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Economies of Scale of Household Consumption Expenditure in Iran

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ABSTRACT

Household-scale economies can be plausibly attributed to shared household public goods that make larger households better off at the same level of per capita resources. This paper examines the role of food and housing in the allocation of Iranian household expenditure, considering co-residence and economies of scale. Using a seemingly unrelated regression model for 2011 and 2021, we predict that, in the presence of shared food and housing, our method (solely) exploits preference information revealed by a cross-section of household observations while accounting for fully unobserved preference heterogeneity. Our findings indicate that scale economies changed significantly from 2011 to 2021 for expenditure categories of food and housing, but not all trends in scale economies are consistent with theoretical predictions. The results show that economies of scale are recognized to be higher in the housing group than in the food group in both periods. However, it has decreased within a decade and intensified due to the lack of appropriate government policy. In this context, the government's policies to encourage population growth have failed, and the population has encountered a low growth rate. Thus, providing support and welfare policy packages such as increasing income policy and household support insurance, as well as assistance in providing housing, are prioritized due to the economies of scale in housing.

Keywords: Social welfare policy, Housing expenditure, Government policy.

INTRODUCTION

The population and its desirable growth have been discussed as a main and highly influential factor in the development and progress of any country. In this context, the fundamental question is what direct and indirect approaches and policies should be adopted by politicians to increase (control) the population according to the prevailing conditions and to reach maximum productivity and social welfare.

At the beginning of the 21st century, population heterogeneity occurs all over the world more than before, and the world is facing a wide range of population issues and socio-economic challenges. The issues related to population have occupied the human mind for a long time. Politicians and thinkers have always discussed issues such as the desired population size, the necessity of adopting population increase policies, or population control by considering the political, military, economic, and social considerations. Is a large population an opportunity or a threat to a country? What should be the desired annual population growth rate for a country? Should we merely pay attention to the quantitative growth of the population or should we consider the qualitative growth as well? Moreover, what population policies should be adopted for each country? These are among the questions that have always been considered by different groups such as economists and politicians.

Depending on the per capita expenditure of the household, the price of food and

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housing, and their budget share in the household, the supply of basic needs such as food and housing are the most important prerequisites for the population growth or the household size in Iran. However, the growth rate of Iran's population increased from 1.3% in 2011 to 0.57% in 2021, and the average household size decreased from 4 to 3 people. In addition, it is predicted that the population will experience negative growth in the next two decades (SCI, 2022). Based on the FAO Food Price Index, tThe FAO Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities.

Based on the FAO Food Price Index, the price of food increased from 98.1 points in 2020 to 125.7 points in 2021. In this regard, households pursue their future decisions on having children based on their expenditure share relative to the change in food and housing prices, which will affect the population policies of the country. Hence, one of the basic questions is related to the way households react to the consumption of basic goods such as food and housing due to the changes in household size.

Consumption is considered as one of the key concepts in macroeconomics, which plays a critical role in improving the quality of life and the level of well-being in society, and as the largest and most stable component of the Gross National Production and the most significant component of the household expenditure. In general, it is assumed that the consumption of a particular product by the members of the household is the same, and the amount consumed by the household is divided by the number of members of that household to calculate the per capita consumption of a food item in the household. This method indicates the average consumption of the household and a general understanding of this phenomenon at the household level. Such an attitude cannot provide data on the nature and manner of consumption of each family member about each other, due to their age and gender differences. The consumption of a food item by household members depends on the household size, as well as the age and gender of the household members (Kakwani *et al*., 2005).

