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Identifying the dimensions of empowerment and their impacts on food security in rural women

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Abstract

Food security remains a critical issue among rural female-headed households, who often face economic, social, and structural disadvantages. Understanding how empowerment in various dimensions influences food security is essential for developing effective interventions. The present study was conducted to identify the empowerment dimensions of female-headed households in rural areas and their effects on food security in Iran country. Based on the data collected from the Iranian Statistical Center, the statistical population of rural women-headed households of Tehran province included 495 individuals, from which 216 were selected using the stratified random sampling method with proportional allocation. A questionnaire was designed by researchers and its validity and reliability was confirmed by confirmatory factor analysis and Cronbach method, respectively. The data were collected from November 2020 to July 2021. Structural equation modeling was used to analyze and estimate relationships among multiple variables. The results confirmed that grouping work and communication skills, creativity and solving problem, commitment and responsibility, information and specific knowledge, technical skills and operational work, psychological factors, social factors, political factors, economic factors, managerial factors and educational factors as dimensions of empowerment and also their effects on food security. Commitment and responsibility, economic factors and grouping work had the highest effects on food security, respectively. Job empowerment predicted a 75.00% variance in food security and it is suggested to consider job empowerment of female-headed households in rural areas to decrease food insecurity.

Keywords: Empowerment, Rural women, Food security, Female-headed households, Social and economic empowerment, Gender and food security.

INTRODUCTION

Poverty is a global challenge that mainly influences human societies in rural areas, especially in non-developing countries and rural women-headed households *(Abrar ul haq et al.*, 2019).

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Women-headed households are usually faced with several challenges and are one of the most vulnerable groups in different societies in terms of poverty and food security (Daoud *et al.*, 2019; Dunga, 2020). Food security is defined as permanent physical, social and economic access to sufficient, safe and nutritious food to supply dietary requirements and food preferences for an active and healthy life (Galiè e*t al.*, 2019). It is estimated that 800 million people are undernourished across the globe who do not receive adequate nutritional content and calories (Pakravan-Charvadeh e*t al.*, 2020). Women-headed households are more vulnerable to food insecurity compared to men-headed households due to low present in the labor market and productive activities, housekeeping and child care (Mallick and Rafi, 2010). A major portion of women-headed households lives in developing countries and in rural regions (Van Eerdewijk *et al.*, 2017). Social and cultural factors and expectations have prevented rural women from participating in the development programs (Sarani *et al.*, 2013). Despite the key role of rural women-headed households as suppliers of food security, income earners, and caretakers of households and children, they have been disempowering in society. Empowerment might be a key factor in improving food security in rural women-headed households in developing countries.

Empowerment is defined as controlling decision-making about his and/or her life and giving the ability to intervene in all life challenges (Baig *et al.*, 2018). This conception not only comprises extrinsic control but it also involves the development of intrinsic capabilities (Abrar-ul-Haq *et al.*, 2018). It initiates foundations for understanding available opportunities to women. Although, most studies have emphasized the positive effects of empowerment in increasing food security and decreasing food insecurity (Asitik and Abu, 2020; Galiè *et al.*, 2019; Ntenkeh *et al.*, 2022; Sharaunga *et al.*, 2016), factors affecting empowerment are not the same in other countries. It is essential to identify factors empowering women in each country. Rural women in Iran mostly perform housekeeping, care of children, farming, tailoring, carpet weaving, and work at home. It was recently reported that 32% of Iranian families are faced with food insecurity (Pakravan-Charvadeh *et al.*, 2020).

Although previous studies have emphasized the role of empowerment in increasing food security, they lack specific focus on the challenges and empowerment dimensions for women-headed households in rural areas, especially in countries like Iran. This study aims to identify the unique empowerment dimensions affecting food security specifically for rural women-headed households in Iran, contributing to a localized understanding of the issue. The research brings an innovative approach by considering not just economic, but other possible dimesnions

to women's empowerment and food security in rural areas. The study aims to identify empowerment dimensions affecting food security in rural women-headed households in Iran.

