Evaluation of M.A Communication of Science- Applied Graduates in Their Relevant Jobs

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Abstract
The main goal of this research is to evaluate the graduates of the Communications Major of Scientific- Applied University in Tehran. The methodology of the research is descriptive (surveying) in terms of data collection and is applied in terms of the goal of research. The statistical population of this research includes all graduates of Communication Major in Science- Applied University in the relevant fields in the city of Tehran. To collect data, the author-developed questionnaire was used and to determine the validity of the tools, the contextual validity method was employed. For this purpose, specialists that were familiar with the subject of research were asked to judge on the contextual validity of the questionnaire and in general, it was concluded that the mentioned questionnaire has acceptable validity in contextual terms. "Cronbach Alfa" was used to assess the reliability of the tools, resulting in .78 as the coefficient. The results show correlation between the input, ground and process factors and the output. Based on the results of the research, positive correlation was found between the ground factors and the input factors, including gender, age, marital status and job situation; and negative correlation was found between the ground factors and the input factors including education level, type of job, job relations, duration of occupation/employment and income.
Keywords: *Evaluation, graduate, communication major, Scientific- Applied University, Job*

Introduction

Human skills and capabilities are among the most important issues that lead to the progress and welfare of any societies. An efficient and skillful human resource being also equipped with sufficient knowledge, not only causes an improvement in the living status of the person or the employer, but also, it will have general effects on the status of the society in all aspects; for this reason, training efficient human forces for work market has been one of the constant concerns of educational planners in any countries in the world.

Efforts in establishing a link between training and work has never been so important matter in a specific period of human life. Man has been pursuing applicable knowledge since past centuries when teaching used to be performed in pupil- master apprenticeship template in the real-world work place (workshops), continuing to this date as skills are

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taught in various types, categories, ranks and levels by gigantic organizations which are engaged in this process. All these efforts have been aiming at preparing individuals to work, achieve economic independence and to become a member of social life; nevertheless, the line that marks contemporary era from past is the increasing expansion of knowledge and subsequently, variation in scopes and ranges of work.

Special attention to applicability template of education category is one of the methods which are considered in both our country and many others in achieving the educational goals and aims. That is, the establishment of technical and vocational schools and higher education institutes. Scientific- Applied University could be evaluated in this line. The curriculum developers try to create conformity between the skills that are acquired and job market demands through the expansion and improvement of this educational method; therefore, they spend budget, efforts and specific energy in curriculum planning for scientific-applied programs. Now, the problem is how successful those policies have been proved so far?

Educational evaluation is one of the methods in studying the degree of success in educational planning. Education planning helps researchers to determine the educational goals and aims specify its stages and make an assessment of the degree of its success. One of the challenges faced by researchers in educational field is to find a model in education evaluation that could be used in finding the best ways in achieving the most reliable responses.

There are different models to be used in the assessment and the researcher has the option of using any of them depending on his/her need. When a specific model fails in meeting the research demands, the author usually adopts a combination of models or develops his/her own models. It seems that evaluating the range of scientific- applied education would not be possible by using known models. There are some goals and policies beyond scientific-applied education thoughts and, this factor, alongside the unique relationship between those trainings and range of work intensifies the need to use an overall and full extent model.

On the research background, "Bahman Khosravipour" and "Zohreh Monajemzadeh" (2001) concluded that from the viewpoint of majority of students, the most important factors that affected their decision on continuing their studies in Master's Degree was the lack of suitable job opportunities and the most important factor in choosing agriculture major in university was being admitted in the nation-wide university admission examinations for that field of study. In addition, emphasis on scientific and applied subjects in addition to the theoretical courses and increase in number of hours for academic courses in the universities were stated as the most important factors in the entrepreneurship capabilities of the agriculture graduates.

Lack of information on job market that fits education, unsuitable level of knowledge and empirical and occupational skills of agriculture graduates were the most important obstacles in entrepreneurship and employment of agriculture graduates. In addition, the results from comparing the mean average showed significant differences in the students' views on the degree of importance of the effectiveness of each factor in the

entrepreneurship in postgraduate graduates as per their gender, major, type of admission and admission year.

"Faezeh Akhlaghi", "Mohammad Hossein Yarmohammadian", "Masoumeh Khoshgam" and "Noushin Mohebi" (2010) in a research concluded that highest total desirability of higher education was the faculty members factors in the input area (human resources section) and the least total desirability was the budget factor in the input area (financial resources section). In addition, the general conclusion was that constant evaluation of the curriculum in medical documents majors for Master's Degree program would help in studying the weak and strong points of the programs and improving their quality.

"Masood Asgari" and "Habib Rostai" in their paper ,"ACECR and its Role in the Management of Scientific- Applied Education" studied the capabilities of this institute in holding specialized educational courses and/or refreshment programs for the specialists in the country by noting that the legal place and approved the duties of ACECR in official execution of scientific- applied education programs.

"Fazlollah Talebi" (1999) in his paper discussed the role of education in developing human resources, and studied the nature of scientific- applied education and the role of strategic management in drawing up suitable strategies for the development, deepening and continuing of those education programs.

"Hossein Rouhani" (1998) studied scientific- applied education as an optimized approach of higher education and while studying the experiences of other countries, discussed this approach with respect to the conditions of Iran.

"Nasrin Jahanshiri" and "Ali Soltani" in their paper discussed the process of feasibility with emphasize on educational and curriculum feasibility, followed by introducing the scientific-applied higher education, method of planning scientific- applied curriculum and the difference and distinctions between those education courses with the conventional education in other universities. The discussion ended by answering the question of how this method of education could make grounds for associating the science and practice.

"Mohammadreza Shahasand" and "Asghar Bagheri" (2011) conducted a research during 2000-2004 for studying the effects of scientific- applied education in the job empowerment of employees of the Ministry of Jihad-e- Agriculture and concluded that the educational courses in all empowerment indexes had desirable role. In addition, the four factors that are introduced included educational skills of instructors, establishment of association between education and work, improvement of creativity and self-teaching power and reinforcement of power of thought and participation. The results of the research showed that the variables of improvement of creative thought and power of analysis in the learner, suitable communication of instructors and learners, attention to the most up-to-date innovations and originality, establishment of problem solving skills in learners, particularity and conveying means by the instructors were effective in empowerment.

"Mohammad Taghi Shariati" and "Alireza Mohajer" in a research paper evaluated 16 curriculums with the determined standards and specified many weaknesses and shortcomings including 13 cases in the area of "role and capabilities" and 13 cases of

shortage in "behavioral goals". This study showed that essentially no careful and proper feasibility is performed for the courses, the planning method is not uniform, the instructions and by-laws were either not observed in full or good enough, and the process of planning as well as the planners' skills had flaws. They concluded that serious attention to the study and research on this issue, development of capabilities of education curriculum authorities and re-examining the associate degree programs in agriculture and industry are requisites in promoting the quality of scientific- applied education, along with expanding the number of the program.

To develop scientific- applied education, Dr. "Esmat Masoudi Nedoushan" used the alternatives prioritization methods (the Multiple Criteria Decision Making [MCDM]) to prioritize different zones for establishing scientific- applied education centers.

"Nader Leyss", "Mohammad Chizari", "Ahmad Rezvanfar" and "Enayatollah Abbasi" (2012) in a research have found positive and significant relationship between the education of father, monthly income of family and using entrepreneurship education method, with acquiring and developing job skills of students. Therefore, they suggested to hold educational workshops as the most effective education methods by giving priority to the contents of specialized courses in different knowledge and skills levels in the curriculum of educational books and professional courses for the students for providing job skills development in order to prepare students to seek employment, profession and business in different occupations.

"Mohammad Rezaei" and "Nourollah Pasha" (2006) in their study did not observe positive perspectives of the anticipations and expectations of scientific- applied institutes, including the authorities and students on the scientific-applied centers. In their views, the performance of those centers in parts of the grounds is not in line with definite plans and goals as set forth in the by-law for the establishment of those centers. Although considerable facilities and resources have been developed, the outputs of those inputs were not desirable and acceptable by those involved in the process, including the managers and the students. It seems that lack of applicability of educations in scientific-applied centers was the most important weakness and flaw in them. They concluded that scientific- applied institutes have deviated from the most important goal and aim of their founders.