Economies of scale in production have mainly been considered in economics; however, consumption has an important position in the field of welfare economics and has created a new horizon in this field according to the above-mentioned factors. In this way, if we regard more prosperity simply in the form of more use of goods and services, the presence of economies of scale can provide the possibility of joint use of goods and services. The joint use of goods and services increases the potential for the usefulness of such goods and services without the need to increase the amount of goods and services. In this regard, economies of scale lead to higher welfare for the consumer through capacity building. In welfare economics, economies of scale are an obvious example of the effect of household size on household welfare. Defining welfare as more use of goods and services, the diseconomies of scale in housing and food cannot provide the possibility of joint use of other goods and services. The joint use of goods and services increases the potential of creating the usefulness of such goods and services without the need to increase the amount of goods and services. If there is no increase in desirability and welfare in Iranian households after a decade, the reason should be sought in welfare policies in the population structure. Previous studies showed that the per capita demand for food decreases with an increase in household size regardless of whether the countries are rich or poor (Deaton and Paxson, 1998; Gibson and Kim, 2007). Moreover, a study conducted in the US revealed that a household of two adults consumes 31-35% less than two households with one adult each at a fixed income level (Lazear and Michael, 1981). Therefore, sharing opportunities can result in saving some services such as food preparation and in buying a part of food for such households. Thus, the economies of scale in consumption emphasize that the

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household's consumption expenditure changes by adding a family member, leading to the reduction of the per capita expenditure for each member compared to the previous status as regarded in the concept of economies of scale in consumption. Thus, economies of scale provide the standard level of life of each family member (Kakwani, 1977).

The concept of economic scale exists more in the discussion of production scale (Hoang *et al*., 2021; Houedjofonon *et al*., 2020; Jetté-Nantel *et al*., 2020), but it is considered less in consumption. The economies of scale in consumption have been developed on Engel's and Barten's models. According to Engel law, the more affluent the households, the lower their proportion of food share would be (Dudek, 2014a; Soon, 2022). Engel's method has been dominantly applied in household size economies estimation due to its simplicity, using food share as a welfare indicator of different-sized households (Deaton and Muellbauer, 1980; Lanjouw and Ravallion, 1995). Deaton (1997) indicated that the Engel method works, but makes no sense. Deaton and Paxson (1998) draw from Barten's model in their attempt to estimate the household scale. Gan and Vernon (2003) and Gibson (2002) estimated the household economies scale.

Economies of scale in household consumption generally occur as a result of joint consumption of public goods. In order to analyze this phenomenon, expenditure shares on housing, which can be treated as a representative of the public good, and expenditure shares on food, representing private goods, are examined (Dudek, 2014b; Perali, 2003). Thus, determining the economies of scale in households according to the characteristics and conditions prevailing in each household is of great significance in population growth strategies. Few studies consider the economic scale of the household, while this paper uses this concept to evaluate the government's policy. Therefore, the contribution of this paper is to evaluate the efficiency of population growth policies by measuring the role of the scale of food and housing expenditure.

Household size is a pivotal demographic feature shaping individual economic decisions (Curtis *et al*., 2017). Extensive studies have revealed within-household economies of scale (also referred to as household scale economies) for multiple commodities (Ellsworth-Krebs, 2020; Nelson, 1988; O'neill and Chen, 2002).

Among them, electricity has larger scale effects since it is more sharable than other goods (Underwood and Zahran, 2015), such as food or clothing. Reducing scale effects due to smaller households could have negative impacts on ecological /environmental sustainability, such as increased CO2 emission (Ala-Mantila *et al*., 2016; Fremstad *et al*., 2018; Underwood and Fremstad, 2018; Underwood and Zahran, 2015) and resource consumption (Huang, 2015; Longhi, 2015; O'neill and Chen, 2002), as well as on biodiversity (Bradbury *et al*., 2014; Yu and Liu, 2007).

Researchers and policymakers believe that the growth of an economy correlates with the consumption pattern of households, as consumption patterns make welfare analysis easier (Akram, 2020; Ullah, 2018). The consumption patterns of households are also useful in business progress as the whole investment setup relies on the consumption patterns of a country (Akram, 2020).

After reviewing the above literature, we found that many researchers concluded that changes in income and price of a product and its substitutes have a significant influence on product demand. The possible justification behind this notion is that, when a change occurs in the price of a product, consumers tend to reduce the Quantity Demanded (QD) as per the law of demand (Al Rawashdeh, 2023).

The present study is organized as follows: first, the expenditures and income of Iranian households are presented during 2011-2021. Then, the economies of scale for two periods are conducted for the food and housing group by estimating the expenditure share relationships for the group of foods, housing,

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and other goods. Finally, the results and the role of changes in household size and per capita expenditure on food and housing are investigated and the corresponding policies are proposed. The question of how household adjusts their consumption patterns in response to changes in size encourages several researchers to conduct studies in different contexts to observe the behavioral pattern of consumers.