THEORETICAL FOUNDATION

Empowering factors

Empowerment is a multi-dimensional factor and it can influence food security. It comprises intrinsic capabilities such as empowerment factors and job skills and communications that develop empowerment (Asitik and Abu, 2020; Galiè *et al.*, 2019; Ntenkeh *et al.*, 2022; Sharaunga *et al.*, 2016). Economic factors are one of the most important factors in the life of the women-headed households in rural areas (Sharma, 2019). Income generation, financial independence, and control over finances directly improve food security. Another factor affecting women's empowerment is social factors. Social factors allow women to develop their lives in a holistic framework. These factors help women to develop their lives in a holistic framework (Sharma, 2019). Participation in social networks and community involvement enhances access to resources and support and better food security. Psychological factors are another component of empowerment. It was reported that the increase in feelings of self-efficacy among people help to identify intrinsic empowerment (Muduli and Pandya, 2018). Self-efficacy, resilience, and adaptability lead to proactive behavior and greater food security. Political factors may influence women's empowerment. The political empowerment of women is a result of awakening at the individual and social levels to enable women who live with dignity (Sharma, 2020). Involvement in political processes helps women advocate for better governance and policies affecting food access. Women's education and using educational systems is an important strategy for empowering women (Savari et al., 2020). Education and skills development provide better employment opportunities, indirectly improving food security. Women with management ability may have a better feeling of self and their empowerment. Decision-making and resource management strengthen women's ability to ensure household food security.

H1: Economic, social, psychological, political, educational and managerial factors (Empowering factors) are dimensions of empowerment and can independently affect food security of women-headed households in rural areas.

Job skills and communications

Participation of women in grouping works and using other experiences and opinions may empower rural women. The ability to communicate with others seems to be a strategy for

empowering women. Other factors associated with empowerment may be creativity and solving problems. Creativity is the production of new and profitable ideas by persons in a working environment. Empowered people prefer to solve their problems and use creative solutions. Commitment and responsibility are important factors that may influence empowerment. Responsible and committed women try to maintain values in a working environment, correctly perform their tasks, show their interest in learning new subjects and have a positive view of working environments. It was reported that communication channels create several jobs in rural areas for Iranian women (Savari *et al.*, 2020). Thus, access to information and specific knowledge may empower rural women and indirectly food security. Women with technical skills can produce jobs for themselves. Such skills can decrease injuries and damage in working environments. They perform their job tasks in minimum time and decrease their costs.

H2: Creativity and solving problems, communication skills and grouping work, commitment and responsibility, information and specific knowledge and practical work and technical skills (Job skills and communications) are dimensions of empowerment and can independently affect food security of women-headed households in rural areas.

We hypothesized that job skills and communications and empowering factors influence food security.

H3: Empowerment influences food security of women-headed households in rural areas.

LITERATURE REVIEW

A study investigated the effects of women empowerment in rural areas in South Africa and showed that female-headed households with better economic conditions, physical capital empowerment, psychological empowerment and farm financial management skills had better food security (Sharaunga *et al.*, 2016). An original study in Iran investigated the role of educational channels in improving household food security in Iranian rural women (Savari et al., 2020). Recently, a study showed a positive relationship between women's empowerment and food security in Cameroon (Ntenkeh *et al.*, 2022). Another study investigated determinants of food security among female-headed households in South Africa and showed that age, race, income and size of the household have significant effects on food security (Dunga, 2020). It was reported a positive relation between women's empowerment and food security and emphasized social, cultural, economic and educational factors for improving empowerment (Meti and Sathish, 2016). Another study found a significant positive relationship between the economic dimension of empowerment and food security in communities in Tanzania (Galiè *et*

al., 2019). It was reported that empowered women enhance household food security (Asadullah and Kambhampati, 2021). A positive link has been found between women's empowerment and food security (Aziz *et al.*, 2022). It has been reported that socio-economic factors play significant roles in women's food security (Clement *et al.*, 2019). The current study investigates comprehensive factors affecting empowerment in Iranian women that have not been previously investigated in female-headed households in rural areas.

METHODOLOGY

Statistical population, sample and sampling method

This applied, descriptive study aimed to explore the empowerment dimensions of female-headed households in Tehran Province, Iran, and their effects on food security. The statistical population comprised 495 women, based on data from the Statistical Center of Iran. Tehran Province was divided into ten rural districts, each treated as a separate stratum. A stratified sampling method with proportional allocation was used to ensure appropriate representation from each district. The sample size was determined using Cochran's formula, and 216 women were selected to participate in the study.

Measurements

The indicators used in the two self-constructed questionnaires for empowerment and food security are presented in Table 1.

Table 1. The indicators used in the two self-constructed questionnaires.

Indicators	Number of items	Scoring	References
Empowerment		**Likert scale (1-5)**	
Grouping work and communication skills	7		Authors
Creativity and solving problem	6		Authors
Commitment and responsibility	6		Authors
Information and specific knowledge	5		Authors
Technical skills and operational work	5		Naseri *et al.*, (2020)
Psychological factors	9		Naseri *et al.*, (2020)
Social factors	9		Naseri *et al.*, (2020)
Political factors	5		Naseri *et al.*, (2020)
Economic factors	6		Naseri *et al.*, (2020)
Managerial factors	7		Authors
Educational factors	7		Authors
Food security		**Likert scale (0-5)**	
Accessibility	6		FAO (2016) WFP (2018)
Availability	6		Coates *et al.*, (2007) FAO (2016) USDA (2020)
Utilization	7		WHO (2019)
Stability	4		FAO (2016) WFP (2018)

Additionally, demographic variables such as age, education, employment status, family size, and annual income were collected to provide context for the analysis. The data were collected from November 2020 to July 2021.

