

# Analytical study of the economic effects of sports for seniors in Iran

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## ABSTRACT

The aim of this study was to analyze the economic effects of elderly sports in Iran. The present study was qualitative. The research is based on grounded theory applying the emerging method attributed to Glaser (1992). Professors, of sports management, sociology, psychology, municipal managers and researchers (with at least two scientific research articles in the field of research) constituted the population of the current study. Since the purpose of qualitative sampling is information saturation, the combined theoretical sampling method of the improbably purposeful type was used until the theoretical saturation was achieved. A total of 15 participants were recruited as sample for the present study. Acceptability, transferability and verifiability indices were used to determine validity. In order to evaluate the reliability of the interviews, the method of intra-subject agreement of two coders (evaluators) was used. Findings of the present study revealed that the mean age of the research participants was 48 years. Out of all, 75% participants were males. The average career background of the participants was 22.5 years and 80% of them held a Ph.D. degree. The results showed that the economic effects of elderly sports were divided into two categories: micro and macro. The macro level consisted of the two concepts of increasing GDP (5 signs) and private sector investment (3 signs). The micro level consisted of the two concepts of quantitative and qualitative improvement of production inputs (6 signs) and reduction of treatment costs (8 signs).

## KEYWORDS

Elderly Sports; Economic Effects; Qualitative Method

## 1. INTRODUCTION

One of the great achievements of human beings is the improvement of life expectancy in the twentieth century. The average life expectancy in nineteenth century was less than 50 years. It has exceeded to 66 years in the twenty first century. Hence, one of the considerable challenges of 21st century is the issue of ageing.

As per the global statistics, elderly population is increasing day by day (Anderson & Hussey, 2000). In 2010, it was estimated that 524 million people (8%) of the world's population aged 65 years and above. This figure is expected to triple by 2050 and reach, one and a half billion elderly individuals (16% of the world's population) (Bazrafshan, Hoseini, Rahgozar, & Madah, 2007).

In Iran, presently a small percentage of the country's population is elderly. Due to rapid decline in the fertility rate in the recent decade, a substantial increase in the percentage of elderly population is speculated. Hence, future-oriented planning is necessary to solve the problems of this segment of the population.

The United Nations Population Sector forecast for 2002 stated that, based on the assumed average growth rate during the 2040s and 2050s, about 25 percent of Iran's total population will be over the age of 60 years, which will be approximately a quarter of Iran's population in the coming decades (Barghchi, Omar, & Aman, 2009). This has come at a high cost, especially in the healthcare sector. Higher cost of living, staggering healthcare costs etc. are major factors posing the need for more attention to this segment of society (Biscaia, Correia, Ross, & Rosado, 2014).

Ageing is neither a disease, nor any disorder. Ageing is a vital phenomenon in which various physiological and psychological changes occur in the body (Cadilhac et al., 2011). Various studies have shown that health promotion activities for aged individuals are very low. Due to lack of knowledge, attitude and practice of the elderly regarding a healthy lifestyle, elderly have more inclination towards sedentary lifestyle and poor dietary habits (Daher et al., 2018; Chan, 2010). Variety of factors are responsible for various disabilities among geriatric population which include inactivity, lack of mobility and improper use of muscles. Low level of physical activity causes nonuse of the potential forces that exist to maintain health and comfort within every elderly person (Flatt, 2012). Exercises induce multiple benefits in elderly and make their quality of life better. Exercise improves flexibility and mobility, cognitive function and mental and overall functional activities (Franco et al., 2015).

Today, the phenomenon of aging with all its psychological, social, cultural and economic dimensions is one of the most serious and challenging issues for families and countries. From the

economic point of view, various studies have revealed that about 60% of the costs of health care, 35% of hospital discharges and 47% of hospitalization days are related to geriatric individuals (Goodway, Ozmun, & Gallahue, 2019). Low physical activity level leads to causation of cardiovascular problems, diabetes, cancer etc. which are responsible for 20% of deaths of elderly. Modification in the life style by increasing the level of physical activities and exercise may help in reducing the death rate and increasing the life expectancy at any age group (Habibi, Nikpour, Seiedoshohadaei, & Haghani, 2008).