MATERIALS AND METHODS

The conceptual model of the study is as Figure 1.

Seemingly Unrelated Regressions Estimate (SURE)

To determine the economies of scale in the consumption of goods and services, the scale function is defined as equation (1) (Mok, 2010; Mok *et al*., 2011):

$$\emptyset(\mathrm{n}) = \mathrm{n}^{1-\sigma} \quad (1)$$

Where, n represents the number of household members and σ indicates the elasticity of the scale that is calculated as Eq. (2) (Mok, 2010; Mok *et al*., 2011):

$$\sigma = 1 - \frac{\partial \ln \emptyset(\mathrm{n})}{\partial \ln \mathrm{n}} \quad (2)$$

If the scale elasticity is zero, the scale function equals the number of household members. In other words, there are no economies of scale in the consumption of goods in the household. In addition, any increase in the household size is compensated by an increase equivalent to the per capita consumption of the good. In this regard, the consumption of the household members remains at the same level as before. Accordingly, the goods used in the household are purely private and cannot be shared. If the elasticity of scale equals 1, the scale function becomes equal to 1 and there will be economies of scale in consumption at the household level. Therefore, the consumption is compensated by less than a 1% increase in the consumption of goods with a 1% increase in the household size, so that the consumption of the household members remains at the same level as before. Such a good is pure public and can be used by all members without adverse effects.

The effect of household size on changes in per capita food consumption with a certain income level was tested by dividing the sample into quartiles and examining the coefficient of $\ln n$. To check the economies resulting from the scale of households, Equation (3) was used (Deaton and Muellbauer, 1980; Mok, 2010; Mok *et al*., 2011):

LA/AIDS Model

The general form of the Almost Ideal Demand System (AIDS) with linear approximation (LA) is given by Govindaraj *et al*, (2012):

$$\omega_i = \alpha_i + \sum_j \gamma_{ij} \ln p_j + \beta_i \ln\left(\frac{X}{P}\right) + v_i$$

Where, w_i= expenditure share of the i[th] commodity

p_j= Price of the j[th] commodity

X= is the total expenditure

v_i= error term

P= is the price level

The theoretical demand restrictions in terms of adding up, homogeneity in prices and income, and the symmetry of cross effects of demand functions are given below:

Adding up $\sum_{i=1}^{n} \alpha_i = 1 \sum_{i=1}^{n} \gamma_{ij} = 0$

Homogeneity $\sum_j \gamma_{ij} = 0$

Symmetry $\gamma_{ij} = \gamma_{ji}$

Calculation of Elasticities Using LA/AIDS Model

The uncompensated price elasticity of commodity i with respect to commodity j is given as:

$$e_{ij} = \frac{\gamma_{ij}}{\bar{\omega}_i} - \frac{\beta_i \bar{\omega}_j}{\bar{\omega}_i} - \delta_{ij}$$