Validity and reliability of questionnaires

To ensure the validity and reliability of the instruments, confirmatory factor analysis (CFA) was conducted on all theoretical constructs. CFA was employed to validate the measurement models of both empowerment and food security, following the guidelines of previous studies (Magnier-Watanabe et al., 2020; Yang & Hsu, 2018). Reliability was assessed using Cronbach's alpha, ensuring internal consistency of the scales.

Data analysis

Structural equation modeling (SEM) was used to analyze the relationships between the empowerment dimensions and food security. Both CFA and SEM were conducted using AMOS software (version 24). SEM allowed for the estimation of direct and indirect effects among multiple variables, providing a comprehensive understanding of how different dimensions of empowerment influence food security outcomes.

RESULTS

Descriptive statistics

The results indicated that the average age of female-headed households in rural areas was 48.28 years, with a standard deviation of 11.55 years. The majority of the women were between 31 and 60 years old. Most had only primary education (41.20%), while a smaller proportion had attained a high school diploma or higher education. A significant portion of the women were unemployed (24.53%), with the remainder engaged in various occupations, including service work (18.51%), tailoring (15.27%), peddling (13.88%), carpet weaving (11.57%), farming (2.31%), and other jobs (13.93%). The average annual income of these households was 85 million IRR. It is also noteworthy that unemployed women were under the supervision of supporting institutions.

The means and standard deviations for the constructs were as follows: grouping work and communication skills (2.77± 0.88), creativity and solving problem (3.01±0.90), commitment and responsibility (3.26±1.02), information and specific knowledge (2.94±0.94), technical skills and operational work (3.22 ± 1.00), psychological factors (3.16 ± 0.86), social factors (3.08±0.78), political factors (2.63±1.01), economic factors (2.24±0.86), managerial factors

(2.75±0.81), educational factors (2.70±0.99), access (2.23±0.84), availability (2.42±0.80), utilization (2.69±1.10) and stability (2.57±0.74).

Table 2 displays the correlations between these constructs. The analysis revealed positive correlations among all variables.

Analysis of the measurement models

The validity and reliability of the individual measurement models were assessed following the methodologies outlined by Yang and Hsu (2018). The results are summarized in Table 3. CFA and model fit indices confirmed that all items appropriately fit their respective constructs. According to previous research (Magnier-Watanabe et al., 2020), the recommended fit indices are as follows: normed chi-square less than 3.00, RMR less than 0.09, NFI greater than 0.90, and IFI and TLI greater than 0.95. Hair et al. (2010) suggest that the values for each construct should fall between 0.5 and 0.9, with reliability values exceeding 0.7. The obtained values in this study were all above 0.7, confirming the internal consistency and reliability of each scale.

202 **Table 2.** Correlation between constructs.

	GC	CS	CR	IS	TS	PF	SF	POF	EF	MF	EDF	ACC	AVA	UTI	ST
GC		0.893***	0.836***	0.798***	0.792***	0.506***	0.509***	0.298*	0.363***	0.389***	0.360***	0.373***	0.133*	0.523***	0.383***
CS			0.873***	0.807***	0.773***	0.505***	0.520***	0.272***	0.325***	0.506***	0.369***	0.379***	0.135*	0.532***	0.269***
CR				0.886***	0.832***	0.529***	0.520***	0.265***	0.373***	0.538***	0.378***	0.350***	0.150***	0.557***	0.506***
IS					0.865***	0.533***	0.533***	0.269***	0.335***	0.531***	0.532***	0.530***	0.139*	0.537***	0.533***
TS						0.512***	0.372***	0.238***	0.333*	0.523***	0.510***	0.505***	0.133*	0.536***	0.518***
PF							0.765***	0.518***	0.566***	0.725***	0.685***	0.372***	0.179*	0.508***	0.533***
SF								0.593***	0.325***	0.675***	0.629***	0.376***	0.163*	0.533***	0.512***
POF									0.503***	0.363***	0.352***	0.263***	0.166*	0.313***	0.360***
EF										0.563***	0.306***	0.317***	0.215**	0.338**	0.336***
MF											0.739***	0.512***	0.195*	0.372***	0.386***
EDF												0.501***	0.130*	0.390***	0.526***
ACC													0.339***	0.693***	0.555***
AVA														0.333***	0.332***
UTI															0.659***

203 Constructs as follows; Grouping work and communication skills (GC), creativity and solving problem (CS), commitment and responsibility (CR), information and specific
204 knowledge (IS), technical skills and operational work (TS), psychological factors (PF), social factors (SF), political factors (POF), economic factors (EF), managerial factors
205 (MF), educational factors (EF), accessibility (ACC), availability (AVA), Utilization (UTI) and stability (ST). Superscripts *, and *** show significant correlation at P<0.05 and
206 P<0.0001, respectively.