The rate of mobility disability, especially in daily work, among the elderly in Iran is very high compared to developed countries such as South Korea and Europe. Considering that exercise and physical activity play a very important role in increasing the ability and prevention of diseases, addressing the issue of sports for the elderly seems to be very important and necessary (Hansen & Scotwin, 1995).

In this regard, Dahir et al. (2018) stated that older people who exercise less often go to hospital emergencies. Those who do not exercise, face less problems leading to hospital emergencies (Daher et al., 2018). They recover faster from surgery and generally have a better quality of life (Hosseini, 2011).

Mackie et al. (2016) further stated that participation of elderly in sports activities will lead to low treatment costs, more enjoyment and overall increased work efficiency and participation in social activities. (Jenson, 2007).

Provision of security for overall wellbeing of fast growing geriatric population is a real challenge (Kalashi, Hoseini, & Rajaii, 2016). The communities must witness and address the various problems including economic issues related to elderly.

A quick look at the previous studies show that the phenomenon of aging has not received much attention from researchers in Iran and other societies. Very less focus is given to the specific problems of elderly group of individuals. Hence the present study aims to fill the research gap by identifying the economic effects of elderly sports.

## **2. METHODS**

The present study was qualitative. The research is based on grounded theory applying the emerging method attributed to Glaser (1992). Professors, of sports management, sociology, psychology, municipal managers and researchers (with at least two scientific research articles in the field of research) constituted the population of current study. Since the purpose of qualitative sampling is information saturation; therefore, the combined theoretical sampling method of the

improbably purposeful type was used until the theoretical saturation was achieved. For this purpose, 15 people were selected as the research sample. The range, number and variety of interviewees by job and social status are presented in Table 1.

**Table 1.** The range, number and variety of interviewees by job and social status

<b>Job and social status</b>	Number of persons	Number of interviews
Professors of Sports Management	7	9
Professors of Sociology	2	2
Professors of Psychology	2	3
Municipal managers	2	2
Researchers	2	2
Total	15	18

In this study, acceptability, transferability and verifiability were used to determine validity. In the present study, researcher recruited participants from multiple sources in order to gain acceptability. In addition, a PhD student and three experts familiar with the qualitative method and grounded theory were also involved. Interview methods were used to conduct this research. By reviewing several interviews and extracting maximum and non-repetitive content, an attempt was made to implement this recommendation.

Possibility of transferring concept (transferability) was increased by considering the expertise and organizational position of each of the interviewees and considering this issue in their selection. The researcher wrote down the entire research process and maintained authorized interviews through the tape recorder and maintained the documentation of the same (verifiability).

A PhD student in sports management was asked to participate as a research partner (coder) in order to calculate the reliability of the interviews using the method of intra-subject agreement of the two coders (evaluators). Student was provided with the necessary training and skills to codify the interviews. The researcher along with the research partner coded three interviews and calculated the percentage of agreement within the topic using the following formula:

**Formula 1.** Percentage of reliability

$$\text{Reliability percentage} = \frac{\text{Number of agreements} * 2}{\text{Total number of codes}} * \%100$$

**Table 2.** The total number of codes

Rows	Interview title	Total number of codes	Number of agreements	Number of disagreements	Retest reliability (percentage)
1	A	8	3	1	75
2	B	5	2	1	80
3	C	7	3	2	85
4	Total	20	8	4	80

As described in Table 2, the total number of codes were 20, the total number of code agreements were 8, and the total number of disagreements were 4. The retest reliability of the interviews of this research is equal to 80% and considering that the reliability rate is more than 60%. The reliability of the current interview analysis is appropriate and confirmed. In this study, the paradigm coding model was used to analyze the data obtained from grounded theory in the form of a systematic coding process consisting of three stages: open, axial and selective.

