



# EFFECTS OF TRAINING WORKSHOPS ON WORKER MOTIVATIONS AND PRODUCTIVITY BY ACADEMICS – A CASE OF AN INDUSTRIAL PLANT

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## **Abstract**

*The purpose is to examine the effect of “motivation” which plays an important role in institutions of Labor force productivity in an industrial entity. It is also aimed at providing a contribution to recent studies by examining its effects on productivity as well as knowledge and skill gain due to periodical training seminars and those on expectations and behaviors of employees. Important targets of such training include personal development and increase in labor force productivity. In this sense, the study examined the productivity aspect of training seminars in an integral frame (motivation, wage, social relations, training, and communication) and whether such aspects exhibit differences in terms of gender, marital status, educational status, department, job title, and age. This study in which contribution of training seminars provided in the entity on the development of personal behavior was conducted with the participation of a study group of 186 persons with various job titles. Effect of training seminars provided by Adiyaman University members on labor force effectiveness and development of personal behavior and factors affecting such process have been examined. A scale composed of 58 questions has been developed for the motivation and productivity fields, and determination of employee’s expectations and opinions. The industrial entity which is engaged in manufacturing activities employs 400 persons. According to SPSS during processing the questionnaires. The questionnaire form was composed of two parts which are: The demographical structure of the employees was classified according to opinions and expectations of the employees about wage, motivation, social relations, training, and productivity.*

**Keywords:** Labor productivity, Motivation, Training Seminars.

## **1 INTRODUCTION**

One of the most significant strategic sources of each institution is its own personnel. In our time in which technology is rapidly developing and changing, personnel training are an essentially crucial need. Competitive capability of an entity

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and conformity of environmental factors are the derivatives of various variables including personnel qualification. Personnel, which is one of the sources creating long-term competition advantages has a strategic position, has significant position in the productivity management system. According to the Western specialists, innovations regarding improving knowledge, skill and potential of the company personnel have prioritized significance in improving product quality, production technology and organization when compared with the innovations. Therefore, investments made for personnel are the most reliable investments. Education and improvement of the personnel is an influential reaction the company needs to give to the changes and summons in the market. Therefore, increasingly more companies consider the personal development as a prioritized solution in strengthening investment policy and competition advantages. In addition to this, it has a reverse side. Personnel training are a costly work. As for its results, they occur in long time. Each administrator understands the significance of training its own personnel, wants to be sure that investments made in this field will be dramatically beneficial and wants the costs in minimum or on the adequate level. Improvement of the human resources means a change basing upon the strategic purposes of the company. This versatile process is an interrelated actions system covering such factors as strategic development, estimation of personnel need, planning, career and professional growth, organization of adaptation process, constitution of corporate culture. Productivity of this depends on to what extent humans take the experience and contemporary approaches having developed for many centuries into consideration. Educating human, children and adults is all the time old as the world and at the same time actual. As humans couldn't find excellent educational system till now, research in this field are continuing actively. Solution of this problem concerns such many scientific fields as business administration, pedagogy, psychology. Despite all accumulated scientific and practical experience in examined field, each company obliges the personnel to solve their problems on their own as there are different characteristics all the time. Because it is impossible to render the system productivity when these factors are not taken into consideration. The purpose of this

research is to establish personnel education system as a condition of increasing the institution productivity for the industrial enterprise.

Targets to achieve this purpose were listed below:

- Theoretical analysis of the sources on productivity and motivation.
- Preparation of the education program for the personnel of the industrial company
- Carrying out education and analysis of the results

Analysis of the research, theoretical analysis, and systemization of the information acquired regarding personnel training, development of the training programs, and analysis of the results to research augment of the personnel knowledge level.

## 2 DEFINITION OF PRODUCTIVITY

The concept of productivity, which is as old as the history of humanity and which has been continuing to exist as of the days which people began to produce to maintain their lives (Tokta, 2002), is closely related with the producing person, production type, produced product and use of the produced things. It is one of the factors that today's entities should take into consideration in order to be superior in competition. With its basic meaning, productivity is the proportion of the inputs to outputs and skill of transforming the input to the output (Sonmez, 2002).