Methodology

In terms of collecting the data, the present research is descriptive (survey) and based on the goal of the research, it is applicable. The statistical population of this research included all graduates of Communication in Scientific- Applied University of Tehran in relevant jobs. Based on "Cochranbakh" formula, the volume of sample consists of 315 graduates in communication major. The author-developed questionnaire was used for data collection. The research questionnaire contains 40 questions which were ranked as closed-end answers based on "Likert" scale questionnaire with five scoring, ranging from very high to very low. The contextual validity was used to determine the validity of tools. For this purpose, the specialists familiar with the research subjects were asked to judge the validity of the questionnaire contents and in general, it was concluded that in terms of

contextual validity, the questionnaire had acceptable validity. In order to evaluate the reliability of the tools used in the research, Cronbach Alfa coefficient was employed which yielded .78 as the coefficient. The regressions, T, Levene's, Unilateral ANOVA and Duncan tests and Pierson's correlation coefficient were used for data analysis.

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Results and Discussions

Studying the significance of gender status

With respect to the studies and the data in table no. one, the significance of the ground factors in "Levene's" test was 0.001 which is less than 0.05. As a result, to study the equality of variances, the sig.2 of the second line is taken and as its value is higher than 0.05, the assumption of equality of the means of both groups is approved. The Sig of output factors in "Levene's" test is 0.0356, and as it is bigger than 0.05; thus, to study the variances equivalence, the sig. two of first line will be taken as the basis. The sig2 of the first line is equal to 0.001, being less than 0.05; and therefore, the assumption of equality of the mean average is rejected and inequality of the means is approved.

The sig. of process factors is equal to zero, and being less than 0.05, to study the variance, the sig. 2 of the second line becomes the base. The value of the latter is 0.024, which is less than 0.05; as a result, the assumption of equality of means is rejected and the inequality of mean averages is approved.

Table 1: T. Test and Levene's Test of gender status of the society sample

		Independent Samples Test				
Factors	Status	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
Ground	Equal variances assumed	10.806	.001	-.687	313	.492
	Equal variances not assumed			-.732	309.409	.465
Output	Equal variances assumed	.853	.356	3.255	313	.001
	Equal variances not assumed			3.163	239.174	.002
Process	Equal variances assumed	13.976	.000	2.455	313	.015
	Equal variances not assumed			2.279	200.241	.024

Study the Significance of Marital Status
With respect to the Sig in "Levene's" test, the ground factors with the value of 0.34, the sig2 of first line with the value of 0.464 is taken as the base ; and, as it is larger than 0.05, the assumption of equality of means in the two, single and married groups, is approved. The output factor Sig in the "Levene's" test is equal to 0.207 which is bigger than 0.05; as a result, to study the equality of the variances, the sig2 of first line is taken as the basis. The sig. 2 of first line is equal to 0.342, which is larger than 0.005. As a result, the variance equality assumption of the two single and married groups in the process factors is approved.

Table 2: Marital status of Group Statistics

Group Statistics

Factors	Marital status	N	Mean	Std. Deviation	Std. Error Mean
Ground	Single	130	2.3242	.79803	.06999
	Married	185	2.3900	.76501	.05624
Output	Single	130	2.8923	.57393	.05034
	Married	185	3.2757	.62962	.04629
Process	Single	130	2.9231	.63230	.05546
	Married	185	2.9899	.58455	.04298

Table 3: T. Test and Levene's Test of marital status of the sample society

Independent Samples Test

Factors	Status	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Df	Sig. (2-tailed)
Ground	Equal variances assumed	.914	.340	-.738	313	.461
	Equal variances not assumed			-.733	270.356	.464
Output	Equal variances assumed	1.601	.207	-5.516	313	.000
	Equal variances not assumed			-5.606	292.688	.000
Process	Equal variances assumed	6.415	.012	-.965	313	.335
	Equal variances not assumed			-.952	263.774	.342

Study the significance of job occupation

With respect to the Sig in "Levene's" test, the ground factors that are equal to 0.028, the sig2 of the second line is the base with "0" value, which is smaller than 0.05; therefore, the assumption of equivalence of means is rejected and the inequality of the averages is approved. The Sig in output factors in "Levene's" test is 0.891, which is larger than 0.05 and as a result, to study the variance equality, the sig2, the first line is considered as base. The sig2 of first line is equal to 0 and is less than 0.05; as a result, the assumption of equality of means is rejected and the inequality of means is approved.

The *Sig* of process factors in "Levene's" test is 0.417 which is larger than 0.05; thus, to study the sig2 variance, the first line is the base with 0 value; which is smaller than 0.05. As a result, the assumption of means equality is rejected and the inequality of means is approved.

Table 4: The job status of the group statistics

Group Statistics					
Factors	Job status	N	Mean	Std. Deviation	Std. Error Mean
Ground	Unemployed	75	1.8857	.81728	.09437
	Employed	240	2.5119	.70365	.04542
Output	Unemployed	75	2.7333	.60479	.06983
	Employed	240	3.2375	.59658	.03851
Process	Unemployed	75	2.6500	.57796	.06674
	Employed	240	3.0599	.58024	.03745

Table 5: T. Test and Levene's Test on the Job Status of the Sample Society

Independent Samples Test						
Factors		Levene's Test for Equality of Variances		t-test for Equality of Means		
	Situation	F	Sig.	t	df	Sig. (2-tailed)
Ground	Equal variances assumed	4.885	.028	-6.466	313	.000
	Equal variances not assumed			-5.979	110.419	.000
Output	Equal variances assumed	.019	.891	-6.367	313	.000
	Equal variances not assumed			-6.322	122.344	.000
Process	Equal variances assumed	.660	.417	-5.345	313	.000
	Equal variances not assumed			-5.356	124.144	.000

Study the significance of educational program

With respect to the sig of the "Levene's" test, the ground factors with the value equal to 0, the sig2 is taken as the base, the value of which is 0.006 which is less than 0.005. As a result, the assumption of equivalence of means is rejected and the inequality of the means is approved. The Sig of output factors in "Levene's" test is equal to 0.571 which is higher than 0.05, as a result, to study the equivalence of sig2 variance, the first line is taken as the base. The sig2 of first line is equal to 0.079, which is higher than 0.05; as a result, the assumption of equivalence of the means of the two educational groups in the output factors is confirmed. The Sig of the process factors in the "Levene's" test is equal to 0.576; that as a result, is bigger than 0.05, and to study the variance, the sig2 of first line is taken as the base, the amount of which is equal to 0.435 that is bigger than 0.05, as a result, the assumption of equivalence of the means of the two groups in the output factors is approved.

Table 6: Education of the statistics group

			Group Statistics		
Factors	Education	N	Mean	Std. Deviation	Std. Error Mean
Ground	Associate Degree	105	2.5102	.54357	.05305
	Bachelor's Degree	210	2.2891	.86400	.05962
Output	Associate Degree	105	3.0286	.66009	.06442
	Bachelor's Degree	210	3.1619	.61906	.04272
Process	Associate Degree	105	3.0000	.59166	.05774
	Bachelor's Degree	210	2.9435	.61152	.04220

Table 7: The T. Test and Levene's Test of Education of the sample society

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
Factors	Status	F	Sig.	t	Df	Sig. (2-tailed)
Ground	Equal variances assumed	33.836	.000	2.395	313	.017
	Equal variances not assumed			2.770	296.931	.006
Output	Equal variances assumed	.322	.571	-1.762	313	.079
	Equal variances not assumed			-1.725	196.660	.086
Process	Equal variances assumed	.313	.576	.782	313	.435
	Equal variances not assumed			.791	214.341	.430

Study the significance of the age situation of the individuals of the subject of study

As mentioned before, in evaluating the variance analysis, the view of the sample society in different age groups for evaluating the graduates of Communication majors at the Scientific- Applied University is placed in the jobs related to the SIG criteria. If its amount is smaller than 0.05 and bigger than 0.01, one may judge that the difference between the groups subject of study is in 95% level. If the number which is obtained is less than 0.01, it could be claimed that the difference is significant in 99% level. In the evaluation of the author's studies, as table 4-43 shows, the significance level in the ground factors is sig=0, in the process factors is with sig=0.004 and in output factors, it is with sig=0; so in all cases, the significance is approved in 99% level; showing that individuals in different age groups expressed various views on the process, ground and output factors variables in the evaluation of graduates of Communication majors in the Scientific- Applied University in the relevant jobs.

