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## Effective educational and promotional factors on reducing the consequences of the targeted subsidies from the viewpoint of Semnan greenhouse owners

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### ABSTRACT

The purpose of this study is to investigate the educational and promotional methods for reducing the consequences of the targeted subsidies from the view of greenhouse owners of the Semnan province. This is an applied research and it has done by causal-comparative method. Statistical universe of this study is greenhouse owners of Semnan province. The sample size was calculated using Cochran formula and it includes 287 greenhouse owners. The SPSS software was used to analyze the data obtained the questionnaires. For testing hypotheses of this research, correlation coefficient, multiple regressions were utilized. The results show that there is a positive correlation between training about the management of greenhouse and training about economical methods for management of greenhouse expenses variables and dependent variable.

**Keywords:** Educational and promotional, Greenhouse owners, Targeted subsidies, Semnan province.

### INTRODUCTION

During the past years, there have been special attentions paid to the production of agriculture products. In controlled environment (green house), especially soil-less plantation systems or hydroponics of all kinds of ornamental flowers, vegetables, fruits and medical plants [13,14]. A greenhouse is a building in which plants are grown. Nowadays, greenhouse products are considered as one of the most important elements of people's daily consumption. This is more important when we consider to this important point that in Iran farmers are forced to produce the crops an enclosed area due to the shortage of water resources and land quality and climate changes. However; targeted subsidies plan had some effects on it in last year's [1,10,12].

The Iranian targeted subsidy plan also known as the subsidy reform plan was passed by the Iranian Parliament on January 5, 2010. The goal of the subsidy reform plan is to replace subsidies on food and energy (80% of total) with targeted social assistance, in accordance with Five Year Economic Development Plan and move towards free market prices in a 5-year period. According to the government, approximately \$100 billion per year is spent on subsidizing energy prices (\$45 billion for the prices of fuel alone) and many consumable goods including bread, sugar, rice, cooking oil and medicine [2, 11].

As a reflection of the implementation of targeted subsidies plan, many greenhouse owners have been declared bankrupt due to the increasing of fuel prices [3]. The main problem of greenhouse owners is not only providing material of production such as, fuel, seeds, plastics, fertilizer, pesticide but also marketing and supplying human

resources whose prices have increased manifold [4-5]. Low fertility is reported to be one of the major causes of maize yield loss in the tropics [15,16]. On the other hand, the researchers have emphasized that in comparison with other countries the performance of greenhouses in Iran is not desirable due to the lack of proper technical knowledge [6]. Such poor performance, greenhouses debilitate against the shocks produced by price changes of energy.

It seems that identifying the educational and promotional factors in order to deal with the problems stated above is very important. Although many researchers have been done in this field; they are not unique to Semnan province. In the study accomplished by Latimer et al., (2002) [7] revealed that greenhouse owners educational needs and interests of Virginia are including plant nutrition management, organized way to automate tasks related to greenhouses, activities related to maintenance of greenhouse plants and water consumption management in the greenhouse.

In Mattson's study entitled "Assessing the educational needs of New York State greenhouse owners", greenhouse owners declared the educational needs in the sections including the strategies to increase product quality, diseases control, management of the place that greenhouse plants grow, irrigation management, chemicals feed and marketing the crops [8]. In one study [17] discussed about the soil amendments to enhance lead uptake.

The main paper that is relevant to this study is about identifying needs of greenhouse owners in Garmsar town (one of the towns of Semnan province) [9]. This is an applied research. In this paper, as data collecting tools notes, interviews and questionnaires were used. Based on the information obtained, their needs classified in the several types such as, providing classes for pruning shrubs, proper irrigation, the processes including temperature control, humidity control, eradication pests and diseases and planting stages (germination of land). Experts classified these requires not only into the appropriate irrigation, familiar with pests, diseases and weeds but also to suitable varieties of products, biological control, chemical feed, planting methods, appropriate methods to increase the product quality and procedures after harvesting.

The overall objective of this study is to investigate the methods of educational and promotional for reducing the consequences of the targeted subsidies from the greenhouse owners of the Semnan province.

## MATERIALS AND METHODS

This is an applied research and it has done by causal-comparative method. The place investigated research is Semnan province (One of the provinces of Iran). Based on the detailed results of the General Census, there are nearly 700 active official greenhouses in this province.

The study population is consisted of all greenhouse owners of Semnan province, which plant at least 1,000 square meters (0.1 hectare) of greenhouses in each period planting. Based on the Cochran formula, the sample number was estimated 287 greenhouse owners. In this study, random sampling was used and Collecting data tool is document analysis, library research and field study. The main tool used in this research was questionnaires. Using theoretical and hypotheses research, questions were designed and after the validity and reliability, modifications carried out on them. The field study was used to complete the questionnaires. Descriptive statistics were used and data was analyzed by SPSS21 software. In addition, correlation, multiple regressions were done.

## RESULTS

The research findings represent that 12.5% greenhouse owners are below the age of 30 and 1.4% of them are above the age of 60. On this basis, the most frequency greenhouse owners were 92 people, between 31 to 40 year old people (see table.1).

