



INVESTIGATING THE IMPACT OF EMPLOYMENT EMPOWERMENT OF RURAL FEMALE-HEADED HOUSEHOLDS ON THEIR FOOD INSECURITY

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ABSTRACT

The present study aims to investigate the impact of employment empowerment of rural female-headed households on their food insecurity. This research is applied in terms of purpose, descriptive in terms of method, and field-based in terms of data collection. Moreover, this study adopts a quantitative methodological approach. The statistical population consists of all rural female-headed households covered by the Welfare Organization and the Imam Khomeini Relief Committee in Tehran Province. Cochran's formula is used to determine the sample size, and proportional allocation sampling is applied for sample selection. The data collection instrument is a questionnaire developed based on theoretical studies and their findings. It is noteworthy that one of the simple tools proposed for directly measuring food security is the Radimer-Cornell questionnaire. To examine the reliability of the research questionnaire, 30 rural women were randomly selected, and the questionnaire was completed by them, followed by a refinement of the variables. SPSS 24 and Amos 24 software are used for data analysis. The results, based on the examination of path coefficients, indicate a significant relationship between employment empowerment of rural female-headed households and food security ($\beta=0.32$, $p=0.001$), significant at the level of $P < 0.05$. Therefore, the relationship between empowerment of rural women and food security is confirmed as significant.

Keywords: Employment empowerment of women, Food security, Female-headed households, Rural women.

INTRODUCTION

Food security has always been a complex and multifaceted issue throughout history (Morisaki, 2011 & Smith, 2013), drawing the attention of many scholars, experts, researchers, and policymakers (Godfray et al., 2010). According to international organizations, about one-third of the food produced for human consumption globally is lost or wasted each year (Gustavsson et al., 2011). This occurs while the current global conditions — including rapid population growth, economic and income growth, climate and environmental changes, and shifting dietary habits — have made the challenge of food security even more apparent (Carletto et al., 2013). A recent United Nations report on global food security and nutrition indicates that, after a decade of decline, the hunger rate has risen again, with approximately 815 million people — 11% of the world's population — experiencing hunger and malnutrition in 2016, of whom 520 million reside in Asia (Gloay, 2009). Currently, developing countries such as India, Bangladesh, Ethiopia, Zambia, Egypt, Algeria, Tunisia, and Iran, each with differing economic structures, have undertaken subsidy programs to enhance food security for their populations (FAO, 2015). In this context, it should be noted that food insecurity poses a major barrier to welfare and development. Without serious and fundamental solutions, humanity will undoubtedly face a vague and uncertain future. The issue of food security transcends borders and becomes a global concern. Hence, eliminating hunger and malnutrition must reclaim a significant place in human thought, and improving food security should be regarded as a key goal in human development — one that must be embedded within the core of policies, priorities, and development programs (Sheikh-e-Islam, 2012).

Various studies indicate that women participate in the production, processing, and consumption of food in multiple ways, with their role in production growing increasingly prominent. Despite this, their empowerment in accessing food security has been underappreciated globally, and their capacities for improving food security remain underutilized (Ali Shahi et al., 2007). Women can be considered among the most influential social groups in rural life. Their situation is such that they are responsible both for domestic tasks and productive activities. Rural women, while being homemakers and responsible for child care and upbringing, are also engaged in agricultural activities, animal and poultry husbandry, handicrafts, and sometimes in selling products and purchasing family necessities (Faraji Sabokbar, Khaki, & Nemati, 2009). Rural women play a key role, particularly during crises, in ensuring health and food security. Despite their significant contribution to global food provision, this segment of the population is often overlooked or neglected in development strategies (Savari et al., 2014, citing Cassman, 2012). Meanwhile, the capabilities of rural women have historically been undervalued, and their potential for building a better life for themselves, their families, and society has not been properly utilized (Koeing, Saifuddin, Bazle & Mozumder, 2003).

The educational extension programs of the Ministry of Agriculture Jihad in empowering rural and nomadic women are notable in this regard. Considering the growing role of these women in agricultural development and food security, the empowerment of rural and nomadic women has always been a serious objective of the Ministry of Agriculture Jihad. This goal has been pursued through the implementation of various projects and programs coordinated by the Office for Rural and Nomadic Women's Affairs in collaboration with other departments. This Ministry, considering the challenges rural women face in accessing financial and credit resources, cultural barriers to more effective economic-social participation, and access to employment opportunities, has structured its programs around the following areas.