Social and economic development means creating a better future for people. As a propelling power of the economic growth, final target of the productivity increase is to increase the quality of human life. In the past, countries, and people struggled for an access to more basic factors. For the sake of a better life quality, powerful ones exploited the weak ones. However, the contemporary world doesn't let the transferal of added value through exploitation. The only way of surviving today and in the future is to be more innovative and productivity (Prokopenko, 2004).

Performance is the measurement of the productivity with its basic meaning. If this measurement is carried out within the institution for the personnel, Institutional Performance bears the purpose of evaluating the personnel productivity and it presents benefits in measuring

the productivity of the personnel policy of the entities (Filiz, 2008).

Limit of the productivity level of an organization can be determined according to the relativist long-term decisions and it can be also determined by the effective consumption of the currently used sources. First can be exemplified as follows; settlement of the facilities, selection, and design of the products, selection of the most appropriate technology etc. Effectual source use can be exemplified as follows; optimum use of the machine, equipment and facilities, the transformation of raw materials into the products appropriate for quality and other parameters in a productivity way, economic use of the sources, training and motivating the personnel to achieve the targets of the entity and etc. Both external and internal factors influence the productivity of the entity. Dynamic and important ones of these determinants are mentally positive attitude, mutual trust between persons and belief, motivation, success-oriented manner, cultural values, feeling pride for the conducted work, benefiting from all relevant field, reasonable application of science and technology, specialized techniques and approaches, teaching and learning, conventional wisdom, effective payment, productivity working atmosphere, effective communication, legislation, organization climate fostering cooperation, authorization (Ramsay, 1995).

Method of total productivity tries to focus on such sources as human, equipment, and money, etc., which are used per one output unit and annihilate the repetitive actions. Method of total productivity is comprised of following steps: Recognizing, information collection, planning, activity, watching (Efil, 2010).

Labor force productivity became a very significant measurement tool thanks to managers of the entities and syndicates. Especially in the sectors in which productivity is taken as a base for the worker wages in the collective bargaining systems. High productivity in labor force increases the productivity of other factors. Therefore, total factor productivity will be higher. In this situation, it emerges as a productivity influencing the productivity results of labor force productivity, in the quality of being a "locomotive" (Ugur, 2013).

With the increase in the productivity in a country, productivity increases in the entities, this leads to

the increase of national income. In today's world, the contribution of human sources to the productivity, which is a flexible factor, is more than the other sources. There is no limitation for techniques of increasing productivity or human resources. The continual increase in this contribution is of great concern.

Productivity plays a significant role in increasing the welfare in a country. It is not possible to point to a human or entity who doesn't benefit from the increase in productivity in today's world. Productivity increases in the entities resulted from the increase in the effectuality and quality of the labor force. Therefore, it is acknowledged as the only source of productivity, real economic development, social improvement and increase in the quality of life in the world, in today's society.

Report of Singapore National Productivity Institution that was conducted in 1984 puts forward the fact that more than half of the increase in the gross domestic product per one person in Singapore in 1966-1983 resulted from the increase in the effort productivity.

According to this information, as it was proved with 4 folds of increase within the last 17 years, a basic factor in the increase of life quality in Singapore was the increase in the effort. (Tokyo, Asian Productivity Organization, 1985).

## 2.1 Productivity and Education

There is a linear correlation between the development level of individuals or societies and goods and services manufactured by them. Countries with high economic productivity and which provide its nationals with quality life are also effective in education in labor force education. What reveals productivity behavior is a combination of the attitude of individuals their knowledge and skills and opportunities. "The productivity culture" which will be revealed jointly by knowledge and skills provided by education and training through a positive values system of individuals and society enables generation of new ideas, free development and creativeness of people. The productivity culture includes and supports life-long continuing education (Duzenli, 1996).