### 3. RESULTS

Findings of the present study revealed that the mean age of the research participants was 48 years. Out of all, 75% participants were male. The average career background of the participants was 22.5 years; and 80% of them had a Ph.D. degree. The following are the social effects of elderly sports in Iran:

**Table 3.** Open codes related to the economic effects of elderly sports in a few examples of interviews

Interviewee code	Indications	Concepts
	Definitely one of the most important tangible economic effects of sport in general and sport of old age is specifically the GDP of each country, of which our country is no exception.	Increase in GDP
	The elderly are definitely considered as a workforce if they turn to exercise and develop their physical factors, then, they can work part-time or even full-time.	Increasing employment of the elderly
A1	Aging sports is an opportunity for those interested in investing in this part of the sports industry. As a result, employment for those interested in this field will increase.	Creating employment for senior sports activists
	Perhaps one of the most important economic effects of sport can be considered is the reduction of the death and mortality of the social layer that has been spent a lot by the government.	Reduction of death and mortality of the elderly
	An elderly person, who maintains his health, whether through exercise or other similar methods, is more productive for a longer period of time,	Increase the productivity of the trained workforce

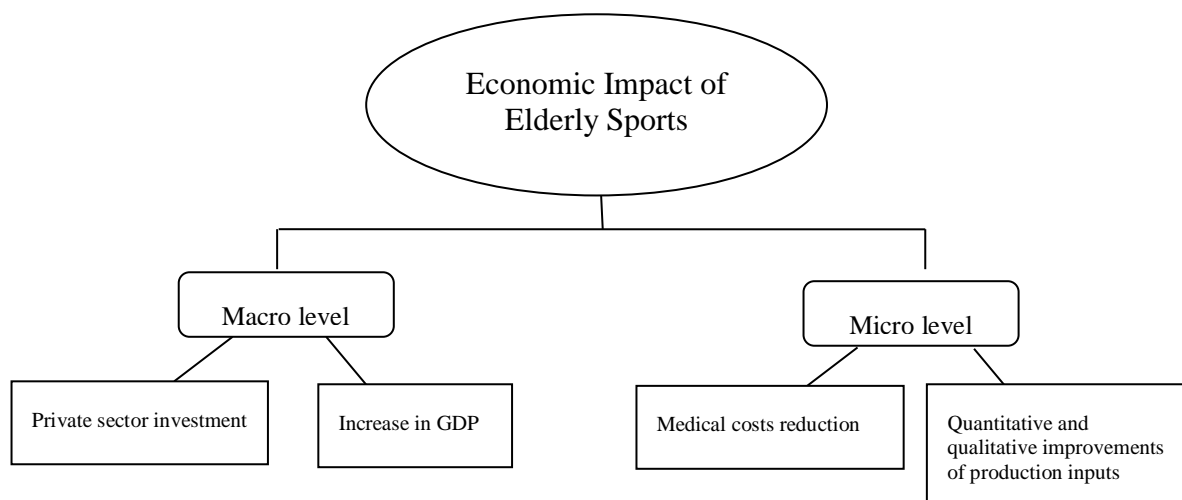
	and it is important to note that this workforce is a trained workforce with many years of experience.	
	An active older person who does his/her daily chores gives those around him/her the opportunity to have more time to take care of things; This means liberating a younger workforce to do the work of society.	Increasing the efficiency and productivity of elderly families
	One of the most obvious benefits of exercising in old age is distancing of the elderly from medical centers, which with a deeper look at this issue, we can point to the reduction of economic costs allocated in this field.	Fewer elderly people go to the hospital
	The active elderly person either does not go to the hospital or, if he /she goes to these centers for any reason, is admitted for a shorter period of time than his / her non-sports peers.	Reduce the length of stay of the elderly in the hospital
	Consumption of medicinal items is lower in athletes than in non-athletes at all ages, and this difference develops more in the elderly due to age conditions and more drug use.	Reduce drug use by the elderly
	A healthier elderly means a more dynamic insurance industry for more diverse services; Because as the usual costs for the elderly are reduced it can be said that the opportunity to provide better services in all other areas is provided.	Profitability of insurance companies due to reduced costs for the elderly
	Due to specific issues related to elderly sports, employment in this area will definitely increase.	Creating employment for senior sports activists
	Athletes, whether elderly or not, will not miss their work days due to illness.	Reducing the absence of the elderly due to illness
	Undoubtedly, on similar working days, those who do sports will be more useful, which is also true for the elderly.	Make more profit on business days
	A more general view of this issue is that by considering all the issues related to the relationship between sports at any level, including the elderly, and the GDP of each country, we can easily point to the positive impact of elderly sports in this area.	Increase in GDP
	According to the needs of the elderly to exercise, the wheel of production of sports goods and, more importantly, sports services will be better suited to them.	Production of sports goods and services suitable for the elderly
A2	Active elderly will definitely start jobs in all fields due to the physical and psychological benefits of exercising; Because a goal other than economic income is a priority for them.	Increasing entrepreneurship by active seniors
	If we can look at the elderly community as an asset, not an overhead, we will find that this huge asset will become more active through exercise. They carry a wealth of expertise that must be used to the fullest extent possible, especially in economic growth and prosperity.	Use the skills and work experience of the elderly
	The longevity of the elderly increases with exercise, which means that society, has a greater workforce as their mortality decreases.	Reduction of death and mortality of the elderly
	Diseases of the elderly and especially chronic diseases such as infectious diseases, migraines, etc. are definitely affected by exercise.	Reduction of chronic diseases of the elderly
	In completing the previous section, it is important to note that acute illnesses under the influence of exercise are less common in the elderly.	Reducing acute diseases of the elderly
	My personal experience shows that active older people are less likely to be hospitalized.	Reducing the hospitalization rate of the elderly
	In addition, they will stay there less if they are hospitalized.	Reduce the length of stay of the elderly in the hospital