207 **Table 3**. Constructs and reflective indicators.

Constructs and reflective indicators	Loading
Empowerment (χ^2= 42.47, df= 24; CFI= 0.93; RMR= 0.031; IFI= 0.96; TLI= 0.97)	
Grouping work and communication skills (Cronbach's α= 0.759; CR= 0.865; AVE= 0.623)	
Reflection of facts in presenting feedback is common in my work environment	0.523
I express my opinion in relation to job issues	0.598
I receive a good reaction along with patience from others.	0.502
I am interested in the transformation of information and experiences to others.	0.523
I have a devotion to solving challenges in the working environment.	0.589
Coordination and integrity are found between my colleagues.	0.569
I use my supervisor's ideas and my colleague's for solving problems.	0.567
Creativity and solving problem (Cronbach's α= 0.796; CR= 0.802; AVE= 0.551)	
I solve working issues through data collection and analysis.	0.509
I consider various aspects of a problem.	0.521
I use opportunities for creating positive changes in my life.	0.598
I am interested in new experiences and experiments	0.595
I present new strategies for job issues.	0.569
I suggest new strategies for performing job tasks.	0.567
Commitment and responsibility (Cronbach's α= 0.899; CR= 0.815; AVE= 0.665)	
I am on time in the working environment.	0.595
I try to maintain values in the working environment.	0.502
I correctly conduct working tasks.	0.685
I am interested to increase knowledge and job skills.	0.672
I have a positive view of the working environment.	0.621
I have actively participation in educational periods for improving technical skills.	0.512
Information and specific knowledge (Cronbach's α= 0.752; CR= 0.785; AVE= 0.515)	
I have sufficient information for equipment and tools in working environment.	0.526
I have obtained general knowledge for my job.	0.612
Job purposes are achieved by required knowledge.	0.570
I need a presence in educational periods for improving information and specific knowledge.	0.572
I have sufficient information for quality and activity standards.	0.525
Technical skills and practical work (Cronbach's α= 0.717; CR= 0.709; AVE= 0.589)	
I correctly use equipment in the working environment.	0.599
I have standardized job skills.	0.597
Damages and injuries have decreased in the working environment.	0.598
I perform job tasks in minimum time and for improving working quality.	0.602
I use raw materials in a true way.	0.707
Psychological factors (Cronbach's α= 0.717; CR= 0.741; AVE= 0.576)	
I feel myself to be a valuable human.	0.712
I feel to have several good characteristics.	0.511
I can well conduct several works.	0.541
I have a good view of myself.	0.539
I have abilities for the expression of opinions in family meetings.	0.614
My member family uses my opinions.	0.647
I am a determiner of interactions of my member family with others.	0.615
I have abilities for changing the conditions of my life based on current possibilities.	0.523
I am independent in solving problems.	0.516
Social factors (Cronbach's α= 0.802; CR= 0.773; AVE= 0.562)	
I am interested in participation in grouping works.	0.506
I have interactions with kinfolk and neighbors.	0.501
I participate in different meetings.	0.605
I consult others for different problems.	0.712
I participate in community-oriented educational classes.	0.597
I have the ability for finding new friends.	0.522
Political factors (Cronbach's α= 0.739; CR= 0.752; AVE= 0.562)	
The services given by the village council are efficient for improving my job.	0.553
Political decisions influence my life.	0.552
I participate in elections.	0.551
Decisions of local agents for rural regions influence my life.	0.514