Factors affecting productivity in entities include the special position of a human. Today, human resources dictate that the most valuable resource

of an entity was the persons employed by that entity. Productivity development studies shall firstly take a human into consideration. Success or failure of an entity's employees is related to their qualifications such as skills, abilities, and productivity. What forms the quality is the education provided? The strict competitive conditions which force entities to understand that training and improvement of their employees was an important competitive weapon, as well as the obligation of employees to adapt to changing environment, has risen the level of importance attached to education and the number of internal training hours (Capar, 1996).

Indeed, training has a fundamental function in terms of enabling an organization or its employees to follow up continuously changing conditions. Since all the activities which do not require mental skills will be carried out by machines soon people will only be able to participate in the economic life through their mental skills." In general outcomes expected from training can be summarized as follows: "Production complying with organizational standards in terms of quality and quantity, continuous effort to improvement, limitlessness in quality understanding, reduction of faulty production and service, improvement of business methods, minimization of labor force rotation, facilitation of cooperation and coordination, reduction of overtime pays, saving in maintenance and repair costs, reduction of occupational accidents, positive effects on moral, fast adaptation to new circumstances" (Ekin, 1997).

## 2.2 Definitions of Motivation

The word "motivation" has been derived from MOT-Movere which means to move. The motivation concept, in behavioral science, is used for behaviors aimed at a certain target through internal external driving forces. In Turkish the words "stimulus" and "actuator", they are used instead of "motive". In addition, motivation means the power or energy which triggers a person for a certain target. Furthermore, it is possible to define motivation as a set of efforts exerted to trigger one or more persons towards a certain target or objective (Yimazer, & Eroglu, 2010).

Discussing psychological aspects of business design also enables examination of factors contributing to job satisfaction and motivation. In addition to such psychological factors, there are

monetary factors. Money functions as a financial motivator. Such monetary rewards may be in the form of a bonus, profit sharing or incentive systems.

The incentive systems employed by industrial establishments in the USA are based on individual or group performance. It refers to individuals or groups who achieve production output greater than that specified in pre-determined standards. Such standards are developed according to time per work item or a number of parts manufactured. Standard times may sometime refer to as measured daily work; payment is made according to the achieved standard time amount. For the part-proportional system, a standard time is determined for each part and the employee is paid for each part he/she manufactures (Ayanoglu, 2006).

Motivation is a tool which shows the level of effort exerted by an individual. Motivation, in this sense, results in the appearance of selections, direction, and level of effort of an individual by directing his/her behavior. From this point of view, motivation may be defined as an individual indicator of quality. It can be said that the more an individual exerts effort for the target to which he/she wishes to accomplish the more motivation he/she has on such matter and the more that person is over the individual quality standards.

Needs which are the structural elements of human nature may be defined as facts that ensures continuity of human life and existence when met and that impose extinction threat when not met. Needs are tried to be met by the individual. Each need arising creates an internal driving force, in other words, motive. Motives are the driving forces and factors which affects an individual to go into action or prefer a motion path to another one. This motive-need relationship resulting in another behavior forms the concept of motivation (Sabuncuoglu, & Tuz, 1994).

Motivation may be defined as an application aimed at enhancement the role of personnel engaged at first stage in the provision of service or the personnel mainly managed for ensuring productivity and effectiveness. Motivation, in other words, is the power of an individual to fulfill his/her works and duties willfully and in a preferred manner.

Since new employees would hardly adopt fully to the organization, they should be guided to ensure them to effectively carry out their works and duties. When needs change replacement should be done. Because human resources plans can foresee new staffing needs. Needs newly arising are met by improving existing employees or by recruiting additional employees. Improvement procedures provide the employees with new knowledge, skills, and abilities to meet the employee's desires and wishes for ensuring their continuous participation in the organization (Bingol, 2003).