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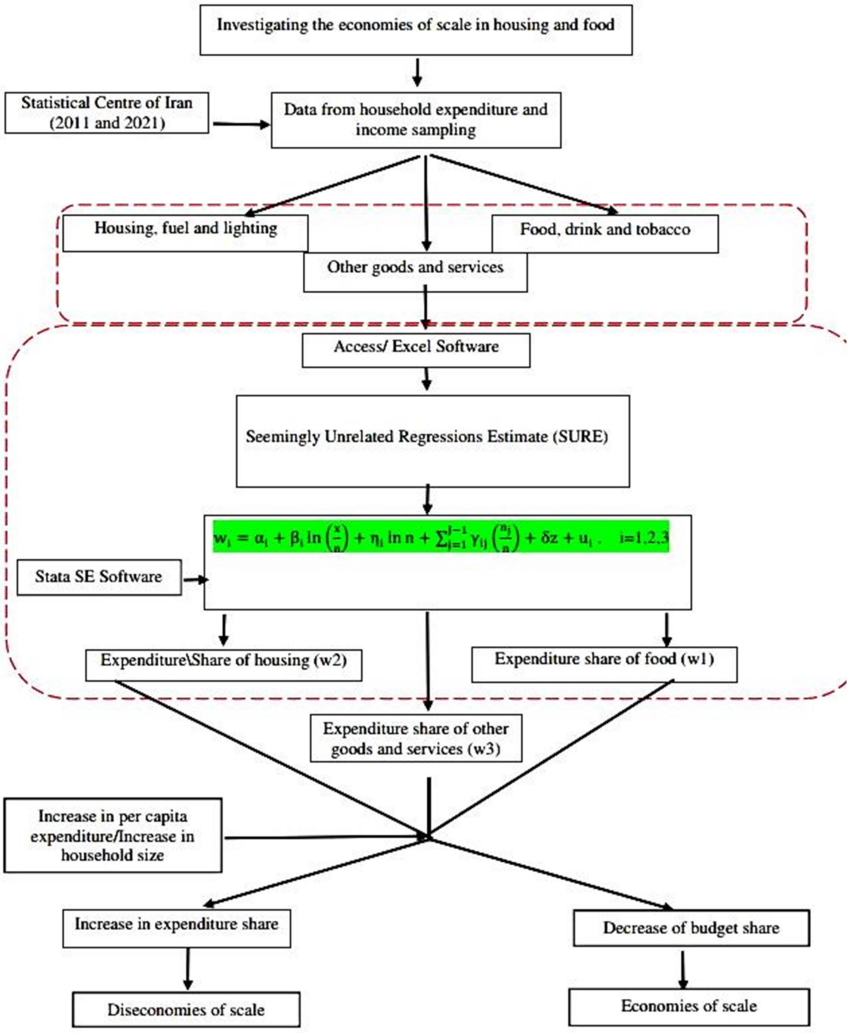

Figure 1. Conceptual model of the study.

Where, $\delta_{ij} = 1$ if $i = j$ and $\delta_{ij} = 0$ if, $i \neq j$.

The expenditure elasticity will be estimated by the following equation:

$$e_i = 1 + \frac{\beta_i}{\overline{\omega}_i}$$

Using slutsky model, the compensated price elasticities "e_{ij}", can be computed as:

$$e_{ij}^{*} = e_{ij} + w_j e_i$$

In the following, in order to examine the degree of economies of scale of households from the system of equations, it was used below (Deaton and Muellbauer, 1980).

$$w_1 = \alpha_1 + \beta_1 \ln\left(\frac{x}{n}\right) + \eta_1 \ln n + \sum_{j=1}^{J-1} \gamma_{1j}\left(\frac{n_j}{n}\right) + \delta z + u_1$$

$$w_2 = \alpha_2 + \beta_2 \ln\left(\frac{x}{n}\right) + \eta_2 \ln n + \sum_{j=1}^{J-1} \gamma_{2j}\left(\frac{n_j}{n}\right) + \delta z + u_2$$

$$w_3 = \alpha_3 + \beta_3 \ln\left(\frac{x}{n}\right) + \eta_3 \ln n + \sum_{j=1}^{J-1} \gamma_{3j}\left(\frac{n_j}{n}\right) + \delta z + u_3 \quad (3)$$

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Where, w_1, w_2, and w_3 show the share of food, housing and other goods and services from the total household expenditure, x indicates the total expenditure of the above-mentioned product groups, and n represents the household size. In addition, $\frac{x}{n}$ shows the per capita expenditure of household members, "$\ln n$" is considered as the effect of the economies of scale, and $\frac{n_j}{n}$ indicates the relative composition of the household members in terms of the age of the household members. Since the total share of the households' consumption basket for goods is equal to 1, the elimination of each of the equations can be arbitrary. Among the equations of the system, the equation related to the group or subgroup that is less significant than other groups is eliminated (Gundimeda and Köhlin, 2008). In this research, because the focus is on food and housing, other goods and services were removed from the equation. Therefore, there are no results of the third equation in the tables [Seemingly Unrelated Regressions Estimate (SURE) method].