I participate in meetings of people agents and managers.	0.595
Economic factors (Cronbach's α= 0.702; CR= 0.717; AVE= 0.645)	
I have access to facilities and a bank loan.	0.516
I participate in the microfinance credits fund.	0.667
I participate in activities of consumers' co-operative.	0.547
I provide the required equipment and facilities for myself and member family.	0.702
I decide on financial resources and ways for spending them.	0.502
I feel to be valuable women activities in society.	0.540
Managerial factors (Cronbach's α= 0.751; CR= 0.820; AVE= 0.598)	
I have abilities for handling my job.	0.589
I participate in local meetings.	0.597
I have enough ability for supplying local products.	0.606
My job is affecting society.	0.641
I can manage crises in my life.	0.578
I manage economic issues in my life.	0.641
I can manage my assets.	0.529
Educational factors (Cronbach's α= 0.796; CR= 0.824; AVE= 0.591)	
I feel rural women appreciate educational periods.	0.532
I feel that potential trainers educate us.	0.541
Educational contents are in agreement with my requirements.	0.537
It is possible to combine science and practice	0.536
All skills and educations are various.	0.541
I have the ability for learning professional skills.	0.546
I feel educational classes are in agreement with my requirements.	0.527
Food security ($\chi 2$= 43.12, df= 24; CFI= 0.98; RMR= 0.033; IFI= 0.97; TLI= 0.98)	
Access (Cronbach's α= 0.741; CR= 0.736; AVE= 0.565)	
My required food is in access.	0.632
My required food for my children is in access.	0.541
Various foods are in access to us.	0.571
Food supplier centers are in access.	0.569
Food supplier centers supply enough food.	0.502
Food supplier centers supply high-quality foods.	0.622
Availability (Cronbach's α= 0.741; CR= 0.751; AVE= 0.598)	
I have enough income for purchasing the required foods for my body.	0.571
I have enough income for purchasing the required foods for my children.	0.533
I have enough income for providing dietary diversity.	0.625
Price fluctuations influence dietary diversity.	0.593
My income is one important factor in purchasing interesting foods.	0.576
My saving is affected by purchasing in an emergency condition.	0.588
Utilization (Cronbach's α= 0.912; CR= 0.755; AVE= 0.717)	
Knowing quality affects food utilization.	0.555
Knowing calories affects food utilization.	0.575
Foods with low waste influence their utilization.	0.632
Knowing diets influence food utilization.	0.509
Knowing food benefit influences food utilization.	0.707
An appropriate food program for family members influences food utilization.	0.812
Having an appropriate food program for children influences food utilization.	0.589
Stability (Cronbach's α= 0.763; CR= 0.751; AVE= 0.613)	
Required foods are constantly supplied in the market.	0.645
Foods are scarce in undetermined and unpredictable times.	0.512
Suppliers immediately supply scarce foods.	0.507
Precise mechanisms are considered and performed for keeping stability.	0.596

Structural equation modeling

To avoid ambiguity and complexity, we considered the mean of constructs and did not use items for SEM. A SEM was built and the results are shown in Figure 1. The results for model-

fitting showed that empowerment and food security had a good fit for the data with fit indices ($\chi 2/df=1.86$, CFI=0.98; NFI= 0.98; IFI= 0.97; TLI=0.98; RMR=0.032; RMSEA=0.036).

The results in Figure 2 for model-fitting showed that empowerment dimensions and food security had a good fit for the data with fit indices ($\chi 2/df=1.71$, CFI=0.96; NFI= 0.95; IFI= 0.96; TLI=0.97; RMR=0.036; RMSEA=0.041).

The results for the SEM of the effects of empowerment and its dimensions on food security are shown in Table 4. The results show that empowerment predicts 75% of the variance in food security. To investigate the hypotheses, we ran another model comprising items and the results are shown in Table 4 and Figure 2.