Table 8: The unilateral ANOVA evaluation of the opinions of the sample society with different age groups for the evaluation of graduates of Communication majors of Scientific- Applied University in the relevant jobs

Factors		Sum of Squares	df	Mean Square	F	Sig.
Ground	Between Groups	31.219	4	7.805	15.222	.000
	Within Groups	158.949	310	.513		
	Total	190.168	314			
Process	Between Groups	5.609	4	1.402	3.982	.004
	Within Groups	109.178	310	.352		
	Total	114.787	314			
Output	Between Groups	17.487	4	4.372	12.415	.000
	Within Groups	109.167	310	.352		
	Total	126.654	314			

In continuation, for studying and specifying the significant differences between the opinions of persons in different age groups in connection with the ground, process and output factors Duncan Test has been used in evaluating the graduates of Communication majors in Scientific- Applied University in the relevant jobs. The results obtained from Duncan tests divided the effects between regions and/or different groups significantly towards consistent and insignificant groups.

As it is observed in table number eight, the 40- 50 years, 16-20 years and 20-30 years age groups are classified in one group; that is, the opinions of this age group in connection with the ground factors were similar regarding the relevant jobs for evaluating the graduates of Communication majors of Scientific- Applied Universities with no significant difference. The Duncan test classified the 30-40 years old age group in one separate group and the +50 years age group; too, in another group; both groups expressed unique vies on the ground factors.

Table 9: Evaluation of the difference of the opinions of sample society with different age groups in connection with the ground factors for evaluating the graduates of Communication majors in the Scientific- Applied University in the relevant jobs by using Duncan Test

		Ground		
		Duncan		
Age	N	Subset for alpha = 0.05		
		1	2	3
40-50	30	2.0000		
16-20	25	2.0857	2.0857	
20-30	200	2.3429	2.3429	
30-40	50		2.4857	
+50	10			3.9286
Sig.		.109	.061	1.000

Means for groups in homogeneous subsets are displayed.

With respect to variance analysis and its results with sig=0.004, significant difference was found between the views of different age groups in connection with the process factors. In view of Duncan Test (table 4-45), the 16-20 years, 20-30 years, and 40-50 years age groups were classified in one group and expressed similar opinions. The 30-40 years age group; too, was put in a separate group and the +50 years age group; too, was put in another group; both groups showed different views than other groups.

Table 10: Evaluation of the difference in views of sample society in different age groups in connection with the process factors in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs by using Duncan Test

		Output		
		Duncan		
Age	N	Subset for alpha = 0.05		
		1	2	3
16-20	25	2.8250		
20-30	200	2.8969	2.8969	
40-50	30	3.0000	3.0000	
30-40	50		3.1875	3.1875
+50	10			3.3750
Sig.		.328	.101	.263

Means for groups in homogeneous subsets are displayed.

With respect to unilateral ANOVA analysis and its result with sig=0, the Duncan test in table 11 specified that the 16-20 years, 20-30 years and 40-50 years age groups had same views on output factors and the 30-40 years age group; too, was put in one group and the +50 age group was put in another group, showing that each one of those age groups had different views on the output factors variables.

Table 11: Evaluation of difference in the views of sample society in different age groups in connection with the output factors in evaluating the graduates of the Communication majors of Scientific-Applied University in the related jobs by using Duncan test

Output				
Duncan				
Age	N	Subset for alpha = 0.05		
		1	2	3
16-20	25	2.9200		
20-30	200	3.0400	3.0400	
40-50	30	3.1333	3.1333	
30-40	50		3.2800	
+50	10			4.3000
Sig.		.232	.178	1.000

Means for groups in homogeneous subsets are displayed.

Study the significance of the type of occupation of people subject of study

In assessing the author's studies, as it could be seen in table 11, the significance level in the three factors of ground, process and output is sig=0 in all cases of which, the significance level is approved in 99%; showing that individuals with different occupation groups have different views on the process, ground and output factors variables for evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs. In continuation, to specify this different, Duncan test has been used.

Table 12: Unilateral ANOVA evaluation of the opinions of the sample society with different job groups in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs

	ANOVA					
Factors		Sum of Squares	df	Mean Square	F	Sig.
Ground	Between Groups	27.851	3	9.284	17.787	.000
	Within Groups	162.318	311	.522		
	Total	190.168	314			
Process	Between Groups	14.954	3	4.985	15.529	.000
	Within Groups	99.832	311	.321		
	Total	114.787	314			
Output	Between Groups	19.856	3	6.619	19.274	.000
	Within Groups	106.798	311	.343		
	Total	126.654	314			

As it could be seen in table 12, the civil employment and private sector job groups are classified in one group; that is, the views of these job groups in connection with the ground factors in evaluating the graduates of Communication major of Scientific- applied University in relevant jobs were similar with no significant difference. Duncan test classifies the civil employee (governmental) - private job group in a separate group and the unemployed group; too, in another group; both groups have unique views on the ground factors.

Table 13: Evaluation of difference in the views of sample society with different job groups in connection with the ground factors in evaluating the graduates of Communication majors of Scientific-Applied University in the relevant jobs by using Duncan test

	Ground			
	Duncan			
Type of job	N	Subset for alpha = 0.05		
		1	2	3
Unemployed	75	1.8857		
Private sector	35		2.2041	
Governmental- Private	80			2.4554
Governmental (civil employment)	125			2.6343
Sig.		1.000	1.000	.162

Means for groups in homogeneous subsets are displayed.

With respect to variance analysis and its results with sig=0.004, significant difference was found between the opinions of different job groups in connection with the process factors. With respect to Duncan test (table 13), it is noticed that governmental and private sectors job groups are classified as one group. That is, the views of those job groups in connection with the process factors in evaluating the graduates of Communication major of Scientific- Applied University in different jobs are similar with no significant difference. The Duncan Test classifies the governmental- private job group in one separate group and the unemployed group; too, in another group; and, both groups have unique views on ground factors.

Table 14: Evaluation of the difference of views of sample society with different job groups in connection with the process factors in evaluating the graduates of Communication majors of Scientific- Applied University in relevant jobs by using Duncan Test

Process				
		Duncan		
Type of job	N	Subset for alpha = 0.05		
		1	2	3
Unemployed	75	2.6500		
Private sector	80		2.8516	
Governmental- Private	35			3.1071
Governmental (civil employment)	125			3.1800
Sig.		1.000	1.000	.467

Means for groups in homogeneous subsets are displayed.

With respect to unilateral ANOVA analysis and its results with sig=0, the Duncan Test in table 14 has specified that the governmental (civil employees) and private sector job groups are classified in one group. It means that the views of these job groups in connection with the output factors are similar in evaluating the graduates of Communication major of Scientific- Applied University in the relevant jobs with no significant differences. The Duncan test has classified the governmental- private job groups in a separate group and the unemployed group; too, in one group, and has classified the unemployed group; too, in another group and both groups showed unique views on the ground factors.

Table 15: Evaluation of difference in views of sample society in different age groups in connection with output factors in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs by using Duncan Test

Output				
Duncan				
Type of job	N	Subset for alpha = 0.05		
		1	2	3
Unemployed	75	2.7333		
Private sector	80		3.0375	
Governmental- Private	35		3.2286	3.2286
Governmental (civil employment)	125			3.3680
Sig.		1.000	.066	.179

Means for groups in homogeneous subsets are displayed.