A3	The active elderly person is considered as a work force.	Increasing employment of the elderly
	The more active the elderly, the more dynamic societies in all sectors of the economy, and this equates to an increase in GDP in each country.	Increase in GDP
	Sport demands its own needs for each class. the production companies show that good work has been done in this field recently to meet this need in the elderly sport which is really felt (Participants referred to specific companies that did not mention the names of the companies in order not to advertise).	Establishment of aging sports production and service companies by the private sector
	The elderly athlete definitely needs less care, which means that families and relatives of the elderly will also have more leisure to connect to the economic cycle.	Increasing the efficiency and productivity of elderly families
	Another of the most obvious results of sports, especially with the discussion of aging, is the reduction of the death rate of active elderly, which means an important improvement in the quantity and quality of manpower in the country.	Reduction of death and mortality of the elderly
	Definitely the elderly who live healthy mentally and physically due to doing exercise are present in their workplaces every day.	Reducing the absence of the elderly due to illness
	This active force has lower hospital and health costs.	Reduce hospital costs for the elderly
	Of course, it should not be overlooked that compared to the inactive elderly, the active elderly are less admitted to medical centers.	Reducing the hospitalization rate of the elderly
	If a plan is devised to manage the profits from the less use of the active elderly from insurance companies could be spent on welfare services for other elderly; It can be one of the most important economic effects.	Profitability of insurance companies due to reduced costs for the elderly
	From another perspective, by providing sports services by various institutions, we can show a double arrow: 1- Meeting the sports needs of this segment of society, 2- Generating revenue for the public and private sectors from this sector.	Production of sports goods and services suitable for the elderly

As described in the table, 22 open source code without repetition were counted from the total of interviews and related texts and researches. Researcher, integrated open codes in the form of more abstract concepts after the initial coding stage, by analyzing the data and putting several open codes together for several times in the same process. Therefore, the open codes were classified into 4 concepts. Finally, these concepts were classified into 2 categories.