Psychological security is as effective on the individual as job security in the organization where the employee is employed. If the employee believes that his/her manager(s) and the employer would not show any negative conduct to him/her then his/her motivation would be higher. Psychological security is an emotional security rather than a physical one. When individuals work in an environment where they can feel such emotion they would be able to dedicate themselves to their job and be more effective. (Acuner, 2010).

### 3 APPLICATION OF RESEARCH

The purpose is to examine the effect of "motivation" which plays an important role in institutions of Labor force productivity in an industrial entity. It is also aimed at providing a contribution to recent studies by examining its effects on productivity as well as knowledge and skill gain due to periodical training seminars and those on expectations and behaviors of employees. Important targets of such training include personal development and increase in labor force productivity. In this sense, the study examined the productivity aspect of training seminars in an integral frame (motivation, wage, social relations, training, and communication) and whether such aspects exhibit differences in terms of gender, marital status, educational status, department, job title, and age.

#### 3.1 Sampling Method and Scale of the Research

Within the scope of this study, questionnaires were employed to measure opinions, expectations of employees and effects of training. This study in which contribution of training seminars provided in the entity on the development of personal

behavior was conducted with the participation of a study group of 186 persons with various job titles. Effect of training seminars provided by Adiyaman University members on labor force effectiveness and development of personal behavior and factors affecting such process have been examined. A scale composed of 58 questions has been developed for the motivation and Productivity fields, and determination of employee's expectations and opinions. Such expressions of employees have been assessed according to five-point Likert Scale (1 - Very poor, 2 - Poor, 3 - Sufficient, 4 - Good, 5 - Very Good). The industrial entity which is engaged in manufacturing activities employs 400 persons, and the ideal sampling size has been determined to be 186 which are able to represent the universe with 95% confidence level and 5% error level. The form used for the questionnaire was answered by 183 persons, 82 of whom were male and the remaining 101 were female. 3 questionnaires, which were included in the study group, were not included in the analysis since they were not filled in correctly according to SPSS software during processing the questionnaires. The questionnaire form was composed of two parts which are: The demographical structure of the employees was classified according to opinions and expectations of the employees about wage, motivation, social relations, training, and productivity.

#### 3.2 Assessment Method of the Research

Cronbach's Alpha and KMO values which are the reliability tests for the questionnaire were found to be 0.902. This value which is greater than 85% shows that our study is highly reliable.

For the study in addition to reliability and factor analyses, an Independent-Samples T-Test was conducted in order to determine if the motivation, wage, social relations, training, and communication aspects pose significant differences in terms of gender, marital status, department (administrative and production department). For the factor "age" since there are five different age groups (21-30, 31-38, 39-46, 47-54 and 55+) assessment of the aspects motivation, wage, social relations, training and communication in terms of age was carried out by means of ANOVA. In addition, ANOVA analyses were carried out for 8 different educational status

group (primary school, secondary school, high school, Occupational high school, college, undergraduate, postgraduate and other).

### 3.3 Limitations of the Research

There are limitations that should be considered when assessing the results of the study. The findings from the study are the results concerning whether there are significant differences in motivation, wage, social relations, education, communication status according to gender, marital status, and department (administrative or production department) for the employees residing at or around Istanbul. Therefore, it cannot be presumed that existing findings constitute a general situation for employees of other industrial establishments. Generalization of the results requires the conduct of more studies which should cover employees with different knowledge and cultural structure and other industrial fields.

### 3.4 Findings of the Research

The sampling size of the study is 186. The form used for the questionnaire was answered by 183 persons, 82 of whom were male and the remaining 101 were female. In total 58 questions were asked under the study; 51 of which relates to employee's expectations and a significance level of the same; they have been assessed by means of definitive statistical methods and mean and standard deviation values for each expression are provided.