Study the significance of job relation of individuals' subject of study and the education

In the evaluation of author's studies, as it is seen in table 15, it could be observed that the significance level of the three factors of ground, process and output is sig=0, that in all cases, the significance level was approved in 99% level, showing the sample society with different job relations and education had different views on the process, ground and output factors variables for evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs.

Table 16: Unilateral ANOVA evaluation of the opinions of sample society with different job and education relations in evaluating the graduates of Communication majors of Scientific- Applied University in relevant jobs

ANOVA						
Factors		Sum of Squares	df	Mean Square	F	Sig.
Ground	Between Groups	42.512	2	21.256	44.915	.000
	Within Groups	147.656	312	.473		
	Total	190.168	314			
Process	Between Groups	10.537	2	5.268	15.767	.000
	Within Groups	104.250	312	.334		
	Total	114.787	314			
Output	Between Groups	15.785	2	7.892	22.210	.000
	Within Groups	110.869	312	.355		
	Total	126.654	314			

As it could be seen in table 16, and with respect to the variance analysis and Duncan test of individuals with relevant education and job, the employed job whose education and jobs are not related and the unemployed individuals, each, have been classified in different groups and each one had different opinions in connection with the ground factors.

Table 17: Evaluation of difference in views of sample society with different job and education relation in connection with the ground factors in evaluating the graduates of Communication majors of Scientific-Applied University in relevant jobs by using Duncan Test

Ground				
Duncan				
Job relations	N	Subset for alpha = 0.05		
		1	2	3
Unemployed	75	1.8857		
Relevant	125		2.2343	
Irreverent	115			2.8137
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

With respect to the variance analysis and its results with sig=0, there is a significant difference between the opinions of different age groups in connection with the process factors. By considering Duncan Test (table 17), it was shown that employed individuals whose education and jobs are related and employed individuals whose education and jobs were not relevant had similar views on output factors variables in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs, and the unemployed people had different opinions than the two groups; and were were classified in a separate group.

Table 18: Evaluation of the difference of opinions of sample society with different job and education relation in connection with the process factors for evaluating the graduates of Communication majors of Scientific-Applied University in the relevant jobs by using Duncan Test

Process			
Duncan			
Job relations	N	Subset for alpha = 0.05	
		1	2
Unemployed	75	2.6500	
Relevant	125		3.0000
Irreverent	115		3.1250
Sig.		1.000	.127

Means for groups in homogeneous subsets are displayed.

With respect to unilateral ANOVA analysis and its result with sig=0, the Duncan test showed that employed individuals with relevant education and jobs and the employed individuals whose education and jobs are not relevant had similar views on the output factors variables in evaluating the graduates of Communication majors of Scientific-Applied University in the relevant jobs and the unemployed people were classified in a different group.

Table 19: Evaluation of the difference in views of sample society with different job and education relation in connection with output factors in evaluating the graduates of Communication major of Scientific- Applied University in the relevant jobs by using Duncan Test

Output			
Duncan			
Job relations	N	Subset for alpha = 0.05	
		1	2
Unemployed	75	2.7333	
Relevant	125		3.1680
Irreverent	115		3.3130
Sig.		1.000	.086

Means for groups in homogeneous subsets are displayed.

Study the significance of the occupation duration of individuals' subject of study

In assessing the author's studies, as it could be seen in table 4-55, the significance level in the three ground, process and output factors is with sig=0; that, in all cases, the significance level is approved in 99% that shows that the opinions of the sample society with different job duration had different views on the process, ground and output factors variables in evaluation of the graduates of Communication majors of Scientific- Applied University in the relevant jobs.

Table 20: Unilateral ANOVA evaluation of the sample society with the occupation duration in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs

Factors		Sum of Squares	df	Mean Square	F	Sig.
Ground	Between Groups	36.779	5	7.356	14.818	.000
	Within Groups	153.389	309	.496		
	Total	190.168	314			
Process	Between Groups	19.462	5	3.892	12.617	.000
	Within Groups	95.325	309	.308		
	Total	114.787	314			
Output	Between Groups	22.482	5	4.496	13.337	.000
	Within Groups	104.172	309	.337		
	Total	126.654	314			

With respect to the variance analysis and its result with sig=0, significant difference was found between the views of groups with different employment time in connection with the ground factors. According to the results of Duncan test (table 20), groups with less than one year of employment and those with more than 4 years of employment were put in one group and had similar views. Groups with 1 to 2 years of employment time; too, were put in a separate group and showed different views than other groups; and, the 2 to 3 years and 3 to 4 years groups; too, were included in another group; both latter groups; too, had similar views in connection with the ground factors variables.

Table 21: Evaluation of the difference in the views of the sample society with different occupation time period in connection with the ground factors for evaluating the graduates of Communication majors of the Scientific- Applied University in the relevant jobs by using Duncan Test

Ground					
		Duncan			
Duration of occupation	N	Subset for alpha = 0.05			
		1	2	3	4
Unemployed	70	1.8367			
Less than 1 year	45		2.2857		
+ 4 years	120		2.3929	2.3929	
1-2 years	10			2.7143	2.7143
2-3 years	20				2.7857
3-4 years	50				2.8571
Sig.		1.000	.570	.089	.480

Means for groups in homogeneous subsets are displayed.

By considering the unilateral ANOVA analysis and its result with sig=0, the Duncan test showed that groups with 3 to 4 years of employment and those with 2 to 3 years of employment had similar views on process factors, and groups with less than one year occupation; too, were put in one group, the +4 years group in another group and the groups with 1 to 2 years employment duration were put in another group, showing that each one of the groups had different views on the process factors variables.

Table 22: Evaluation of difference in the views of the sample society with different occupation time in connection with the process factors for evaluating the graduates of Communication majors of Scientific- Applied Universities in the relevant jobs by using Duncan test

Process

Duncan

Duration of occupation	N	Subset for alpha = 0.05			
		1	2	3	4
Unemployed	70	2.6071			
Less than 1 year	45	2.8056	2.8056		
+ 4 years	120		3.0156	3.0156	
3-4 years	50			3.2125	
2-3 years	20			3.3125	3.3125
1-2 years	10				3.5625
Sig.		.183	.159	.059	.094

Means for groups in homogeneous subsets are displayed.

By noticing the unilateral ANOVA analysis and its result with sig=0, the Duncan test showed that groups with 3 to 4 years and 2 to 3 years occupation had similar opinions on the output factors; and groups with less than one year occupation were put in one group, the +4 years occupation record is one group and the 1 to 2 years employment duration group; too, were put in another group, showing that each one of those groups had different views on the output factors variables.

Table 23: Evaluation of difference in the views of sample society with different age groups in connection with output factors for evaluating the graduates of Communication majors of Scientific-Applied University in the relevant occupations by using Duncan test

		Output		
		Duncan		
Duration of occupation	N	Subset for alpha = 0.05		
		1	2	3
Unemployed	70	2.6857		
2-3 years	20	3.0000	3.0000	
Less than 1 year	45	3.0000	3.0000	
1-2 years	10		3.1000	3.1000
+ 4 years	120			3.3333
3-4 years	50			3.3600
Sig.		.056	.548	.115

Means for groups in homogeneous subsets are displayed.

Study the significance of the amount of income of individuals' subject of study

In the assessments of the author's studies, as it could be seen in table 24, the significance level in the three factors of ground, process and output with sig=0, which are approved in 99% in all significance cases, it shows that the views of the sample society in different income levels had different opinions on the process, ground and output factors variables in evaluating the graduates of Communication majors at the Scientific- Applied University in the relevant jobs.