**Table 4.** Social Impact of Elderly Sports in Iran

Row	Indications	Concepts	Categories
1	Increase in GDP		
2	Increasing employment of the elderly		
3	Creating employment for elderly sports activists	Increase in GDP	Macro level
4	Increasing entrepreneurship by the active elderly		
5	Production of sports goods and services suitable for the elderly		
6	Profitability of insurance companies due to reduced costs for the elderly		
7	Private sector financial support for holding sports festivals for the elderly		
8	Establishment of aging sports production and service companies by the private sector	Private sector investment	
9	Reduction of death and mortality of the elderly		
10	Reducing the absence of the elderly due to illness	Quantitative and qualitative improvement of production inputs	Micro level
11	Increase the productivity of trained workers		
12	Make more profit on business days		
13	Use the skills and work experiences of the elderly		
14	Increasing the efficiency and productivity of elderly families		
15	Reducing health costs		
16	Fewer elderly people go to the hospital		
17	Reducing the hospitalization rate of the elderly	Reduce medical costs	
18	Reduce the length of stay of the elderly in the hospital		
19	Reducing chronic diseases of the elderly		
20	Reducing acute diseases of the elderly		
21	Reduce hospital costs for the elderly		
22	Reduce drug use by the elderly		



**Figure 1.** Economic Impacts of Elderly Sports in Iran



#### 4. DISCUSSION AND CONCLUSIONS

Human growth has several stages. Aging is the last stage of human life which is associated with decrease in physical and mental performance and increased exhaustion. Decreased performance, degeneration and disease related to geriatric individuals are the major factors responsible for high economic costs for different communities. On the other hand, diseases such as depression and isolation cause social anomalies which, adversely affect their overall wellbeing. Exercise and physical activity is one of the least expensive options that can help them in making their quality of life better.

Findings related to economic effects were divided into micro and macro categories. The macro category consisted of the two concepts i.e. to increase GDP and private sector investment. The micro level was formed from the two concepts i.e. Quantitative and qualitative improvement of production inputs and reduction of medical costs. The concept of quantitative and qualitative improvement of production inputs consisted of 6 indications and the reduction of medical costs consisted of 8 indications.

Numerous studies have been conducted on the economic benefits of elderly sports, Eskandari (2017) has introduced the economic factor as the most important obstacle in the way of participation of the elderly in sports. The importance of economics and investment efficiency is greatly emphasized in different societies (Lopez et al., 2018). According to the concepts extracted in this research, there are 4 main concepts that should be considered by activists and officials in the field of elderly: 1) GDP. 2) Private sector investment. 3) Quantitative and qualitative improvement of production inputs. 4) Reduce medical costs.

GDP is directly related to a country's economic growth, which is affected by many variables (Lunenfeld, 2002). Each country has definite goals and vision for the development of their region. Budget is a very important economic tool that is used to monitor and control expenditures. Budget allocation and monitoring is primarily done by state organizations with the aim to achieve the desired outputs along with the provision of social services. Organizations such as the Ministry of Welfare and Social Security, Wellbeing, Imam Khomeini Relief Committee, pension funds, medical universities, research centers and municipalities are among the institutions that are under the supervision of the government or affiliated with the state must provide for the elderly according to their missions (Djalalinia, Tehrani, Afzali, Peykari, & Eftekhari, 2012). By paying attention to sports for the elderly, it can really increase the investments and budgets of the institutions. Effective investments in the field of sports for elderly may help in improving improve the economic cycle and

ultimately increase GDP. Elderly sports can help in reducing the costs of each of these institutions. The resulting budget can thereby be invested in other sectors of production and development to increase the production cycle and improve the infrastructure (Bean, Vora, & Frontera, 2004). Various studies have revealed that a 30% increase in GDP may seem a bit far-fetched due to aging exercise, but as per the results of a study conducted by Cadillac et al. (2011) even a small increase in physical activity can lead to this dramatic increase in GDP. According to their research findings, a 10% increase in physical activity in communities leads to 6,000 fewer illnesses, 2,000 fewer deaths, an increase in day-to-day earnings of 114,000 hours, and a work-day profit of 180,000 hours (McPhee et al., 2016). This is only part of the positive effects of exercise on increasing GDP, and it does not mention the budget surplus for medical services.

State government is required to spend part of their revenue on social services, but this is difficult to apply in the private sector. Private sector investors always seek to make profit from their activities (Middleton et al., 2018). Though, Insurance companies have made various investments in the field of the elderly in the form of medical insurance policies or life insurance policies. If insurance companies reduce the costs of the elderly in their policies, it can be expected that the capital available in this sector will lead to the growth and development of service programs for the elderly (Mirzaie & Darabi, 2017).