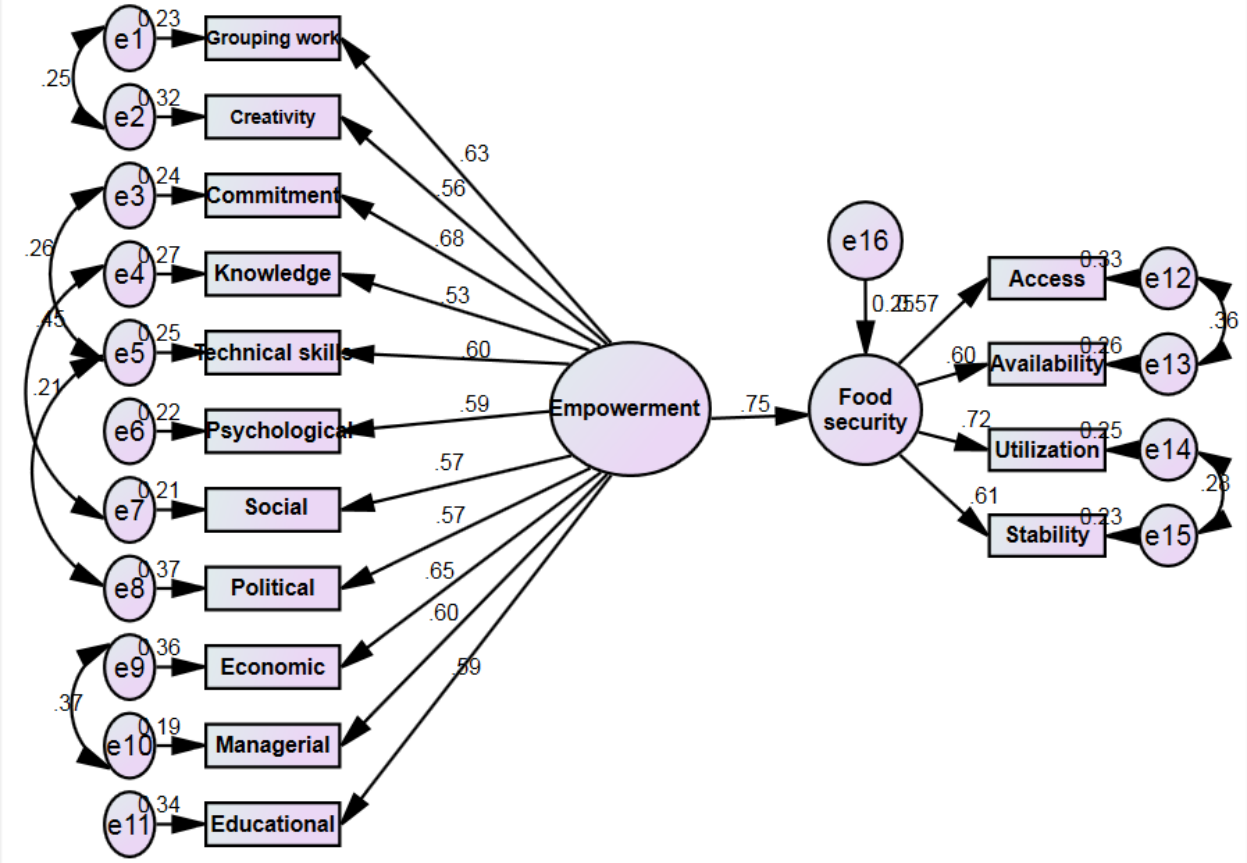

Fig. 1 Results of structural equation modeling for the effect of empowerment on food security.