### 3.5 In terms of Marital Status

Since the marital status of the employees was determined under two categories "married" and "unmarried" independent samples t-test was conducted to determine whether there is significant difference relating to the sub-aspects in terms of marital status. The number of unmarried and married persons was 78 and 106, respectively. It is possible to conclude as follows. Although the young population is in a majority in our country majority of employees is composed of married persons. Therefore, there are two possibilities: First one is that employers prefer married people in the course of the recruitment process and the second one is serious need of a job for married people in terms of monetary aspects. A third possibility is that younger people do not work at the same job for long terms.

Table 1. Sub-aspects according to marital status

	Your Marital Status	N	Mean	Std. Dev.	t	p
Social Relations Status Overall	Unmarried	78	12.115	4.6458	-1.302	.825
	Married	106	13.028	4.7378		
Motivation Status Overall	Unmarried	78	10.744	4.6135	-.370	.927
	Married	106	11.000	4.6660		
Wage Status Overall	Unmarried	78	11.013	3.6127	.120	.656
	Married	106	10.943	4.0844		
Educational Status Overall	Unmarried	78	11.923	4.1208	-.045	.279

#### 3.5.1 Social relations Sub-Aspect by Marital Status

When Table 1 is assessed a difference between the mean values for unmarried and married in terms of marital status regarding the social relations status which is the first aspect of the study ( $X_{unmarried}=12.115$ ;  $X_{married}=13.028$ ). A t-test was employed to determine if such difference is significant or not. According to results of the t-test such difference was found to be insignificant ( $t=-1,302$ ;  $p=0.825 \rightarrow p>0.05$ ). According to marital status, there is not a significant difference between the expectations of married employees and opinions of unmarried employees on the social relations.

In other words, opinions of married and unmarried persons on the application are different and do show a homogenous structure. In addition, although the number of married employees is greater than that of unmarried persons this does not affect the result.

#### 3.5.1.1 Motivation Sub-Aspect by Marital Status

For the second aspect of the study, motivation, a slight difference was found between the mean values for unmarried and married employees according to their marital status ( $X_{unmarried}=10.74$ ;  $X_{married}=11.00$ ). Independent samples t-test was employed to determine if such difference is significant or not.

According to the values obtained from the t-test applied ( $t=-370$ ;  $p=0.927 \rightarrow p>0.05$ ) the difference identified was insignificant. It was found that there

was not a significant difference between the opinions of unmarried and married employees on motivation in terms of marital status.

Opinions of married and unmarried persons on motivation are not different and do show a homogenous structure. Both married and unmarried employees think positively in terms of the activities carried out by employers to enhance motivation; from which a conclusion may be derived: there is not any discrimination between the married and unmarried employees.

### 3.5.1.2 Wage Sub-Aspect by Marital Status

At the end of the study when the marital status was assessed for the third sub-aspect of the study, wage, a difference was found between the mean values of married and unmarried employees ( $X_{unmarried}=11.01$ ;  $X_{married}=10.94$ ). A t-test was conducted in order to determine if this difference equal to 0.07 was significant or not.

According to results of the t-test such difference was found to be insignificant ( $t=0,120$ ;  $p=0.656 \rightarrow p>0.05$ ). It was found that there was not a significant difference between the opinions of married and unmarried employees on wage.

Therefore, opinions of married and unmarried persons on wage are not different and do show a homogenous structure.

In other words, married and unmarried employees of the entity share the same opinions on the sub-aspect wage. In addition, although the number of married employees is greater than that of unmarried persons this does not affect the result. From which it can be concluded that there is no discrimination between the married and unmarried employees in terms of wage.

### 3.5.1.3 Education Sub-Aspect by Marital Status

At the end of the study when the marital status was assessed for the fourth sub-aspect of the study, education, a difference was found between the mean values of married and unmarried employees ( $X_{unmarried}=11.01$ ;  $X_{married}=10.92$ ). A t-test was conducted in order to determine if this difference equal to 0.9 was significant or not.