Table 24: The Unilateral ANOVA evaluation of the sample society's views with different income groups for in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations

Factors		Sum of Squares	df	Mean Square	F	Sig.
Ground	Between Groups	46.197	5	9.239	19.830	.000
	Within Groups	143.971	309	.466		
	Total	190.168	314			
Process	Between Groups	46.084	5	9.217	41.454	.000
	Within Groups	68.702	309	.222		

	Total	114.787	314			
Output	Between Groups	31.186	5	6.237	20.188	.000
	Within Groups	95.468	309	.309		
	Total	126.654	314			

By considering the variance analysis and its result with sig=0, significant difference was found between the views of groups with different income groups in connection with the ground factors variables. With respect to Duncan test (table 25), the 800 to 1,100 thousand Tumans, 200 to 500 thousand Tumans, 500 to 800 thousand and plus 1,100 Tumans income groups were put in one group and expressed similar opinion. The -200 thousand Tumans income group; too, was put in a separate group. In addition, the unemployed group was put in another group and both latter groups expressed different views than other groups.

Table 25: Evaluating the difference in the views of the sample society with different income groups in connection with the ground factors in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations by using Duncan test

Ground

Duncan

Amount of income	N	Subset for alpha = 0.05		
		1	2	3
Less than 200 thousand Tumans	10	1.1429		
Unemployed	80		1.9018	
+ 1,100 thousand Tumans	50			2.4000
800 to 1100 Thousand Tumans	25			2.5143
200 to 500 thousand Tumans	70			2.5612
500 to 800 thousand Tumans	80			2.7321
Sig.		1.000	1.000	.086

Means for groups in homogeneous subsets are displayed.

By considering the unilateral ANOVA analysis and its result with sig=0, Duncan test showed that the 800 to 1,100 thousand Tumans, 200 to 500 thousand Tumans, 500 to 800 thousand Tumans and plus 1,100 thousand Tumans income groups were put in one group and showed similar views in connection with the process factors variables. The less than 200 thousand Tumans income group was also placed in a separate group and the unemployed group was also put in another group; both latter groups showed different opinions than other groups.

Table 26: Evaluation of difference in the views of the sample society with different income groups in connection with process factors in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations by using Duncan test

Process

Duncan

Amount of income	N	Subset for alpha = 0.05		
		1	2	3
Less than 200 thousand Tumans	10	1.1875		
Unemployed	80		2.6797	
+ 1,100 thousand Tumans	25			3.0500
800 to 1100 Thousand Tumans	50			3.1000
200 to 500 thousand Tumans	70			3.1071
500 to 800 thousand Tumans	80			3.2266
Sig.		1.000	1.000	.189

Means for groups in homogeneous subsets are displayed.

With respect to unilateral ANOVA analysis and its result, Duncan test showed that less than 200 thousand income group and the unemployed group had similar views on the output factor. The 500 to 800 thousand Tumans income group; too, was put in another group and the 200 to 500 thousand Tumans, 800 to 1,100 Tumans and plus 1,100 thousand Tumans income groups; too, showed similar views in connection with output factors variables.

Table 27: Evaluation of difference in views of the sample society with different income groups in connection with output factors in evaluating the graduates of Communication majors of Scientific-Applied University in the relevant occupations by using Duncan test

		Output		
		Duncan		
Amount of income	N	Subset for alpha = 0.05		
		1	2	3
Less than 200 thousand Tumans	10	2.6000		
Unemployed	80	2.8000	2.8000	
+ 1,100 thousand Tumans	25		3.0000	
800 to 1100 Thousand Tumans	50		3.0200	
200 to 500 thousand Tumans	70		3.1000	
500 to 800 thousand Tumans	80			3.6125
Sig.		.164	.055	1.000

Means for groups in homogeneous subsets are displayed.

The regression study of the input factors in the ground, process and output factors

Regression method is used for advanced analysis and predicting changes in the dependent variables in case of changes in the independent variables. Regression in ENTER method is an approach in which, all independent variables are put into analysis work at the same time and the effects of all independent variables on the dependent variables are studied.

Study the input factor in the ground factor

The first table shows the method which is employed and the independent and dependent variables used in regression analysis. As the table number 28 shows, the input factors are independent variables and the ground factors are the dependent variables.

Table 28: Independent and dependent variables employed in regression analysis

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ground

In table 29, the value of R square is shown which is equal to 0.344. As mentioned in advance, in this method, all variables into the equation simultaneously. Thus, the amount of R square which is obtained shows that almost 34% of changes in the dependent variables relate to input factors. Of course, the problem in this coefficient is that it does not include the degree of freedom. For this reason, to solve the problem, usually the adjusted R-square coefficient is used. The amount of this coefficient is 0.325. Of course, in multiple regression as the number of independent variables become less, the R2 determined coefficient with the adjusted coefficient (R2 Ad) is less. In Addition, in this table, the correlation coefficient is shown by R and is equal to 0.587. This coefficient shows the intensity between the relationship between the dependent variable and independent variables, the value of which always ranges between 0 and +1.

Table 29: Amount of R square determined for the categories subject of evaluation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587[a]	.344	.325	.63939

a. Predictors: (Constant): Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

Table 30 shows the significance of the regression and linear relationship among variables. The significance level of the regression is calculated by F which shows significance in 99 percent level (sig=000). This means that there is a significant relationship between the input factors and the ground factors.

Table 30: The significance level of the amount of variables in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations by using Duncan test

ANOVA[b]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1	65.478	9	7.275	17.796	.000[a]

a. Predictors: (Constant) : Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

b. Dependent Variable: **ground**

Table 31 has calculated the value of Beta. The goal of author in exercising this model was to know the importance and value of the independent variables to be used in judging the relative importance of variables. The magnitude of the amount of Beta shows the relative importance and the role of this variable in predicting the dependent variable. Therefore, in this context, the Beta situation could be analyzed that, the job and education relation of the respondents had highest amount of importance and effectiveness in evaluating the dependent variable (ground), as the amount of the coefficient shows that 74.4% of changes in dependent variable (ground) is due to the relationship between job and education of the sample society, coming after is the job status with 30.7 percent effectiveness, age, with 11.4 percent effectiveness and gender with 10.3 percent effectiveness on the dependent variable (ground factors). Other social- economic variables had no effects on the process of increase and/or decrease in the degree of participation.

Table 31: The value of calculated Beta and the importance of each input factor variable in evaluating the amount of the ground factor in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations by using Duncan test

Coefficients[a]

	Model	Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.595	.696		2.291	.023
	Gender	.164	.075	.103	2.179	.030
	Marital status	-.328	.104	-.208	-3.145	.002
	Age	.101	.053	.114	1.927	.055
	Education	-.141	.084	-.086	-1.672	.096
	Job status	.560	.255	.307	2.195	.029
	Type of occupation	-.407	.066	-.625	-6.155	.000
	Job relations	.740	.089	.744	8.301	.000
	Duration of employment	-.046	.039	-.097	-1.191	.235
	Amount of income	-.050	.035	-.129	-1.440	.151

a. Dependent Variable: **Ground**

Study the input factor in the process factor

The first table shows the method which was used and the independent and dependent variables which were employed in regression analysis. As the table 33 shows, the input factors are the independent variables and the process factors are the dependent variable.

Table 32: Independent and dependent variables employed in regression analysis

Variables Entered/Removed[b]			
Model	Variables Entered	Variables Removed	Method
1	Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income	.	Enter

a. All requested variables entered.

b. Dependent Variable: **process**

Table 33 shows the amount of R square which is equal to 0.164. As it has been said before, in this method, all variables are included in the equation at the same time. Therefore, the R square value which has been already obtained shows that almost 16% of dependent changes are due to the input factors. Of course, the problem in this coefficient is that it does not include the number of freedom degrees and for this purpose, to solve the problem, usually the adjusted R-square coefficient is used, the amount of which, in this model, is 0.140. Of course, in the multiple regressions, as the number of independent variables is less, the determined coefficient (R2) with the adjusted determined coefficient (R2 Ad) becomes less. In addition, in this table, the correlation coefficient which is shown by R is equal to 0.405. This coefficient shows the intensity of relationship between the dependent variable and the independent variable, the value of which is always between 0 and +1.

Table 33: The value of R square determined for the categories subject of evaluation
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.405[a]	.164	.140	.56084

a. Predictors: (Constant): Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

Table 34 shows the significance of regression and linear relation among the variables. The significance level of regression is calculated by F that shows significance in 99 percent level (sig=000). This means there is significant relation between the amount of input factors and the process factors.