Salem (2016), in a study, examined the relationship between food security, urban population, and development programs in Iran. The results showed that during 1983–2011, food security in urban households was on the rise. However, despite this improvement, in 2011, 5.1% of the urban population received less than the standard caloric intake. Pinstup (2009) simulated the impact of economic growth on food and food security in Yemen, concluding that rapid economic growth is necessary to restore food security levels to pre-crisis conditions in the

country. In a study examining the role of cooperatives in food security, researchers concluded that women's cooperatives influence food security through their impact on women's economic and social empowerment (Bernstein & Durst, 2011).

The present study is conducted with the understanding that women, as half of the undeniable human capital in any country, play a central and essential role in economic and social activities. Therefore, considering them in policymaking, planning, and decision-making at national, regional, and local levels is vital. In this regard, rural women play a key role, especially in times of crisis, in ensuring the sustainability and health of food supplies. The critical importance of rural women's roles in promoting food security is widely recognized. In most developing countries, they are the primary labor force in farming, family income generation, and subsistence agriculture. They also play a major and essential role in many food-related activities, including preparation, preservation, processing, and livestock care. Although agriculture and its related activities form the economic backbone of rural areas, rural women's contribution to agriculture and other economic sectors remains largely hidden. Consequently, the real value of their participation in economic production is overlooked. Therefore, this study attempts to highlight the empowerment of women as a crucial factor in ensuring food security. In fact, the goal is to enhance their constructive capacity and creativity through empowerment so that they themselves become effective agents of change and transformation in this process.

THEORETICAL FOUNDATIONS OF THE RESEARCH

Food Insecurity:

Food security is defined as the assurance of physical availability and economic access to adequate food (in an environmentally and socially sustainable manner) in terms of quantity (amount, distribution, calories) and quality (safe, nutritious, balanced), as well as cultural acceptability for all people at all times, enabling a healthy and active life in a way that preserves human dignity (Kocheki, 2007). In 1975, the United Nations revised the definition of food security, describing it as the continuous supply of essential food commodities at the global level to improve food consumption and neutralize the adverse effects of fluctuations in food production and prices (Ghasemi, 1994). Food security is among the phenomena that affect all economic, social, and political dimensions of societies (Sajjadpour & Ahmadi, 2011) and is viewed as a multi-dimensional concept. The cornerstone and primary feature of achieving food security in a society is the necessity of a cross-sectoral and multi-faceted approach. These sectors—which include systems of production, supply, storage, processing, distribution, and consumption—must be comprehensively covered to minimize potential disturbances and tensions affecting food security at household and individual levels (Shah Vali & Lachini, 2007).

Given the multi-dimensional nature of the food security concept, none of its aspects alone can serve as an adequate indicator. These dimensions only acquire meaning when considered together. Experts also agree that no single index can measure all dimensions. Therefore, a combination of scales and indicators is necessary to assess food security (Carletto et al., 2013). As a result, there exists a wide range of indicators, each developed under different conditions and for different purposes (FAO, 2012a). Despite this variety, there is no global consensus on the methodology for measuring and monitoring food security (Carletto et al., 2013). According to Babu and Sanyal (2009), there are diverse methods for evaluating the dimensions or determinants of food security, each assessing food security using a spectrum of indicators. They regard methods such as participatory poverty profiling, principal component analysis, and spatial econometric tools as useful for evaluating the food availability dimension. They also suggest that a statistical method combining survey and census data can be used to estimate welfare levels and other indicators within a geographical unit. Furthermore, Babu and Sanyal (2009) propose alternative approaches, depending on circumstances, including interactive

approach, coping strategy, scaling approach, and vulnerability approach. Notably, using both quantitative and qualitative scales concurrently enhances the credibility of the assessment and results in more accurate findings.