According to results of the t-test such difference was found to be insignificant ( $t=-.045$ ;  $p=0.279 \rightarrow p>0.05$ ). It was found that there was not a

significant difference between the opinions of married and unmarried employees on education. Therefore, opinions of married and unmarried persons on education are not different and do show a homogenous structure.

In other words, married and unmarried employees of the entity share the same opinions on the sub-aspect education.

In other words, the employees of the entity share the same opinion that training provided, or planned to be provided, by the entity would be beneficial. In addition, although the number of married employees is greater than that of unmarried persons this does not affect the result.

## 3.5.2 In terms of Department

The employees have been assessed under the sub-aspects social relations, motivation, wage and education in terms of their departments. This assessment covers 66 persons working at administrative department and 112 employees working at production department.

### 3.5.2.1 Social Relations Sub-Aspect by Department

When the employees were assessed according to their departments in terms of social relations a significant difference, 2.1, was found between the mean values for those working at administrative and production departments ( $X_{ad}=13.87$ ;  $X_{pr}=11.77$ ), as shown in Table 2.

Table 2. Sub-Aspects of Department

	Your Department	N	Mean	Std. Dev	T	p
Social Relations Status Overall	Administrative Department	66	13.87	4.40	2.93	.483
	Production Department	112	11.77	4.72		
Motivation Status Overall	Administrative Department	66	12.39	4.84	3.39	.395
	Production Department	112	10.00	4.36		
Wage Status Overall	Administrative Department	66	12.07	4.29	2.92	.174
	Production Department	112	10.36	3.41		
Educational Status Overall	Administrative Department	66	12.74	4.02	1.89	.052

A t-test was employed to determine if such difference is significant or not. According to results

of the t-test such difference was found to be insignificant ( $t=2.939$   $p=0.483 \rightarrow p>0.05$ ). In other words, it was found that there was not a significant difference between the administrative department employees and production department employees in terms of the social relations aspect.

In other words, no difference was found between the service satisfaction levels of the administrative department employees and production department employees. In addition, the large difference between the mean values did not significantly affect the results negatively. Which shows that: The management exhibits equal and fair treatment to both administrative and worker staff. This also means that the top management policies have been efficiently and positively employed down to bottom of the organizational chart. It is a fact that socially satisfied employees will have stronger motivation.

### 3.5.2.2 Motivation Sub-Aspect by Department

When the second sub-aspect, motivation, was assessed in terms of employment departments a difference was found between the mean values of administrative employees and production department employees ( $X_{ad}=12.39$ ;  $X_{pro}=10.00$ ). Independent samples t-test was employed to determine if such difference is significant or not. According to results of the t-test such difference was found to be insignificant ( $t=3.393$ ;  $p=0.395 \rightarrow p>0.05$ ). A significant difference was not observed between the opinions of employees on motivation according to employment department. Therefore, opinions of administrative department employees and production department employees on motivation are the same and have the same degree of importance. This shows that although the number of administrative department is about half of that of production department employees the employer does not discriminate between its employees working at the top and low management levels. However, in general, motivation status of administrative employees (middle and top employees) was found to be higher than that of lower employees. The entity is engaged in textile industry and the employees work in shifts. It cannot be assumed that moral and motivation level of personnel working at daytime shift or sometimes in night shift is always the same.

### 3.5.2.3 Wage Sub-Aspect by Department

When the third aspect, wage, of the study, was examined a difference was found between the mean values for the administrative department employees and the production department employees ( $X_{ad}=12.07$ ;  $X_{pro}=10.36$ ). According to results of the t-test conducted to determine whether such difference is significant or not such difference was found to be insignificant ( $t=3.393$ ;  $p=0.395 \rightarrow p>0.05$ ). A significant difference was not observed between the opinions of employees on the department. In this case, it can be said that opinions of administrative and production department employees on the wage are the same and declared the same level of significance.