Table 34: The significance level of amount of variables in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant occupations by using Duncan test

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1	18.853	9	2.095	6.660	.000^a

a. **Predictors: (Constant).** Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

b. Dependent Variable: **process**

In table 35, the amount of Beta has been calculated. The goal of the author in using this model is to show the importance and role of independent variables. Therefore, by this model, the relative importance of variables could be judged. The magnitude of the value of Beta shows the relative importance and the role of this variable in predicting the dependent variable. Therefore; in this notion, the situation of Bet could be analyzed that the job status of the respondents has highest amount of importance and effects on evaluating the dependent variable (process); for, the amount of coefficient shows that 40% of the changes in dependent variable (process) is due to the job status of the sample society, followed by income with 22.7 percent effectiveness, age, with 9.9 percent, relationship between job and education, with 9.7 percent effectiveness and at the end, the education with 0.7 percent effects on dependent variable (process factors). Other social-economic variables had no effects on the process of increase and/or decrease in participation.

Table 35: The amount of the calculated Beta and the amount of importance of each input factor variable in assessing the amount of process factor for evaluating the graduates of Communication majors of Scientific- Applied University in relevant jobs

Coefficients[a]

Model		Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.268	.611		3.715	.000
	Gender	-.157	.066	-.127	-2.374	.018
	Marital status	-.253	.092	-.206	-2.757	.006
	Age	.068	.046	.099	1.483	.139
	Education	.009	.074	.007	.117	.907
	Job status	.572	.224	.403	2.553	.011
	Type of job	-.117	.058	-.232	-2.026	.044
	Occupation relations	.075	.078	.097	.960	.338
	Duration of employment	-.008	.034	-.021	-.227	.820
	Income	.068	.031	.227	2.241	.026

a. Dependent Variable: **process**

Study the input factors in output factor

In the first table, the method which was used and the independent and dependent variables are shown in the regression analysis. As it could be seen in table 37, the input factors are the independent variables and the output factors are the dependent variable.

Table 36: Independent and dependent variables used in regression analysis

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Gender, marital status, age, education, job situation, type of occupation, job relation, duration of employment/occupation, amount of income		Enter

a. All requested variables entered.

b. Dependent Variable: **output**

Table 37 shows the amount of R square which is equal to 0.226. As mentioned before, in this method, all variables enter into the equation simultaneously; therefore, the amount of R square which is obtained shows that almost 26% of dependent changes relate to the input factors. Of course, the problem in this coefficient is that it does not include the freedom degree. For this purpose, to remove this problem, usually the adjusted coefficient (adjusted R- square) is used. The amount of this coefficient is 0.203. Of course, in the multiple regression, as the number of independent variables is less, the determined coefficient (R2) could be less with the adjusted coefficient (R2 Ad). In addition, in this table, the correlation coefficient is shown with sign R and is equal to 0.475. This coefficient shows the intensity of the relation between the dependent variable and the independent variables, the amount of which is constantly between 0 and +1.

Table 37: Amount of R square defined for the categories subject of evaluation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.475[a]	.226	.203	.56710

a. Predictors: (Constant): Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

Source: Studies of the author, Winter 2014

Table 38 shows the significance of regression and the linear relations between the variables. The significance level of the regression is calculated by F which is significant in 99 percents level (sig=000). It means that there is a significant relation between the amount of input and output factors.

Table 38: The significance level of the amount of variables in evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs

ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	28.566	9	3.174	9.869	.000[a]

a. Predictors: (Constant): Gender, marital status, age, education, job status, type of job, type of occupation, job relations, duration of employment, amount of income

b. Dependent Variable: **output**

In table 39, the amount of Beta is calculated. The goal of the author in developing and using this model was to achieve the importance and role of independent variables. Therefore, it could be used to judge on the relative importance of variables. The magnitude of the amount of beta shows the relative importance and the role of that variable in predicting the dependent variable. Therefore, here, the Beta situation could be analyzed in the sense that the job status of respondents had highest importance and effectiveness on evaluating the dependent variable (output), for the amount of coefficient shows that 20.8% of changes in dependent variable (output) is due to the amount of job status of the sample society. After that, the relationship of job and education with 14.9 percent effectiveness, age, with 12.9 percent, education with 11 percent effectiveness, occupation time with 10 percent effectiveness and at the end, marital status with 5 percent effectiveness on the dependent variable (output factors) were effective. Other social-economic variables had no effects on the increase or decrease of participation.

Table 39: The calculated amount of Beta and the degree of importance of each output factor variable in evaluating the amount of output factors for evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs

Coefficients[a]

Model		Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.344	.617		3.796	.000
	Gender	-.229	.067	-.177	-3.435	.001
	Marital status	.068	.093	.053	.731	.466
	Age	.093	.047	.129	1.996	.047
	Education	.148	.075	.110	1.977	.049
	Job status	.310	.226	.208	1.371	.171
	Type of job	-.067	.059	-.127	-1.148	.252
	Job relation	.121	.079	.149	1.526	.128
	Occupation time	.039	.034	.100	1.139	.256
	Amount of income	-.065	.031	-.205	-2.104	.036

a. Dependent Variable: **output**

Study correlation between input, ground, process and output factors

In most social and human studies, the researcher usually deals with two or more variables and sought studying the relationship between them. In analyzing this type of relations, the connection between variables is being considered. Pierson Correlation coefficient is one of the suitable tools in analyzing the variables which were used in this research as well. Pierson correlation coefficient is one of the highly applied methods in determining the amount of relations between the two variables ad is shown with mark "r". This coefficient is used for studying the relationship between the two intervals and/or nominal variables and its amount always fluctuates between +1 and -1. If the amount which is obtained is positive, it means that the changes in both variables occur in same direction. In another word, with any increase in the amount of one variable, the amount of the other variable increases and vise versa. However, if the amount of "r" is negative, it shows that

the two variables move in opposite directions; that is, by increase in the amount of a variable, the amount of the other variable decreases and vise-versa. If the amount which is obtained for the correlation coefficient is zero, it means there is no relation between the two variables. If the value of "r" is precisely equal to +1, it reveals full positive correlation and if it is equal to -1, it shows full negative correlation between the two variables. Table 41 shows the correlation between the input, ground, process and output factors.

Conclusion

The first hypothesis of this research indicates that, it seems graduates of Communication major have suitable level of science and job status. In this hypothesis, the goal is to achieve a general mean of scientific and job status of the graduates of Communication major of Scientific- Applied University in Tehran City. Based on the results obtained from the questionnaire, the ground factor with 2.3628 means is in a lower than average level (with respect to the five-scale "Likert" Spectrum) and the process factor with 2.9623 mean is lower than average. However, the output factors with 3.1175 mean have been evaluated as to be higher than average and are in a relatively suitable level. In connection with the input factors variable that help to the answer of this hypothesis, 76% of the individuals of the sample society are employed, 39.7 percent of graduates with employment stated that their jobs and education are related, 38.1 percent of individuals have been employed more than four years. With respect to the results which were obtained, the first hypothesis is approved.

The second hypothesis of this research indicates that it seems there is significant relation between the ground, process and output factors and the input factors. To specify the significance between the factors, the T and F tests are used. In variables which were two groups, by using the T test, the significance was studied. In variables which consisted of two groups, the T test was used to study the significance and the F test was employed for variables that were more than two groups. The results of these tests show that in studying the significance of the gender status and the ground factors, the two groups did not have different views and the equality of the means of the two groups was approved. In connection with the output factors, the two groups expressed different opinions and the inequality of the means was approved. In connection with the process factors; too, the inequality of the mean of the two groups. As a result, individuals expressed different views in the two output and process factors. In studying the significance of marital status and the ground factors, the assumption of equality of the means of the two single and married groups was approved and both groups showed same opinions. In connection with the output and marital status factors, the inequality of the means was approved and in connection with the process and marital status factors; too, the assumption of equality of the means of the opinions of the two single and married groups was approved. As a result, in this case, it was only in the output factor that individuals showed different opinions.

