r = 0.78$). Additionally, health and nutrition-related decision-making shows a significant positive correlation with both farm technologies ($r = 0.41$) and household technologies ($r = 0.48$).

Table 9: Correlation of status of rural women with extent of adoption of farm and household technologies

Sr. No.	Aspects of status	Farm Technologies	Household Technologies
1.	Autonomy	0.48*	0.70**
2.	Social decisions	0.45*	0.65**
3.	Religious and cultural decisions	0.62**	0.68**
4.	Economic decisions	0.41*	0.58*
5.	Independent decisions	0.41*	0.69**
6.	Respect given	0.48*	0.78**
7.	Health and nutrition decision	0.41*	0.48*

* Correlation is significant at 5% level

Overall, the interpretation suggests that the adoption of farm and household technologies by rural women is significantly associated with improvements in their autonomy, social and religious roles, economic decision-making power, respect within the community, and their ability to make informed health and nutrition decisions.

Two sample t-test for comparison of status of rural women between Kurukshetra and Mahendragarh district

The status of rural women in relation to the adoption of farm and household technologies in the districts of Kurukshetra and Mahendragarh was compared, and the results are presented in Table 10. The analysis revealed a significant difference between respondents from the two districts, as

indicated by the calculated t-values. Overall, the status level of rural women was found to be higher in Kurukshetra compared to those in Mahendragarh.

The two-sample t-test revealed significant differences between Kurukshetra and Mahendragarh across all dimensions of women's status. Overall, rural women in Kurukshetra exhibited significantly higher status levels than their counterparts in Mahendragarh.

Table 10: Two sample t-test for comparison of status of rural women between Kurukshetra and Mahendragarh district

Sr. No.	Aspects of status	Kurukshetra (Mean knowledge $\pm$ SD)	Mahendragarh (Mean knowledge $\pm$ SD)	t-value
1.	Autonomy	24.58 $\pm$ 5.26	22.81 $\pm$ 6.35	2.874**
2.	Social decisions	11.80 $\pm$ 2.91	10.56 $\pm$ 3.26	3.799**
3.	Religious and cultural decisions	13.93 $\pm$ 4.00	12.52 $\pm$ 4.52	3.133**
4.	Economic decisions	25.74 $\pm$ 5.97	23.09 $\pm$ 6.94	3.881**
5.	Independent decisions	51.48 $\pm$ 11.94	46.18 $\pm$ 13.88	3.881**
6.	Respect given	77.23 $\pm$ 17.92	69.28 $\pm$ 20.82	3.881**
7.	Health and nutrition decision	128.72 $\pm$ 29.87	115.47 $\pm$ 34.71	3.881**

Figure in the parentheses denote percentage

**Significant at P 1% level

*Significant at P 5% level

Discussion

Rural women in the study districts exhibit significant autonomy in personal decisions, with the highest autonomy in choosing their clothing (mean score: 2.72, ranked 1st), followed by freedom in cooking preferences (mean score: 2.64, ranked 2nd). These findings indicate growing individual agency in everyday choices, a key aspect of empowerment, as per Kabeer (2022). NFHS-5 (2021) reports improvements in women's household decision-making, particularly in personal and health-related choices, fostering self-expression and dignity in patriarchal rural settings.

The analysis of social decision-making autonomy among rural women in Kurukshetra and Mahendragarh districts reveals significant progress in their involvement in family-oriented and educational choices, supported by empirical data and aligned with established research. Rural women exhibited the highest autonomy in decisions related to celebrating special family moments, such as festivals, birthdays, or religious occasions, with a mean score of 2.38 (ranked 1st), followed closely by hosting social events and authority over children's education decisions with mean scores of 2.35 and 2.28 (ranked 2nd and closely related). This growing freedom to participate in celebratory events reflects increasing inclusion, self-worth, and emotional agency within the household, signalling a shift in cultural norms where women's preferences are progressively respected, as noted by UN Women (2022).

Rural women in the study districts demonstrate notable autonomy in religious decisions, with the highest level of agency in accepting gifts from their daughter-in-law's family (mean score: 2.56), and send gifts followed by freedom to worship any deity (2.48 each) and the right to choose home visitors (2.43). These results indicate a shift from traditional norms, where religious and family interaction decisions were typically controlled by male or elder family members, as highlighted by Kabeer (2022) and Agarwal (2021).