The level of education of 0.7% (2 greenhouse owners) greenhouse owners was in the level of familiar with reading and writing, and 24.7% (71 greenhouse owners) had the B. A. degree and above. In addition, the most frequency of this classes belonged to the people with high school graduation (34.1%) users have averagely 98 heads and 29.3% (84 people) of greenhouse owners had the technician graduation. (Table 1)

Based on the results of amount of greenhouse lands, 57.1% declared the amount of their greenhouse lands was below 0.5 ha, whereas 30.7% (88 people) declared the amount of their greenhouse lands was between 0.5 to 1.00 ha. In addition, 12.2% (the minimum frequency) declared it was above 1.00 ha. (Table 1)

**Table 1. The personal characteristics of specialists under study: Greenhouse owners' age, Level of education and amount of greenhouse lands**

Individual characteristics	Range	Abundance (Person)	Percentage
Age: n=287	To 30 yrs	36	12.5%
The lowest:24	31-40	92	32.1%
The highest:65	41-50	64	22.3%
SD:8.653	51-60	91	31.7%
Average:43	Over 60 yrs	4	1.4%
Education level: n=287	Reading & writing	2	0.7%
	Eight class	32	11.1%
	High school diploma	98	34.1%
	Associated diploma	84	29.3%
	B.A. and higher	71	24.7%
Amount of lands: n=287	To 0.5 ha	164	57.1%
The lowest:1000.000	0.5-1	88	30.7%
The highest:13500.000	Over 1 ha	35	12.2%
SD:3400.77331			
Average:5404.5296			

In this study, seven educational and promotional factors are investigated including 1. Training about the management of greenhouse. 2. Training about using promoted thermal tools updated with modern technology. 3. Training about economical methods for management of greenhouse expenses. 4. Training about using free and renewal source of energy. 5. Training about insurance of greenhouse products. 6. Promotional training via videos and magazines. 7. Training about reducing the diseases in greenhouse. The descriptive statistics of variables are shown in table 2.

**Table 2. Descriptive statistics of variables**

Variable name	Mean	Std. Deviation	Coefficient of Variation
Training about the management of greenhouse	4.36	0.652	0.14954
Training about using promoted thermal tools updated with modern technology	4.22	0.412	0.09763
Training about economical methods for management of greenhouse expenses	4.56	0.497	0.1899
Training about using free and renewal source of energy	1.12	0.328	0.29285
Training about insurance of greenhouse products	4.2753	1.26995	0.297
Promotional training via videos and magazines	2.2718	0.96947	0.426
Training about reducing the diseases in greenhouse	5.00	0.00	0.00

1 = very low, 2 = low, 3 = average, 4 = high, 5 = very high.

### Correlation studies

In order to study the relationship of research variables, we use the Pearson correlation coefficient between independent variables and dependent variable. Table 3 shows the results of this part. According to table 3, there is a positive and meaningful correlation between reducing expenses to age, level of education, training about the management of greenhouse and training about economical methods for management of greenhouse expenses.

**Table 3. Pearson correlation coefficient between independent variables and dependent variable**

Independent variables	Pearson coefficient	Sig.
Age	-0.255	0.000
Level of education	0.322	0.000
Amount of greenhouse lands	-0.021	0.727
Training about the management of greenhouse	0.29	0.000
Training about using promoted thermal tools updated with modern technology	0.058	0.236
Training about economical methods for management of greenhouse expenses	0.199	0.001
Training about using free and renewal source of energy	0.056	0.345
Training about insurance of greenhouse products	-0.004	0.950
Promotional training via videos and magazines	0.003	0.959

## DISCUSSION

### The multi-variable regression analysis

At this stage, we use the multi-variable regression by means of backward method in order to evaluate the cumulative effect of independent variables on dependent variable of reducing the consequences of the targeted subsidies.

All independent variables come into analysis and the effects of all independent variables on dependent variables will be tested. But, the meaningless variables, one after another gradually go out of this equations, and eventually these phases will be continued till the time when the error of a meaningful test gets 10%. Table 4 shows the finding of the

regression analysis. According to table 4, there is a linear relation between variables of Training about the management of greenhouse and Training about economical methods for management of greenhouse expenses to dependent variable. The results of this study confirm those of study accomplished by Latimer et al., (2002) [7] revealed that greenhouse owner's educational needs and interests of Virginia are including plant nutrition management (management of greenhouse). In addition, in Mattson's study entitled "Assessing the educational needs of New York State greenhouse owners", greenhouse owners declared the educational needs in the sections including the strategies to increase product quality, diseases control, management of the place that greenhouse plants grow [8].

**Table 4. The finding of the regression analysis**

Variable name	B	Beta	S.E.	t	Sig.
Training about the management of greenhouse	-0.188	0.325	0.036	5.154	0.00
Training about economical methods for management of greenhouse expenses	0.138	0.181	0.055	2.486	0.014

## CONCLUSION

The greenhouse industry is one of the most important industries having many benefits for agricultural section; however, many greenhouse owners were bankrupt from the beginning of the target subsidies plan. This survey was done with the purpose of regression analysis of effective factors on reduce the consequences of targeted subsidies from the view of greenhouse owners of Semnan province.

This studies which were done by correlation coefficient (table2) show that there is a relationship between reducing the consequences of targeted subsidies and the variables of the Training (including the management of greenhouse and training about economical methods for management of greenhouse expenses).

The finding of regression analysis shows that the Training about insurance of greenhouse products had no meaningful effect on reducing the consequences of targeted subsidies. Therefore, it removed in first stage. At last, after doing regression analysis in each step and removing the variables that had no meaningful effect on dependent variable, 2 variables obtained from this analysis: Training about the management of greenhouse and Training about economical methods for management of greenhouse expenses.

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