In studying the significance of the job status and the ground, process and output factors, the inequality of means in the three factors was approved, and it was specified that the

opinions of individuals in those factors do not have significant differences. In studying the significance of education and ground factors, the inequality of the means of the two groups was approved and it was specified that individuals had different opinions in connection with this factor. However, in connection with the process and output factors, the equality of the means of the groups was approved. In studying the significance of age groups and the process, output and ground factors in the three factors, with respect to the variance analysis, the significance between the means of the groups was approved and for studying the significant difference between the groups, the Duncan test was used. The results from this test specified that in the ground factors, the 40-50 years, 16-20 years and 20-30 years age groups were classified in one group. It means that the views of those age groups in connection with the ground factors for evaluating the graduates of Communication major of Scientific- Applied University in relevant jobs were similar and had no significant difference. The Duncan test classified the 30-40 years age group in one separate group and the +50 years age group; too, was classified in one group and both groups had unique views on the ground factors. In the 16-29 years, 20-30 years and 40-50 years age groups are placed in one group and showed similar opinions. The 30-40 years age group, too, were placed in one group and the +50 years age group were put in another group; both groups had different opinions from other groups. In the output factors, the 16-20 years, 20-30 years and 40-50 years age groups had similar opinions on the output factors and the 30-40 years age group was put in one group and +50 years was put in another group, showing that each one of those age groups had different opinions on the output factors variables. In evaluating the significance of the type of occupation, the significance level in the three ground, process and output factors is sig=0 that in all cases, the significance was approved in 99% percent, showing that individuals with different job groups had different opinions on process, ground and output factors variables for evaluating the graduates of Communication majors of Scientific- Applied University in relevant jobs. In connection with the ground factors, the governmental (civil servants) and private sector job groups were classified in one group; that is, the opinions of these job groups in connection with the ground factors in evaluating the graduates of Communication majors of Scientific- Applied University in relevant jobs were similar with no significant difference. The Duncan test classified the governmental- private job group in one separate group and the unemployed group in another group and both groups had unique opinions on the ground factors. In connection with the process factors, the governmental job and private sector job groups were classified in one group with the sense that the opinions of those job groups in connection with the process factors for evaluating the graduates of Communication fields of Scientific- Applied University in relevant jobs were similar with no significant differences. Duncan test classified the governmental- private job groups in one separate group and the unemployed group in another group and both groups had unique opinions on the ground factors. Duncan test in connection with output factors specified that the governmental job and private job groups have been classified in one group. It means that the views of those job groups in connection with the output factors for evaluating the graduates of Communication major of Scientific-

Applied University in relevant jobs were similar with no significant difference. Duncan test classified the governmental- private job group in one separate group and the unemployed group in another group and both groups had unique opinions on the ground factors.

In studying the significance of job relation of individuals' subject of study with their education, the significance was approved in 99 percent level in all three factors. With respect to the variance analysis and Duncan test of individuals with relevant education and job, the employed persons whose education and jobs are not related, and the unemployed individuals are each classified in a separate group and each expressed different views in connection with the ground factors. In connection with the process factors, individuals with employment whose education and jobs were related and employees whose education and jobs were not related showed similar opinions on the process factors variables for evaluating the graduates of Communication majors of Scientific- Applied University in the relevant jobs and the unemployed individuals showed different opinions than the two groups and were classified in a separate group. In connection of the output factors, Duncan test showed that employees whose education and job are related and employees whose education and job were not related had same views on the output factors variables for evaluating the graduates of the Communication majors of Scientific- Applied University in the relevant jobs and the unemployed individuals were classified in a separate group.

In studying the significance of the occupation duration, the significance level in the three factors was approved and in this connection, in addressing the ground factor by using Duncan test, it was shown that subject groups with less than one year employment and plus four years of employment were put in same group and had similar views. The group with 1 to 2 years employment/occupation duration was also in a separate group and their opinions differed from those of other groups. The 2 to 3 years and 3 to 4 years (occupation duration) were put in another group and both group; too, showed different views on the process factors variables. In connection with output factors, groups with 3 to 4 years of occupation records and 2 to 3 years of occupation/employment records had similar views on the output factors; and, the group with less than one year occupation was put in one group, the plus four years of employment group and 1 to 2 years occupation period group were in another group that showed each one of those groups had different views on output factors variables.

In studying the significance of the amount of income in the subjects of study, the significance level in the three factors was confirmed in 99 percent level. By adopting Duncan test in the ground factors, the income groups of 800 to 1,100 thousand Tumans, 200 to 500 thousand Tumans, 500 to 800 thousand Tumans and plus 1,100 thousand Tumans income were put in one group and showed similar opinions. The less than 200 thousand Tumans income group; too, was put in a separate group and the unemployed group was in put in another group; both latter groups showed different views than other groups. In addition, the Duncan test specified that the 800 to 1,100 thousand Tumans income group, the 200 to 500 thousand income group, 500 to 800 thousand Tumans group and 1,100 Thousand Tumans income group were put in one group and showed

similar opinions in relation with the process factor variables. The less than 200 thousand Tumans income group and the unemployed group were put in two separate groups and both recent groups showed different opinions than other groups. In relations with the output factors, the less than 200 thousand Tumans income and unemployed groups had similar opinions on output factor. The 500 to 800 thousand Tumans income group was put in another group, and 200 to 500 thousand Tumans, 800 to 1,100 thousand Tumans and plus 1,100 thousand Tumans income group also showed similar views in connection with the output factors. With respect to the acquired results, the second hypothesis is confirmed.

The third hypothesis of this research indicates that there seems to be difference in the importance of input factor indexes and their effects in the factors of process, ground and the output. To respond to this hypothesis, the regression analysis in Inter method was used- it is a method in which, all independent variables are put into analysis simultaneously and the effects of the entire independent variables on dependent variables are studied.

By studying the input factor in the ground factor, one may say that the input factors is the input factor in the dependent variable ground factor , and ground factors is the dependent variable. The R square value is 0.344. The R square which is obtained shows that almost 34% of changes in the dependent variable is related to the input factors. If course, the problem in this coefficient is that it does not include the degree of freedom. For this purpose, usually the adjusted determined coefficient is used to address this problem. The amount of this coefficient is 0.325. Of course, in multi-number regression, as the number of independent variables is less, the determination coefficient (R2) with adjusted determined coefficient (Rd Ad) becomes less. In addition, in this table, the correlation coefficient which is usually shown by R is 0.587. This coefficient shows the intensity of the relation between dependent variable and the independent variables the value of which always ranges between) and +1. The significance level of regression which is calculated by F is significant in 99 percent level (sig=000). This means significant relation between the amount of input factors and the ground. In addition, the value of Beta was calculated. The author's goal in exercising this model was to achieve the importance and role of independent variables. Therefore, it could be used to judge on the relative importance of variables. The magnitude of the value of Beta shows the relative importance and the role of that variable in predicting the dependent variable. Thus, in this point, the situation of Beta could be analyzed as the relationship between job and education of the respondents had the highest effects and importance in evaluating the dependent variable (ground); for, the amount of coefficient shows that 74.4% changes of dependent variable (ground) were due to the amount of relationship between job and education of the sample society. After that, the job situation with 30.7 percent effectiveness, age with 11.4 percent and gender, with 10.3 percent was effective on dependent variable (ground factors). Other socio-economic variables had no effects on the process of increase or decrease in participation.

By studying the output factors in the process factor, it could be said that the output factors are the independent variables and process factors are dependent variables. The R

Square amount is equal to 0.164. The R square which is obtained shows that almost 16% of the affiliated changes are related to the input factors. The amount of adjusted determined value is 0.140.

The correlation factor is shown with R and is equal to 0.405. This coefficient shows the intensity of the relationship between the dependent variable and the independent variables, the value of which ranges between 0 and +1. The significance level of regression which is calculated by F is significant in 99 percent level (sig=000). It means that there is a significant relationship between the amount of output and process factors. In connection with Beta situation, it could be analyzed that the job situation of the respondents had highest importance and effects on the evaluation of dependent variable (process); for, the amount of coefficient shows that 40% of the changes in dependent variable (process) depends on the amount of job situation of the sample society. Following it, there is income with 22.7 percent effects, age with 9.9 percent and the relationship of job and education with 9.7 percent effect and at the end, education program with 0.7 percent effect were effective on dependent variable (process factors). Other social-economic variables have no effects on the process of increase or decrease of participation.