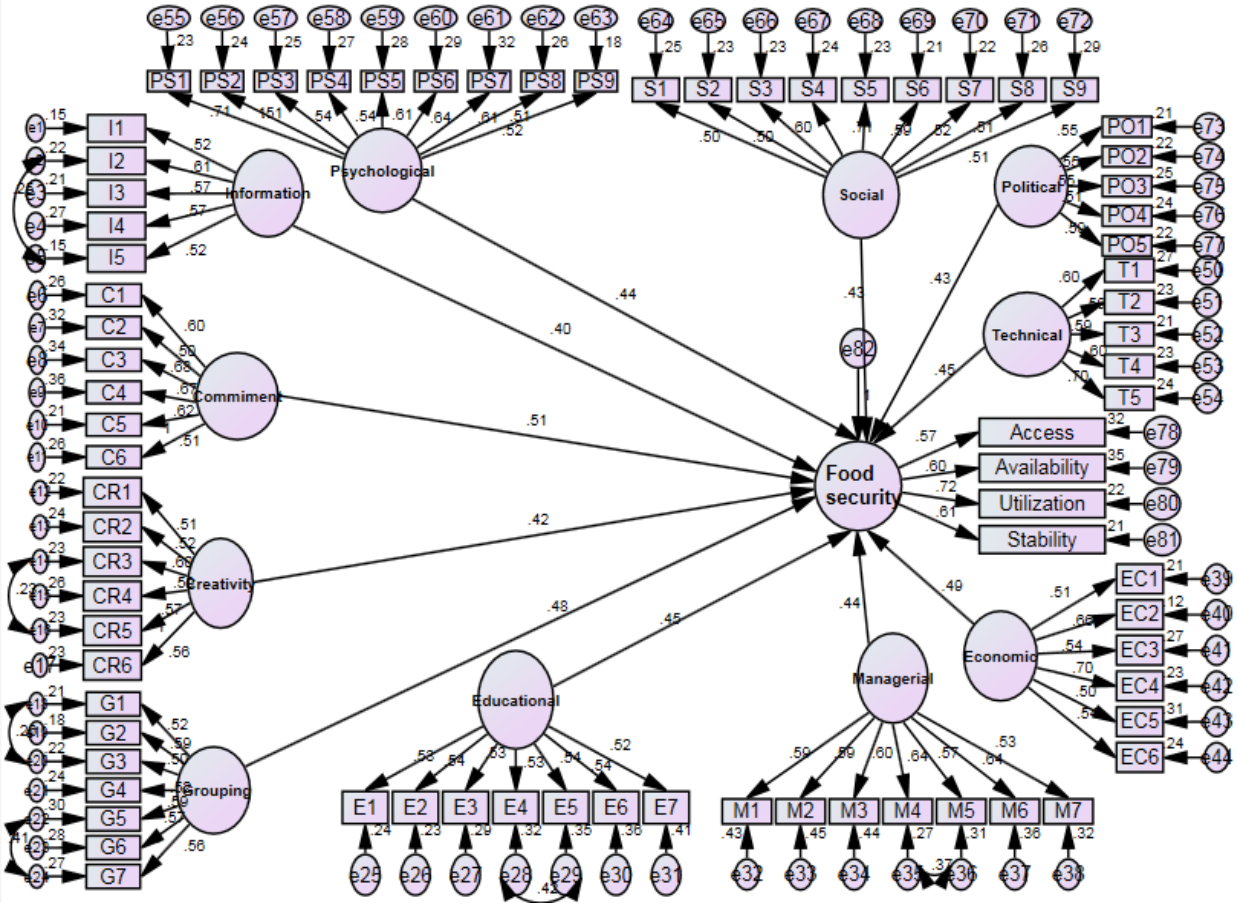

Fig. 2 Results of structural equation modeling for the effect of empowerment dimensions on food security.

The results of the effects of the empowerment construct on food security are shown in Table 4. The results in Table 4 confirmed all the hypotheses. All the constructs predicted food security. Commitment and responsibility, economic factors and grouping work predicted 51.00%, 49.00% and 48.00% of the variance of food security, respectively. The results also showed that job skills and communications and empowering factors predicted 61% and 58% of the variance of food security, respectively. The model was run twice. The first run assessed the effects of factors as dimensions of empowerment, which allowed for an evaluation of the overall empowerment effect.

Table 4. The Results of SEM for the effects of constructs on food security**.

Relationship	Estimates	C.R.	P-value
Empowerment→Food	0.75	6.92	0.001
Grouping work→Food	0.48	4.42	0.001
Creativity→Food	0.42	3.87	0.001
Commitment →Food	0.51	4.70	0.001
Information→Food	0.40	3.68	0.001
Technical skills →Food	0.45	4.14	0.001
Psychological→Food	0.44	4.05	0.001
Social→Food	0.43	3.96	0.001
Politicial→Food	0.43	3.95	0.001
Economic→Food	0.49	4.51	0.001
Managerial →Food	0.44	4.05	0.001
Educational→Food	0.45	4.15	0.001

DISCUSSION

The empirical role of empowerment and its dimensions as independent variables in enhancing food security is newly revealed by this study. In line with previous research, the findings demonstrate that empowerment accounts for a 75.00% variance in food security. (Clement *et al.*, 2019; Sharaunga *et al.*, 2016).

Group work and communication abilities predicted differences in food security and empowerment by 48.00% and 63.00%, respectively. Through improved decision-making, negotiation, and leadership, communication promotes the sharing of information and experiences, thereby increasing empowerment (Mishra and Mishra, 2020). The ability to articulate ideas clearly enhances women's self-esteem and strengthens their contributions to family or community food security plans. Working in groups offers individuals the opportunity to solve problems and exchange experiences. These social partnerships can promote collective empowerment by addressing issues collaboratively, transforming women's individual abilities into community-based solutions for food security while also providing emotional and practical support.

Food security and empowerment are influenced by creativity and problem-solving. Women with creative minds can develop innovative ways to raise living standards in rural areas, such as launching new businesses or adopting sustainable farming methods. Women who apply their creativity are better equipped to leverage local resources, reduce risks, and identify new sources of income, thereby strengthening their ability to provide food for their families.

Food security and empowerment were most impacted by commitment and responsibility (β=0.68). Commitment represents a strong intrinsic drive to provide sufficient food for families, particularly in female-headed households. Women's sense of duty to their families and children

motivates them to take the initiative in developing their skills and ensuring food security by seeking reliable sources of income, improving agricultural yields, or securing high-quality food products.

Disparities in food security and empowerment were predicted by specific knowledge and information to be 40.00% and 53.00%, respectively. Women with access to timely and relevant information are better equipped to make informed decisions about nutrition, food production, and household management. Another important factor is women's participation in training programs or knowledge-sharing networks, which help them progress into more empowered and financially stable roles.

Technical skills and practical work predicted 60.00% and 45.00% of the variations in empowerment and food security, respectively. These abilities provide women with opportunities to work in occupations that can increase income and improve living standards. Women who possess technical skills in business, crafts, or agriculture are evidently better able to empower themselves and contribute to their households' food security.

Both food security (β=0.44) and empowerment (β=0.59) were significantly influenced by psychological factors. Long-term food security relies on women's ability to manage risks and seize opportunities, both of which are strengthened by psychological well-being (Ahmed and Malik, 2019). When faced with obstacles, psychologically empowered women are more likely to persist, whether through education, starting a business, or adopting improved farming methods.