Sharafkhani et al. (2011), in a study on the prevalence of food insecurity in households in Shiraz, reported that the food insecurity prevalence in the studied community was 44%—27.8% experienced food insecurity without hunger, 14.4% with moderate hunger, and 1.8% with severe hunger. Shakuri (2007), in a study on the relationship between food insecurity and certain household socioeconomic factors, identified food insecurity, women's age and ethnicity, economic status, and household size as associated factors. Goudarzi, Shaditalab, and Taleb (2008), in a study on factors affecting food security in rural communities, found significant relationships between food security and variables such as household production systems, size of agricultural and orchard lands, number of livestock units, number of employed household members, household income, women's education, and the household mother's decision-making ability. Bashir Abadi and Ohadi (2014), in a study on food security, cited factors such as agricultural pattern diversity, income distribution, per capita income, food prices, and the agricultural sector's added value as influential. According to their findings, agricultural diversity, per capita income, and agricultural imports had a significant positive effect, while the Gini coefficient and government support policies for urban and rural sectors were also influential.

Occupational Empowerment of Rural Female Heads of Households:

Empowerment is a process through which rural people gain the ability to organize and mobilize themselves, thereby increasing their self-confidence, demanding the right to choose freely and independently, and gaining control over resources that help combat and eliminate their subordination (Aljamal et al., 2012). Attention to the empowerment of rural women is essential for achieving development. In the Millennium Development Goals (MDGs), several targets are set, which the empowerment of rural women helps accelerate. These include reducing child mortality, improving maternal health, achieving universal primary education, combating AIDS, and reducing poverty (Kabeer, 2001). Considering that in rural communities of Iran—as in other developing countries—there is a deep gender gap (Fatemi et al., 2011), empowering rural women in the Third World reduces gender inequality and improves their social conditions (Islam et al., 2012). Various experiences indicate that women possess the same capabilities as men, and when given equal opportunities, they can compete effectively with men (Flann, DK, L. Oldham, 2007). At the 1990 International Conference, five elements were identified for women's empowerment: women should feel self-worth, have the right to make their own choices, access resources and opportunities, have control over their lives both inside and outside the home, and be able to influence social changes to create a socially and economically just society (Chakrabarti & Biswas, 2008). Empowerment begins with understanding the concept of power (Lawson, 2001). Khan (2010), in his research, defined the dimensions of empowerment as control over economic resources, decision-making within the family, mobility, and participation in family discussions. He identified several important variables influencing women's empowerment, including family type, head of household, awareness of rights, social networks, spousal cooperation, political participation, age at marriage, and audience education. He also stated that dynamic changes in women's education bring more knowledge and self-confidence, and emphasized the role of active government and NGO participation in mobilizing and organizing women's groups, increasing their awareness, political benefits, and inherent skills.

Jackson (2010), in his study, concluded that variables such as income level, education level, skills, and institutional participation of women play a crucial role in increasing their participation in economic activities. Ghadiri Masoom (2016) asserted that building self-confidence, holding educational courses, and providing credit related to women's employment can contribute to empowering women toward sustainable rural household livelihoods. Mason (2005) stated that increasing rural women's economic participation leads to greater decision-

making power. However, there is no significant relationship between rural women's economic participation and their increased expectations of involvement. Shahriari (1999) classified the barriers to women's empowerment into three categories: cultural, economic, and social. He believed that through family support, access to financial backing, and timely information about educational classes that strengthen women's self-belief, women's capabilities could be enhanced. Hosseini Nia (1997), in a study titled "Empowering Rural Girls: A Strategy for Achieving Gender Equality and Sustainable Human Development," concluded that providing educational opportunities for rural girls—as the main axis of action, in the form of formal education (secondary and higher), extension, technical and vocational training, home management, etc.—is a fundamental right of all rural girls and must be pursued seriously.

METHOD

In terms of purpose, this research is applied; in terms of method, it is descriptive; and regarding data collection, it is a field study. It also adopts a quantitative methodology. The statistical population includes all rural female-headed households under the support of the Welfare Organization and the Imam Khomeini Relief Committee in Tehran Province. The Cochran formula is used to determine the sample size, and proportional allocation sampling is used for selecting the sample. The measurement tool is a questionnaire developed based on theoretical studies and their findings. It should be noted that one simple tool suggested for directly measuring food security is the Radimer-Cornell questionnaire. This questionnaire is based on women's self-perception of food insecurity within the household and is utilized in the present study. The validity of the research instrument (questionnaire) is evaluated both in terms of content and face validity, using expert opinions from research committee faculty members and several senior agricultural extension experts from the Agricultural Jihad Organization of Tehran Province. The instrument's validity is confirmed after incorporating their corrective suggestions. To assess construct validity, the Average Variance Extracted (AVE) index is calculated. To assess the reliability of the questionnaire, 30 rural women are randomly selected to complete the research questionnaire, after which variable refinement is conducted. Data analysis is performed using both descriptive and inferential statistics, employing SPSS 24 and Amos 24 software.