By studying the input factor in the output factor, one may say that the dependent variables are the input factors and the dependent variables are the output factors. The R Square amount is equal to 0.226. The R square which is obtained show that almost 26% of dependent variable relate to the input factors. Of course, the problem in this coefficient is that it does not include the number of freedom degree. For this reason, to remove this problem, usually the adjusted determined coefficient is used. The amount of this coefficient is 0.203. The correlation coefficient which is shown by "R" is equal to 0.45. This coefficient shows the intensity of the relationship between dependent variable and the independent variable, the amount of which always range between 0 and +1. The significance level of regression is calculated by F, which is significant in 99 percent level (sig=000). It means there is significant relation between the amount of input and output factors. The Beta value shows that the job status of respondents had the highest amount of importance and effectiveness on evaluating the dependent variable (output), for, the amount of the coefficient shows that 20.8% of changes in dependent variables (output) depends on the job status of the sample society, followed by 14.9 percent effectiveness of the relationship of job and education, 12.9 percent age, 11 percent effectiveness of education program, 10 percent for occupation duration and at the end, marriage with 5 percent effect on dependent variable (output factor). Other socio-economic variables had no effects on the process of increase and/or decrease in participation. With respect to the results, the third hypothesis is approved.

The fourth hypothesis of this research shows that it seems there is correlation between inputs, ground, process and output factors. Based on the results of the research, there are positive correlation between the grounds factors and the input factors consisting gender, age, marriage, and job situation and there are negative correlation between the ground factors and the input factors including education program, type of job, job relation, the time of occupation and income. There is positive correlation between the factors of

ground and the process and output process. To explain correlation between input factors and process factors, one must note that there is positive correlation between the process, marriage, and age and job situation factors and there is negative correlation between gender, education, type of job, job relations, duration of job, income and process factors. It should be mentioned that there is positive correlation between the process and output and grounds factors. There is positive correlation between the output factors and input factors such as age, marriage, education program and job situation; and, there is negative correlation between gender, job method, job relations, duration of occupation, income and output factors; and as mentioned before, there is positive correlation between the process, ground and output factors, With respect to the results that are obtained, the fourth hypothesis is approved.

References

1. Akhlaghi, Faezeh Yarmohammadian Mohammad Hossein, Khoshgam, Masoumeh, Mohebbi, Nousin, Evaluation of the Quality of Educational Programs in Higher Education by using CIPP Model, December and Jan. 2011-2012, Management of Health Information, 8th Vol. No. 5.

2. Asgari Masoud, Rostami Habib, ACECR and its Role in Management of Scientific- Applied Education, 1994, International Seminar on Scientific- Applied Education

3. Talebi, Fazlollah, Continuity and Development of Scientific- Applied Education Required in Strategic Management, 1999, Second Congress on the Study and Analysis of Scientific- Applied Education

4. Rouhani, Hossein, Scientific- Applied Education, an Approach in Optimization of Higher Education in the Country, 1998, First Conference on Optimization and its Application

5. Jahanshiri, Nassrin, Soltani Ali, Scientific- Applied Education and its Role in Teaching Efficient Human Forces, 1998, the First International Congress and the 4th National Congress on Government Cooperation

6. Shahpasand, Mohammadreza, Bagheri Asghar, Study the Effects of Scientific- Applied Education in Occupation Empowerment of Employees of Ministry of Jihad-e-Agriculture, 2011, Journal of Economic Researches and Development of Agriculture in Iran, 2nd Period, Vol. 1

7. Shariati, Mohammadtaghi, Mohajer Alireza, Study the Curriculum and Planning Skills in Scientific- Applied Education, 2006, Jihad, 6th Course, No. 274

8. Masoudi Nadoushan, Esmat, Application of Multi-criteria Decision Making Methods in Prioritization of Scientific- Applied Education Development with Emphasis on Educational Opportunities Equality, 2004, Management of Tomorrow, 2nd Year, Vols. 5 and 6

9. Leyss, Nader, Chizari Mohammad, Rezvanfar, Ahmad Abbasi, Enatyatollah, Study the Amount of Acquiring and Developing Job Skills of Students of Scientific- Applied Students of Agriculture, West Azarbaijan Province, 2012, Economy and Agricultural Development, 26th Year, No. 2.

10. Rezaei, Mohammad, Pasha Nourollah, Evaluation of Performance of Higher Education System, Case Study, Institute of Scientific- Applied Education (semester and annual) in Tehran city, 2008, Iran Higher Education, 1st Vol. No. 1

11. Mousapour, Nematollah, Theoretical Fundamentals of Educational Evaluation Models, 2002, Research and Planning in Higher Education, No. 23 and 24.

12. Farokhzad, Mohammad Hassan, Scientific and Philosophical Basis of Scientific- Applied Education, 2008, Jihad, Vols. 226 & 227.

13. Mahdavi Shahri, Naser, Khalili Mitra, Conference on Entrepreneurship and Advanced Technologies, 2013

14. Scientific, Applied Higher Education Institute on Skills, Introducing Scientific- Applied Education on Skills, 2012, State Technical and Vocational Education Organization

15. Masoumian, Ali, Seyf Seyed Reza, Educational Criteria and Regulations in Higher Education of Skills and Technology, 2012, 1st Ed. Tehran, Scientific- Applied University

16. Khorshidi, Abbas, Malekshahi Rad, Mohammadreza, Educational Evaluation, 2006, 1st Ed. Tehran, Yastarun

17. Sedighi Arfaei, Fariborz, Shekar Riz Javad, Ghaderi Heydar, Educational Evaluation, 2012, 1st Ed. Tehran, Sokhanvaran

18. Mansour Bassiri, Mahmoud, Philosophy Fundamentals of Educational Evaluation Models, 2004, 1st Ed. Tehran, Scientific- Applied Higher Education Institute

19. Collection of Laws, Regulations and Instructions on Scientific- Applied Education, 2002, Center of Human Resources Planning and Education, Ministry of Culture and Islamic Guidance

20. Ahmadi, Majid, Evaluation of the Public Management Education Center of Tehran on SIP Model, 2000, Thesis of M.A. in University of Tehran

21. Brinkerhoff, Robert, Evaluation of Educational Plan, 2002, translated Yadollah Mehralizadeh, Tehran, Jelveh Publication

22. Bazargan, Abbas, Quality and its Evaluation in Higher Education: A Review on National and International Experiences, Collection of Papers, the First Seminar of Higher Education in Iran, 1988, 1st Ed. Tehran, Allameh Tabatabaei University

23. Bulla. H.S. Evaluation of Educational Plans and Programs for Development, 1996, translated by Khodayar Abili, 1st Ed. Tehran, International Institute of Adults Education Methods

24. Bulla. H.S. Educational Evaluation and its Application in Literacy, Tabei, 1983, translated by Abbas Bazargan, 1st Ed. Tehran University Press

25. Tyler, Ralph, Essential Principles of Educational Curriculum, 1972, translated by Ebrahim Kazemi, 1st Ed. Tehran, Curriculum Planning Research Center.

26. Dubois, Pierre, Improving the evaluation of the education–employment relationship in France,2008, Portland Press Ltd

27. Arthur, Lore , Little, Brenda, exploring graduates' views on the relationship between higher education and employment,2010, the open university

28. HARVEY, LEE, THE RELATIONSHIP BETWEEN HIGHER EDUCATION AND EMPLOYMENT, 2000, Tertiary Education and Management

29. SHERWYN, P, MORREALE, MICHAEL, M, OSBORN, JUDY C, PEARSON, Why Communication is Important: A Rationale for the Centrality of the Study of Communication, 2000, Journal of the Association for Communication Administration