Data and Information

The cost and income survey data published annually by the Statistical Centre of Iran is one of the most significant and widely used sources of information for household studies in Iran, and its 2011-2021 issue is applied in this study. Moreover, Access, Excel, SPSS and Stata SE software were used for data analysis.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Studied Sample

As shown in Table 1, the average household size has decreased after a decade, and Iran faces a relatively older population. The average household size was 4 in 2011 and it decreased to 3 in 2021. Thus, the policies for encouraging population growth have not been highly effective. The significant point of comparing two periods separated by a decade is that the share of food and housing in 2021 has shown a significant increase compared to 2011. Share of food and housing in the household expenditure was 47.96% and 24.25%, respectively, which has been increased to and 56.76 and 32.12 to 2021. During the last decade, macroeconomic shocks, climate change, global supply shocks, and sudden political changes are all among the factors that can affect the price of food. In other words, prices depend on different sources and governments are looking for policy options to reduce price fluctuations (Amolegbe *et al*., 2021).

According to the data of the Iranian Statistics Center from the urban areas of the country, the share of housing in household expenses increased during the last decade.

Things like the shock of sanctions, fluctuation, increase in inflation, and the influx of capital demands to the housing sector, this sector experienced a sharp jump in prices and, as a result, the purchasing power of households lagged behind the price of housing. Therefore, the share of housing in the total household expenditures (food and non-food) increased.

Economies of Scale of Goods and Services in Households' Consumption Basket

Tables 2 and 3 indicate the economies of scale for goods and services (food and housing) of the sample households studied in 2011 and 2021, respectively. As shown, per capita expenditure and household size have negative effects on the expenditure share of food and housing among the significant variables in the system equations for food in 2011. In this regard, the per capita share of food and housing decreases with the increase in per capita expenditure or the size of the household. The household food expenditure share was reduced by 5.3

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Table 1. Socio-economic characteristics of the studied sample for 2011 and 2021.

Item	2011		2021	
	Mean	SD	Mean	SD
Number of households	19739	---	20136	---
Household size (Person)	4	1.85	3	3.76
Share of men in household headship (Percentage)	86.86	---	75.52	---
Age of head of household (Year)	51.13	16.11	57.34	18.98
Share of new-born babies-4 years old male members in the household (Percentage)	3.01	8.37	2.02	4.12
Share of 5- 10 year old male members in the household (Percentage)	4.36	9.82	3.32	6.22
Share of 11-15 year old male members in the household (Percentage)	3.82	9.07	2.61	7.55
Share of 16-60 year old male members in the household (Percentage)	28.66	20.99	34.73	32.76
Share of male members over 60 years old in the household (Percentage)	8	17.60	12.05	9.50
Share of female new-born babies up to four years old in the household (Percentage)	3.05	8.37	2.04	2.34
Share of 5- 10-year-old female members in the household (Percentage)	4.20	9.70	3.28	4.10
Share of 11 -15 year old female members in the household (Percentage)	3.44	8.58	2.41	5.16
Share of 16-60 year old female members in the household (Percentage)	31.51	20.16	41.67	43.67
Share of female members over 60 years old in the household (Percentage)	9.90	23.74	11.13	10.15
Share of illiteracy in the heads of households (Percentage)	41.99	0.49	34.45	53.82
Share of employment in the heads of households (Percentage)	73.27	0.44	61.22	55.38
Share of marital status in the heads of households (Percentage)	85.64	0.35	71.43	63.42
Share of household food expenditure (Percentage)	47.96	13.43	56.76	31.16
Share of household housing expenditure (Percentage)	24.25	12.97	32.12	21.13
Share of household other goods and service expenditure (Percentage)	27.79	13.71	11.12	18.76

[a] Source: research findings.

as a result of a 1% increase in the per capita expenditure. In addition, the household housing expenditure share decreases by approximately 0.34 and 0.33% with a 1% increase in the per capita expenditure and the household size (Table 2). This phenomenon is considered one of the aspects of economies in the household in 2011. Increasing the per capita expenditure of households and reducing the share of food or housing in the total household expenditure can increase the context for more use of goods and services in the household. So, welfare improvement is considered as more use of goods and services. Therefore, it can lead to an increase in the well-being of the whole household. However, the per capita expenditure and household size indicate a positive effect on the share of food and housing in the household expenditure in 2021. The share of the food household expenditure increases by

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0.45 and 0.010 with a 1% increase in per capita expenditure and household size (Table 2). Further, the share of the housing household expenditure increases by 0.30 and 0.28 concerning a 1% increase in per capita expenditure and household size (Table 3). In other words, the share of the household expenditure in food and housing increases with an increase in per capita expenditure or household size, indicating the absence of economies of scale in this year.