Findings

The results showed that 31.96% of respondents, the highest frequency, were in the 41–50 age group, and the lowest frequency belonged to respondents aged 51 and above. Most respondents had a secondary level of education, comprising 18.90% of the total respondents, while 2.75% held a doctoral degree. The majority of respondents had 1 to 2 dependents, accounting for 35.40% of the total, whereas 2.41% had 7 to 8 dependents. Most respondents reported a monthly income of 3 to 4 million, representing 54.64% of the total, and 3.78% reported a monthly income of 5 million or more. The majority lived in rental housing, comprising 53.95% of the total respondents. Most respondents were employed in carpet weaving, accounting for 24.74% of the total.

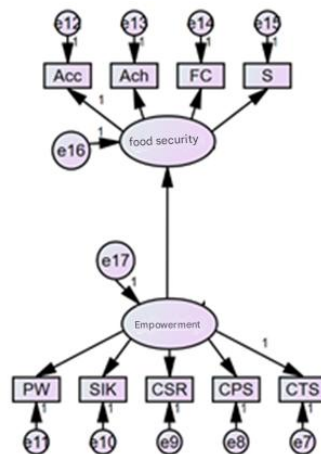


Figure 1: Initial Structural Model of Occupational Empowerment of Rural Female Heads of Households with a Food Security Approach

Based on the results from the path coefficients presented in Table (1), the relationship between the factors affecting the occupational empowerment of rural female heads of households and their occupational empowerment ($\beta=0.90$, $p=0.001$), the relationship between the factors affecting empowerment and food security ($\beta=0.50$, $p=0.001$), and the relationship between occupational empowerment and food security ($\beta=0.32$, $p=0.001$) were all statistically significant at the level of $p < 0.05$.

Table 1: Path Coefficients of the Structural Model of Occupational Empowerment of Rural Female Heads of Households with a Food Security Approach

Existing Paths	Parameter Estimate (b)	Standardized Coefficient (β)	Standard Error	Critical Ratio
Empowerment $\rightarrow$ Food Security	0.347	0.323	0.130	2.67 **

According to the software's recommendation, modifications (connecting error terms) were made until acceptable model fit was achieved. The results of the final model fit are presented in Table (2).

Table 2: Goodness-of-Fit Indices of the Structural Model

Model	χ^2/df	P	GFI	CFI	NFI	RMSEA
Proposed Model	2.76	0.001	0.92	0.93	0.92	0.07

The results in Table (2) show that the chi-square to degrees of freedom ratio is 2.76, which is less than 3 and indicates an acceptable model fit. Additionally, the GFI (0.92), CFI (0.93), and NFI (0.92) values are all above 0.90, suggesting a good fit of the model to the data. The RMSEA index (0.07) is below 0.08 and thus also indicates acceptable model fit. The model fit was validated based on the defined criteria in Kline's model (2005). As a result, it can be stated that the structural model has an acceptable fit. Figure (2) displays the final fitted model of the study. The numbers on the arrows represent standardized beta coefficients, and the numbers inside the ellipses represent the amount of explained variance. This model explains 43% of the variance in food security and 82% of the variance in occupational empowerment of female heads of households.

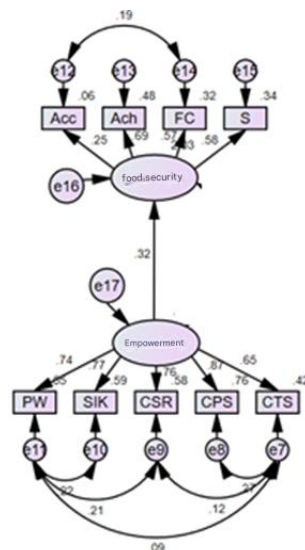


Figure 2: Final Structural Model of Occupational Empowerment of Rural Female Heads of Households with a Food Security Approach

According to the fitted model, the effect of rural women's empowerment on food security is reported in Table (3).