### 3.5.2.4 Education Sub-Aspect by Department

When the forth sub-aspect, education, was assessed in terms of employment departments a difference was found between the mean values of administrative employees and production department employees ( $X_{ad}=12.74$ ;  $X_{pro}=11.45$ ). According to results of the t-test conducted to determine whether such difference is significant or not such difference was found to be insignificant ( $t=1.895$ ;  $p=0.052 \rightarrow p>0.05$ ). A significant difference was not observed between the opinions of employees on training. In this case, it can be said that opinions of administrative and production department employees on training are the same and declared the same level of significance. In addition, it has been observed that administrative department employees attached more importance to training in comparison with production department employees.

### 3.5.3 In terms of Age

When the data concerning the application was assessed, since there is more than two age groups (four groups in 16-25; 26-35; 36-45; 46+) One-way ANOVA test was employed and corresponding values are provided in Table 3.

#### 3.5.3.1 Social Relations Sub-Aspect by Age

When social relations of the employees were assessed according to age a difference was found between the groups. According to results of the ANOVA test conducted to determine whether such difference is significant or not such difference was found to be insignificant ( $F=0.902$ ;  $p=0.464 \rightarrow p>0.05$ ). A significant difference was not observed between the opinions of employees at different

age groups on social relations. It can be said that expectations of the employees are the same in terms of various age groups.

Table 3. Sub-aspects ANOVA test in terms of Age

		Sum of Squares	df	Mean Square	F	p
Social Relations Status Overall	Between Groups	81.54	4	20.38	.902	.464
	Within Groups	4090.30	181	22.59		
	Total	4171.84	185			
Motivation Status Overall	Between Groups	52.65	4	13.16	.609	.657
	Within Groups	3913.12	181	21.61		
	Total	3965.78	185			
Wage Status Overall	Between Groups	18.30	4	4.57	.298	.879
	Within Groups	2777.79	181	15.34		
	Total	2796.09	185			
Educational Status Overall	Between Groups	207.03	4	51.76	2.75	.029
	Within Groups	3401.11	181	18.79		
	Total	3608.15	185			

### 3.5.3.2 Motivation Sub-Aspect by Age

When opinions of the employees on motivation status there is a difference between the groups. ANOVA test was conducted in order to determine if this difference was significant or not. According to results of this test, such difference was found to be insignificant ( $F=0.609$ ;  $p=0.657 \rightarrow p>0.05$ ). The ANOVA test shows that there is the insignificant difference between the groups' behavior according to age. In other words, opinions of employees on motivation change with varying ages. It can be said that opinions of different age groups on personal development were not different.

### 3.5.3.3 Wage Sub-Aspect by Age

When opinions of the employees on wage were examined a difference between their mean values has been found. According to results of the ANOVA test conducted to determine whether such difference is significant or not such difference was found to be insignificant ( $F=0.298$ ;  $p=0.879 \rightarrow p>0.05$ ), as shown in Table 4.

The ANOVA test shows that there is the insignificant difference between the groups' behavior according to age. In other words, opinions of employees on education do not change with age. In other words, it can be said that opinions of the employees on this application are the same in terms of various age groups. From this point of view, all the age groups concluded that there should be better wages and the employer did not employ a wage-determination method based on age.

Table 4. Wage and Educational Status in terms of Age

		Sum of Squares	df	Mean Square	F	p
Wage Status Overall	Between Groups	18.30	4	4.57	.298	.879
	Within Groups	2777.79	181	15.34		
	Total	2796.09	185			
Educational Status Overall	Between Groups	207.03	4	51.76	2.755	.029
	Within Groups	3401.11	181	18.79		
	Total	3608.15	185			

### 3.5.3.4 Education Sub-Aspect by Age

When opinions of the employees on training were examined a highly significant difference between their mean values has been found. According to results of the ANOVA test conducted to determine whether such difference is significant or not such difference was found to be insignificant ( $F=2.755$ ;  $p=0.029 \rightarrow p<0.05$ ). The ANOVA test shows that there is a significant difference between the groups' behavior according to age. In other words, opinions of employees on education change with varying ages. In other words, it can be said that opinions of the employees on education are different in terms of various age groups. Since the study did only examine whether there is a significant difference between the groups the post hoc test had not been employed for more details.