The first rule is the parasite law itself, which states that the share of food in the budget decreases with an increase in income or total expenses. The second rule is that with constant resources, the share of food increases with the increase in household size.

Deaton and Paxso (1998) tested Barten (1964) model and surprisingly found the exact opposite pattern where food consumption decreases as the household grows. The results of the present research confirm this fact. The issue of economies of scale is more evident in the case of housing (public good) than food. The results of the present research show that, over time, the economy of scale in food decreases compared to housing. This is also true for per capita consumption expenditure. Similarly, using the US Consumer Expenditure Survey, Nelson (1988) found large economies of scale in shelter and small economies of scale in furniture, maintenance, food, and transportation. Similarly, using the US Consumer Expenditure Survey, Nelson (1988) found large economies of scale in shelter and small economies of scale in furniture, maintenance, food, and transportation. Researchers used cross-sectional household income data from ten developed countries, and other Scientists using UK household expenditure data to the sensitivity of poverty and inequality. They estimated the economies of scale in consumption and used equivalent scales to compare welfare.

It can be said that in the studied sample households, there is an economy of scale in food consumption, but this phenomenon is greater in the use of housing, because housing is more common than food.

The correctness of the Engel law states that, among the households with the same population composition, those with a higher share of food generally have less income. Therefore, with other conditions being constant, they have a lower level of well-being. However, this is nothing more than the retelling of the parasite law itself, because the presence of other minors increases the share of household food. Indeed, the addition of children moves the budget in the same direction as the decrease in income. But, this is very different from arguing that increasing income to the extent that it keeps the share of food constant is the exact amount needed for compensation for additional expenditures incurred by children. Not all members of the household have the same allocation and, logically, the elderly consume specific and fewer goods. This issue can affect the economy of scale due to less consumption.

In evaluating the elasticity in the two groups of food and housing model, the increase in the household size has a much more highlighted role in the share of housing than the share of household food expenditure regardless of the type and direction of influence. Thus, the same change in the household dimension has an almost five times higher effect on the share of housing compared to the share of food (0.32 *vs*. 0.06 for 2011 and 0.28 *vs.* 0.01 for 2021). The increase in the household size through the economies of high scale in housing can overshadow the economies of smaller scale in food and the increase of household size results in the economies of scale.

The age and gender of household members are other significant issues causing the economies of scale at the household level. Increasing the percentage of 11- to 15-year-old children caused no effect on the economies of scale, and the increase of other age groups to households was not significant in creating the economies of scale in food consumption. This is revers in the case of

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Table 2. Estimation results of the model for determining the economies of scale in the household food consumption.[a]