Economic autonomy among rural women is evident, with the highest level of independence in opening bank accounts

(mean score: 2.39, ranked 1st), followed by control over their own income (mean score: 2.28, ranked 2nd), reflecting significant strides in financial inclusion. Opening a bank account facilitates savings, credit access, and participation in government schemes like Jan Dhan Yojana, with NFHS-5 (2021) reporting that over 77% of rural women in India now operate their own accounts.

Rural women exhibit significant independence in personal and digital spheres, with the highest autonomy in voting according to their preference (mean score: 2.51, ranked 1st), followed by freedom to use social media platforms (2.45) and mobile phones (2.43). These trends strengthen women's voice and agency, aligning with SDG-5 (Gender Equality) by fostering autonomy in both public and private domains, though barriers like digital literacy gaps require further attention.

The study indicates that rural women receive the most respect in front of visitors (mean score: 2.48, ranked 1st), followed by having their opinions valued during family conflicts (mean score: 2.27, ranked 2nd), reflecting growing recognition of their dignity and voice. Respect in the presence of guests signifies an elevated household status and shifting gender norms, as per UN Women (2022). Valuing women's opinions in disputes marks progress toward inclusive decision-making, supported by NFHS-5 (2021), which links improved intra-household dynamics to education and participation. Kabeer's (2022) framework emphasizes respect as foundational to empowerment, aligning with SDG-5 (Gender Equality) by promoting dignity and equal treatment.

Rural women demonstrate significant autonomy in health and nutrition decisions, with the highest agency in choosing their medical treatment (mean score: 2.66, ranked 1st), followed by devoting attention to their health (mean score: 2.35, ranked 2nd). This reflects increased awareness and control over personal well-being, with NFHS-5 (2021) noting improved healthcare access, particularly in reproductive and maternal health.

The current study reveals a strong positive relationship between rural women's status and the extent of their

adoption of agricultural and household technologies. Correlation coefficients show that autonomy is significantly associated with the adoption of farm technologies ($r = .48$) and household technologies ($r = .70$). Religious and social decision-making also show positive associations—religious decisions correlate at $r = .62$ for farm and $r = .68$ for household technologies. Furthermore, increased economic independence and respect for women are closely linked with greater technological adoption. These findings align with Bhatnagar (2024), who noted that women's participation in household decisions enhances their willingness to use new technologies. Ramasamy emphasized that digital inclusion and community engagement boost women's confidence and knowledge, further supporting adoption. Additionally, economic independence and increased respect for women contribute to greater use of technologies, as seen in Jain & Chatterjee's (2024) study linking financial empowerment to better adoption rates.

A two-sample t-test comparing rural women's status in Kurukshetra and Mahendragarh revealed a significant difference, with women in Kurukshetra showing higher status levels related to the adoption of farm and household technologies. The higher status in Kurukshetra may stem from better access to education, extension services, and institutional support, which enhance women's autonomy and technology adoption. In contrast, Mahendragarh faces more socio-cultural barriers and limited outreach efforts (Sharma & Kaur, 2023; Verma & Rath, 2024). Digital access and regional infrastructure also play a key role in enabling women's empowerment.

The findings of the study clearly indicate that women's status in rural areas is multidimensional and uneven across different domains. Higher participation in personal, religious, and health-related decisions suggests that certain traditional norms allow women autonomy in spheres perceived as extensions of their domestic roles. However, limited participation in economic and agricultural decisions reflects persistent patriarchal control over productive resources.

The strong positive association between women's status and the adoption of farm and household technologies supports the argument that technology acts as a catalyst for empowerment. Access to technology not only reduces physical labor but also enhances women's confidence, skills, and bargaining power within the household. These findings align with Sen's capability approach, which emphasizes that development should expand people's freedoms and choices.

Regional differences observed in the study may be attributed to variations in socio-economic development, access to extension services, educational levels, and exposure to development programs. The higher status of women in Kurukshetra suggests that localized development interventions can significantly influence gender outcomes.

Conclusion

The study concludes that the status of rural women is significantly influenced by their participation in decision-making across multiple domains and is positively associated with the adoption of farm and household technologies. While rural women demonstrate considerable autonomy in personal, religious, and health-related decisions, gaps

remain in economic and agricultural decision-making. The findings highlight the need for gender-sensitive policies and technology dissemination programs that actively involve women and strengthen their decision-making capacities. Enhancing women's access to technology, financial resources, and education can play a crucial role in improving their overall status and promoting inclusive rural development.

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