## 4 CONCLUSIONS

The number of persons included in the study was 183; 82 of whom were male and 101 of whom were female. According to gender distribution, the sampling group was composed of female and male persons with percentages equal to 53.3%

and 44.1%, respectively. When frequency distribution was assessed according to age it was found that 43.5%, 25%, 10% and 1.5% of the employees included in the study were between 21 - 30, 31 - 38, 47 - 54, and 55 +, respectively. Since the entity is a textile company majority of the employees are young and female.

For the marital status of the employees, 41.9% and 57% of the employees were unmarried and married, respectively; and 1.1% of them did not answer the question.

For educational status, most of the employees were primary and secondary school graduates, and about 10% of the employees were undergraduate or postgraduate. The existence of such employees has positively affected the relationship between the industry and academicians; which ensures that both sides are able to cooperate easily.

For distribution of the employees according to the department, 60% and 35% of the employees were production department employees and administrative department employees, respectively. A high number of directors working at the administrative department is a result of that there are many companies under the group.

Percentage of those who thought that wages were low or very low was 72%; 4.3% and 22% of whom found wages high and moderate, respectively. It was observed from cross-analysis that those who found the wages high were of the administrative department. For holidays and rest days which might improve the performance of employees, it was observed that the company's approach to this point was positive, but rewards granted due to achievements of the employees were weak. In other words, the company did not reward its employees due to their achievements. This may be caused by the fact that majority of the employees were workers and the workers might that reward is composed of only money. For fairness and competency in promotions, half of the employees showed a positive attitude.

Half of the employees were pleased with the working hours and demanded more responsibility from the employer. In addition, the employees declared that their satisfaction in terms of social benefits provided by the company was average. Majority of the employees deemed the company

they were employed at important in terms of their stature, declared that the company protected and defended them in terms of legal aspects and that sufficient equipment and hardware and equality of opportunity have been provided for training but demanded more training. Communication of the employees with other departments was good, communication with other colleagues and supervisors was very good and, also, it was found that sensitivity of the management to their jobs and problems of the employees was sufficient.

The employees declared that wage as an important factor in terms of their motivation and efficiency, but appreciation was more important than those. In addition, they declared that ability to exploit training facilities was a factor which affected their motivation and efficient in a positive manner.

The number of employees who declared that they used 50% or less of their capacities was 25 while 31% of the employees declared that they used 100% of their capacities. It may be concluded that this is the reason of dissatisfaction relating to the wages. Results of the study were assessed accordingly and this cooperation with the said industrial entity produced many positive results and advantages.

Overall benefit:

- University members provided a seminar to industrial establishments at every 3 months for a total time of 36 months; which training affected quality and labor force efficiency in a positive manner.
- Persons from the mid and top management of the industrial establishment were invited to Adiyaman University and they shared their experiences with students especially studying at the faculty of economics and administrative sciences.
- A visit to the Organized Industrial Zone of the city was arranged for those from the industrial establishment; by which those done and must be done have been assessed and discussed. For a group of successful students of Adiyaman University, a technical visit was made to the said industrial establishment so that the students could observe such applications.
- Adiyaman University members participated in the 15<sup>th</sup> Production Research Symposium

which was arranged by Ege University and Production Researchers Association, hold interviews with many industrial representatives and invited them to cooperate with the universities.

- Such activities contributed to the improvement of students' knowledge on the real world and for the establishment development of new strategies towards the improvement of labor force efficiency.

According to the study, after the IVAS seminars conducted in the industrial establishment engaged in textile industry, relations between and problems relating to motivation and labor force efficiency were analyzed, and for improvement of job quality and labor force efficiency it is concluded that industrial establishments engaged in textile industry can conduct their activities more efficiently when cooperate with other establishments through their data.

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