Social and political factors alone predicted 43.00% of the variance in food security and 57.00% in empowerment. When women participate in community organizations, cooperatives, or political systems, they gain platforms for advocacy, resource access, and mutual support. In rural regions especially, women can influence decisions that shape food security policies through political engagement. Participation in social groups enhances women's agency and voice, opening opportunities for collective action that can improve both community-wide food security and individual empowerment.

Economic considerations had a significant impact on both food security (β=0.49) and empowerment (β=0.65). These findings align with documented research on the influence of economic factors on food security (Ali *et al.*, 2019; Oni *et al.*, 2010). Food security improves directly when women have access to economic resources, such as land ownership, credit, and financial capital, allowing them to invest in productive assets like business or farming equipment. Additionally, 60% of the variance in empowerment was explained by managerial

factors, which enable women to manage resources effectively and balance economic activities with domestic responsibilities, thereby supporting food security.

Food security was significantly impacted by educational characteristics, similar to other factors. Education provides women with the technical know-how, social skills, and critical thinking abilities necessary for managing food production, finding employment, and participating in community decision-making. Educational initiatives, particularly those emphasizing employable, real-world skills, can greatly aid in reducing food insecurity.

There are limitations to this study. The exclusive emphasis on a specific rural group may restrict the broader applicability of the results to other cultural or regional contexts. Significant differences in socioeconomic and cultural factors influencing empowerment and food security in rural developing nations compared to urban areas or other regions may limit the generalizability of the findings. To better understand how various groups of women perceive empowerment, future research should consider intersectional aspects such as age, ethnicity, class, and disability. Although the study discusses several empowerment-related aspects, it falls short in addressing external factors that can directly impact food security in rural areas, such as market access, government policy, and climate change.

CONCLUSIONS

In summary, empowerment and its components significantly impacted food security individually. To enhance women's empowerment and food security, it is essential to educate them about the largely internal factors involved. We propose that local institutions, NGOs, and government agencies collaborate to establish community-based skill development centers specifically designed for rural women to improve food security and empowerment in these areas. In addition to partnering with local media for educational outreach, they must implement practical technical training that incorporates safety precautions. The centers should also support women-led cooperatives by facilitating peer learning and access to microfinance. Furthermore, strong monitoring and evaluation procedures must be established to track progress and make necessary program adjustments.

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شناسایی ابعاد توانمندسازی و تأثیر آن بر امنیت غذایی زنان روستایی

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چکیده

امنیت غذایی در میان زنان سرپرست خانوار روستایی که اغلب با آسیب های اقتصادی، اجتماعی و ساختاری مواجه هستند، همچنان یک مسئله حیاتی است. درک اینکه چگونه توانمندسازی در ابعاد مختلف بر امنیت غذایی تأثیر می گذارد برای توسعه مداخلات مؤثر ضروری است. پژوهش حاضر با هدف شناسایی ابعاد توانمندسازی زنان سرپرست خانوار روستایی و تأثیر آن بر امنیت غذایی کشور انجام شد. بر اساس داده های جمع آوری شده از مرکز آمار ایران، جامعه آماری زنان سرپرست خانوار روستایی استان تهران شامل 495 نفر بود که از بین آنها 216 نفر به روش نمونه گیری تصادفی طبقه ای با تخصیص متناسب انتخاب شدند. پرسشنامه ای توسط محققین طراحی شد که روایی و پایایی آن به ترتیب با روش تحلیل عاملی تاییدی و روش کرونباخ تایید شد. داده ها از نوامبر 2020 تا ژوئیه 2021 جمع آوری شد. از مدل سازی معادلات ساختاری برای تجزیه و تحلیل و برآورد روابط بین متغیرهای چندگانه استفاده شد. نتایج نشان داد که گروه بندی مهارت های کاری و ارتباطی، خلاقیت و حل مسئله، تعهد و مسئولیت، اطلاعات و دانش خاص، مهارت های فنی و کار عملیاتی، عوامل روانی، عوامل اجتماعی، عوامل سیاسی، عوامل اقتصادی، عوامل مدیریتی و عوامل آموزشی به عنوان ابعاد توانمندسازی و همچنین اثرات آنها بر امنیت غذایی. تعهد و مسئولیت، عوامل اقتصادی و کار گروهی به ترتیب بیشترین تأثیر را بر امنیت غذایی داشتند. توانمندسازی شغلی واریانس 75.00 درصدی را در امنیت غذایی پیش‌بینی کرد و پیشنهاد می‌شود برای کاهش ناامنی غذایی، توانمندسازی شغلی زنان سرپرست خانوار روستایی در نظر گرفته شود.