Food model	2011			2021		
	Coefficient	SD	Elasticity	Coefficient	SD	Elasticity
The logarithm of household expenditure per capita	-0.0253***	0.0016	-0.0529(1)***	0.0223***	0.0062	0.4552(1)***
The logarithm of household size	-0.0288***	0.0031	-0.0604(1)***	0.0052	0.0071	0.0106(1)***
The proportion of male members less than 4 years old	-0.0058	0.0155	-0.0003	-0.0179	0.0376	-0.0009
The proportion of male members aged 5 - 10 years old	-0.0115	0.0132	-0.0007	0.0093	0.0299	0.0007
Proportion of male members aged 11 - 15 years old	0.0243*	0.0144	0.0014*	0.0547*	0.0329	0.0038*
The proportion of male members aged 16-60 years old	-0.0044	0.0046	-0.0032	-0.0059	0.0134	-0.0046
The proportion of female members less than 4 years old	0.0076	0.0152	-0.0004	0.0171	0.0359	0.0008
The proportion of female members aged 5 - 10 years old	0.0138	0.0134	0.0009	0.0039	0.0309	0.0003
Proportion of female members aged 11 - 15 years old	-0.0026	0.0153	-0.0002	0.0132	0.0325	0.0009
The proportion of female members aged 16-60 years old	-0.0006	0.0052	-0.0004	0.0276	0.0167	0.0184*
Gender of the head of the household	-0.0034	0.0047	-0.0062	0.0018	0.0078	0.0026
Age of the head of the household	0.0003***	0.0007	0.0317***	-0.0003	0.0002	-0.0281
Literacy status of the head of the household	-0.0382***	0.0024	-0.0478***	-0.0469**	0.0062	-0.0362***
Employment status of the head of the household	0.0345***	0.0027	0.0487***	0.0191***	0.0058	0.0194***
Marital status of the head of the household	0.0281***	0.0045	-0.0007	0.0292***	0.0077	0.0382***
y-intercept	0.8332***	0.0247	---	0.1783**	0.0835	---
Number of observations	19739	---	---	20136	---	---
Chi^2 statistics	813.1100***	---	---	144.3200***	---	---
Breusch-Pagan test	4567.6224	---	---	2603. 8750	---	---

[a] Source: Research findings. Note: *, ** and *** indicate levels of significance at 10, 5 and 1%, respectively.

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Table 3. Estimation results of the model for determining the economies of scale in the housing of the household consumption.[a]

Housing model	2011			2021		
	Coefficient	SD	Elasticity	Coefficient	SD	Elasticity
The logarithm of household expenditure per capita	-0.0772***	0.0015	-0.3352(1)***	-0.0914***	0.0058	-0.3075(1)***
The logarithm of household size	-0.0753***	0.0029	-0.3271(1)***	-0.0835***	0.0067	-0.2811(1)***
The proportion of male members less than 4 years old	-0.0026	0.0139	0.0003	-0.0387	0.0359	-0.0033
The proportion of male members aged 5 - 10 years old	0.0158	0.0118	0.0022	0.0051	0.0286	0.0007
Proportion of male members aged 11 - 15 years old	-0.0146	0.0130	-0.0018	-0.0504	0.0314	-0.0061
The proportion of male members aged 16-60 years old	-0.0030	0.0042	-0.0044	-0.0229*	0.0128	-0.0295*
The proportion of female members less than 4 years old	0.0151	0.0137	0.0014	-0.0101	0.0344	-0.0008
The proportion of female members aged 5 - 10 years old	-0.0104	0.0120	-0.0014	-0.0481	0.0296	-0.0062
Proportion of female members aged 11 - 15 years old	-0.0016	0.0137	-0.0002	-0.0233	0.0311	-0.0029
The proportion of female members aged 16-60 years old	0.0019	0.0046	0.0026	-0.0353**	0.0161	-0.0393**
Gender of the head of the household	0.0047	0.0043	0.0182	-0.0027	0.0075	-0.0066
Age of the head of the household	0.0005***	0.0001	0.1086	0.0009***	0.0002	0.1853***
Literacy status of the head of the household	0.0309***	0.0022	0.0784***	0.0343***	0.0059	0.0458***
Employment status of the head of the household	-0.0232***	0.0024	-0.0779***	-0.0146***	0.0056	-0.0277**
Marital status of the head of the household	-0.0179***	0.0041	-0.0685***	-0.0209***	0.0074	-0.0497***
y-intercept	1.4116***	0.0224	---	1.608***	0.0815	---
Number of observations	19739	---	---	3866	---	---
Chi^2 statistics	4010.0100***	---	---	789.0400***	---	---
Breusch-Pagan test	5783.7270	---	---	1703. 9880	---	---

[a] Source: Research findings. Note: *, ** and *** indicate levels of significance at 10, 5 and 1%, respectively.

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housing. Therefore, different age combinations in both gender groups of household members had no significant effect on the share of the household housing expenditure. The age group of 16- 60 years, male and female, had a significant effect on the share of household housing expenditure in 2021.

The other significant issues in the field of economic efficiency at the household level include the socio-economic characteristics of the head of the household such as their gender, age, literacy status, and employment status. In the field of food, increasing the literacy level of the head is a factor in creating economies in the consumption of goods. However, the increasing age and employment of the head can negatively affect this issue. In the field of housing, increasing the age and literacy level of the head impedes economies at the household level, and being employed and married results in economies at the household level.