Table 3: Coefficients of the Fitted Model Relating Women's Empowerment and Food Security

Existing Paths	Parameter Estimate (b)	Standardized Coefficient (β)	Standard Error	Critical Ratio
Rural Women's Empowerment $\rightarrow$ Food Security	0.347	0.323	0.094	3.89 **

The results in Table (3) indicate that the relationship between rural women's empowerment and food security ($\beta = 0.32$, $p = 0.001$) is statistically significant at the level of $p \leq 0.01$.

CONCLUSION

The aim of this study was to examine the impact of occupational empowerment of rural female heads of households on their food insecurity. Women can be considered one of the most influential social groups in rural life, as they have always been regarded as a fundamental component of production units. Without their presence, the economic structure of the household cannot be sustained (Savari et al., 2014). Therefore, attention to rural women is essentially attention to productivity improvement. However, in most developing countries, they have been neglected (Faqiri et al., 2014). Among them, households headed by women are among the vulnerable groups in society and are likely to suffer from food insecurity, which negatively affects their individual and social health and consequently reduces the quality of life of those under their care. In Iran, food security has also been emphasized in the 2025 Vision Document, which has been designed in the form of four five-year development plans (Ghadami, 2017). Additionally, 24.5% of the country's population resides in rural areas. According to various studies in Iran, rural areas and low-income segments of society have lower levels of food security and are more vulnerable to food insecurity (Safar Khanloo et al., 2010). Compared to urban society, this group has a worse situation in terms of food access, food consumption, and the sustainability of supplies (Piyab, 2011). In these circumstances, female heads of households endure more hardship because, due to the rising cost of agricultural

inputs and low selling prices, these women—who must independently strive to earn household income and take on responsibilities for producing, processing, and distributing food—find themselves unable to access sufficient, high-quality, and diverse food. Considering the role of rural women in the country's development, it is crucial to examine their issues, particularly food security, which has been sparsely addressed in previous studies. The concept of occupational empowerment consists of five subscales: communication and teamwork skills, creativity and problem-solving, commitment and responsibility, professional knowledge and information, and technical and practical skills. Results from the confirmatory factor analysis of the occupational empowerment measurement model indicate that all items had factor loadings greater than 0.30 and were significant at $p \leq 0.05$. Also, Cronbach's alpha for each factor indicated desirable internal consistency. The concept of food security consisted of four components: access, availability, consumption, and stability. Confirmatory factor analysis showed that all items had factor loadings above 0.30 and were statistically significant at $p \leq 0.05$. Cronbach's alpha for each factor also indicated acceptable internal consistency.

According to the results of path coefficient analysis, the relationship between occupational empowerment of rural female heads of households and food security ($\beta = 0.32$, $p = 0.001$) was statistically significant at the level of $p < 0.05$. Also, the relationship between rural women's empowerment and food security was found to be significant.

The findings of the present study are in line with the studies of Ghadiri Masoum et al. (2014), Babaei (2000), Cheraghi (2017), Savari et al. (2011) regarding economic factors influencing food security; Komo (2012), Navard et al. (2004) regarding educational factors; Khanzadi (2018), Sharafkhani (2011), Safar Khanloo et al. (2010) regarding social factors; Aminnejad (2015), Mehrabi Bashir Abadi et al. (2010) regarding political factors; Faqiri (2014), Shahvali et al. (2007) regarding psychological factors; and Ali Shahi (2007) regarding managerial factors affecting food security, and Zhou (2010) regarding rural women's empowerment and food security. It is recommended that consultants and officials of relevant organizations, such as the Women's Affairs Office of the Welfare Organization, create group-based associations such as support groups, and hold annual festivals to honor successful members and exemplary groups. This would foster motivation among group members and administrators and promote constructive competition between groups. It is suggested that the government implement programs and training sessions to eliminate women's fear and sense of inadequacy, and increase their risk-taking ability by offering more financial facilities. Relevant organizations should ensure the success of entrepreneurship, empowerment, and food security initiatives by continuous supervision and provision of resources and credit, aiming to lead members of these groups to financial self-sufficiency.

One of the limitations of the study was the sensitivity of support agencies regarding the evaluation of the empowerment level of female-headed households, which somewhat affected the level of cooperation.

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