As per the findings of the study conducted by Maravino (2016), private insurance organizations benefit the most from the health of the elderly, and even some insurance organizations have made sports and health services as part of their services in recent years. Special events for the elderly can be designed, with the development of elderly sports (Morvati Sharif abad MA, 2004). In this regard, Franco et al. (2015) stated that the elderly should not be considered a featureless or stupid class of society, rather elderly must be given the utmost respect in the society.

The elderly play role models for the youngsters in many aspects (Franco et al., 2015). Their participation in the sports activities have many marketing and advertising potentials which may attract many investors (Nikpour & Hasanakizadeh, 2020). Therefore, structured organizations and institutions can organize elderly sports, to help the elderly and to make profit for their organization.

Maintenance and improvement in the quantity and quality of production inputs is the primary concern for any government or organization. Mental and physical health issues can increase absenteeism and decrease motivation in elderly and thus reduce the efficiency of the organization (Middleton et al., 2018). Numerous studies have shown an increase in life expectancy in different communities (WHO, 2011; Shahbazi, Mirkhani, Hatamizadeh, & Rahgozar, 2008; Taheri, Mohammadi, Paknia, & Mohammadbeigi, 2013; Tinker et al., 2017; Zamani, Hosseini, & Rajaei,

2013). According to Franco et al. (2015), a constructive and positive approach and attitude of societies to old age is very important. At one end elderly are considered to be at place of expense on the other hand, elderly can be considered as a factor to make wealth and production.(Nikpour & Hasanakizadeh, 2020).

Orientation of organization and government towards promotion of elderly sports, may help elderly in maintaining their health and well-being along with the benefit to their organization. Private sectors should make effort in this direction and try to use the potentials and experiences of the elderly in various sectors. Significant reduction in the health care costs has attracted the attention of many health policymakers and governments. The results of the study conducted by Johnson (2007) have shown that the cost of prescriptions, health services and nursing homes for the over-65 age group is nearly 15 times much more than of the under-65 age group (Mirzaie & Darabi, 2017).According to the results of other researches, the dimensions related to the reduction of medical expenses have been divided into two main parts:

1. Reduction of the incidence of the disease
2. Faster recovery

Constant effort in improving and maintaining physical fitness amongst elderly is one of the key necessities of the old age individuals. The best way to work for physical fitness is by maintaining a routine of daily exercises which unlike medicines have no adverse effects. (Shahbazi et al., 2008). Mackie et al. (2016) also believed that investing in sports, by the elderly or by government agencies, is a major necessity because it contributes a lot to cost-effectiveness.

Regarding the economic efficiency of exercise for the elderly, they stated in their study that the average cost of medical care for the elderly in the United States ranged between \$ 5,000- \$ 7,000 per year (in some cases up to more than \$ 25,000 due to surgery). It has also been reported that the average cost of health and sports centers is between \$ 400-800 per year (although the cost of some services such as hydrotherapy or special massages can reach \$ 8000 per year (Jenson, 2007). It is also noteworthy that the elderly receiving medical services pay for the rehabilitation and nurse employment programs post treatment. Thus, a healthy elderly person can become an entrepreneur and contribute to the production cycle (Tinker et al., 2017). Therefore, reducing illness and doing physical activity can save a lot of money for the elderly.

Elderly who are physically and athletically active are in a better physical and mental condition. This makes them less prone to any illness or to any disease leading to the situation of hospital emergency. It also leads to reduced hospital stays and reduced treatment costs (World Health Organization, 2011).

Several authors have emphasized the importance of mental health of the elderly in maintaining good health (Lee et al., 2018; Middleton et al., 2018; Zamani et al., 2013). Lee et al. (2018) conducted a study that stated that the depression is the most common mental illness among the elderly. They also identified depression as a major cause of abnormal behaviors, drug and smoking abuse, and even a cause of many acute and chronic mental and physical illnesses. In conclusion, mental fitness of elderly is equally important as physical fitness is, and equal attention should be given to both for the general wellbeing of the elderly.

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### **AUTHOR CONTRIBUTIONS**

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

### **CONFLICTS OF INTEREST**

The authors declare no conflict of interest.

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