The results indicated that the socio-economic characteristics of household heads, age, and gender of household members have various effects on the occurrence or non-occurrence of economies at the household level. Due to the heterogeneity of the effects related to this category for household characteristics, it is impossible to focus only on the characteristics of household heads, as well as the age and gender of household members' to increase the welfare of households. In this regard, welfare economy policymakers should focus on the centrality of the household size and per capita expenditures of household members.

CONCLUSIONS

The conclusion of the article indicates that from a welfare perspective, as household size increases, providing housing or assistance to larger households becomes more important, as this leads to economies of scale. In the current situation in Iran, the lack of economies of scale has resulted in an aging population. From a demographic perspective, an aging population leads to a decrease in fertility and the ability to renew generations. Economically, human resources are one of the essential factors in economic growth, especially in a knowledge-based economy. Additionally, as the population ages, the economic workforce of the country diminishes.

While the current economy is heavily reliant on oil, the role of the workforce in economic growth becomes increasingly important as oil reserves deplete. The failure of policies aimed at encouraging population growth is of significant concern. Some of these policies include providing subsidies for each child, offering low-interest loans to larger families, and allocating cars through lotteries to mothers with two or more children. However, reforming income policies and supporting population deciles through insurance could yield better results in improving Iran's demographic structure.

Concerns about food security and people's access to housing in recent years testify to this claim. Therefore, it is suggested that population growth policies in any country should be adjusted based on households' responses to changes in their cost shares over time to ensure the predictability of these policies' effectiveness.

Limitations and future research directions include the lack of access to data and information for examination across different geographical areas of the country. Given that health and food security are strategic goals in the 20-year vision document of the country, it is recommended that the current research be conducted separately based on cities within the province. Additionally, comparing issues in urban and rural areas and conducting research across different income deciles can serve as an appropriate indicator for changing food support policies for households.

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صرفه جویی های ناشی از مقیاس هزینه مصرف خانوار در ایران

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چکیده

صرفه جویی های ناشی از مقیاس خانوار را می توان به طور قابل قبولی به کالاهای عمومی خانگی مشترک نسبت داد که باعث می شود خانوارهای بزرگتر در همان سطح از منابع سرانه وضعیت بهتری داشته باشند. این مقاله به بررسی نقش غذا و مسکن در تخصیص هزینه‌های خانوار ایرانی با توجه به هم‌سکونتی و صرفه‌جویی در مقیاس می‌پردازد. با استفاده از یک مدل رگرسیون به ظاهر نامرتبط برای سال‌های ۲۰۱۱ و ۲۰۲۱، ما پیش‌بینی می‌کنیم که در حضور غذا و مسکن مشترک، روش ما (تنها) از اطلاعات ترجیحی آشکار شده توسط مقطعی از مشاهدات خانوار بهره‌برداری می‌کند در حالی که ناهمگنی ترجیحات کاملاً مشاهده‌نشده را در نظر می‌گیرد. یافته‌های ما نشان می‌دهد که مقیاس های اقتصادی از سال ۲۰۱۱ تا ۲۰۲۱ برای مقوله‌های مخارج غذا و مسکن تغییر قابل‌توجهی داشته است، اما همه روندها در مقیاس‌های اقتصادی با پیش‌بینی‌های نظری سازگار نیستند. نتایج نشان می‌دهد که مقیاس های اقتصادی در هر دو دوره در گروه مسکن نسبت به گروه غذایی بالاتر است. اما در عرض یک دهه کاهش یافته و به دلیل نبود سیاست مناسب دولت شدت یافته است. در این زمینه، سیاست های دولت برای تشویق رشد جمعیت شکست خورده و جمعیت با نرخ رشد پایین مواجه شده است. بنابراین ارائه بسته های حمایتی و رفاهی از جمله بیمه نامه افزایش درآمد و بیمه حمایتی خانوار و کمک در تامین مسکن با توجه به صرفه جویی در مقیاس مسکن در اولویت قرار دارد.

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