

PROCEEDINGS OF The 7th MAC 2016



INTERNATIONAL CONFERENCE

27th-28th May, 2016

Czech Technical University
in Prague



Editors

Jiri Vopava, Czech Republic
Vladimir Douda, Ph.D., Czech Republic
Radek Kratochvil, Czech Republic
Mario Konecki, Ph.D., Croatia


Academic Conferences Association, z.s.


INFORMATION SERVICES

Impressum

Publication name

Proceedings of The 7th MAC 2016
1st edition, Prague 2016

Conference date and venue

May 27th - 28th 2016 in Prague

Publisher

MAC Prague consulting Ltd.
Chudenicka 1059/30
Prague 10 - 102 00
Czech Republic

Contact

e-mail: info@mac-prague.com
web: www.mac-prague.com

Editors

Jiri Vopava, Czech Republic
Vladimir Douda, Ph.D., Czech Republic
Radek Kratochvil, Czech Republic
Mario Konecki, Ph.D., Croatia

Programme Committee

Radek Kratochvil, Czech Republic
Sanjay Tirbhon, MSc, United Kingdom
Doc. PhDr. Mária Jánešová, CSc., Czech Republic
Prof. Otto Pastor, Ph.D., Czech Republic
Ass. Prof. Vit Fabera, Ph.D., Czech Republic
Mario Konecki, Ph.D., Croatia

Organizing Committee

Jiri Vopava, Czech Republic
Vladimir Douda, Ph.D., Czech Republic
Mario Konecki, Ph.D., Croatia

Technical publishing board

Jiri Vopava, Czech Republic
Radek Kratochvil, Czech Republic
Vladimir Douda, Ph.D., Czech Republic
Mario Konecki, Ph.D., Croatia

ISBN

ISBN 978-80-88085-06-5

Opinions of Forest Industrial Engineering Department Students on Their Education: Istanbul University Example

**Emine Seda ERDINLER, Zubeyde BULBUL, Emel OZTURK,
Derya SEVIM KORKUT, Kucuk Huseyin KOC**

Forest Faculty, University of Istanbul

Vocational School of Forestry, University of Istanbul

Forest Faculty, University of Istanbul

Forest Faculty, University of Duzce

Forest Faculty, University of Istanbul

seda@istanbul.edu.tr, zubeyde.bulbul@istanbul.edu.tr, emelozt@istanbul.edu.tr,
deryasevimkorkut@duzce.edu.tr, hkoc@istanbul.edu.tr

Abstract

"Forest Industrial Engineering" education has started as an engineering discipline for planning, performing and inspecting the most appropriate transformation of wood raw material into products. The employment opportunities are increasing with the developments in the forest products industry. This study aims examining the opinions of the students of Forest Industrial Engineering Department of Istanbul University, about their education and future. The survey form was applied during the fall semester of the academic year 2015-2016. The universe of study was 238 with 3rd year and 4th year students. Surveys from 102 students were taken into assessment. The survey form had questions about demographic characteristics of the students, their opinions on their education and their professional future. During the analysis, first the variables were coded, a database was created and assessed with SPSS software. As the result; it's found out that the satisfaction degree of one third of the students was 60% and more. It's been determined that 53,9% of the students were satisfied with their department. 44,1% of the students stated that they consider themselves as sufficient for working in the private sector; and the areas they preferred to work after graduation were project-design, marketing, production planning, R&D, quality control and procurement.

Keywords: Forest Industrial Engineering, satisfaction status, professional future.

Main Conference Topic: Computer Science, Security and Information Technology (alter with the topic that relates to your paper)

Introduction

Very important problems which would cause lack of competitiveness such as not using the advanced technology sufficiently effective, irregularity in capacity use, and increasing quality and standardization requirement against the improving EU relations and increasing international competition despite the dynamic structure of the Forest Products Industry should not be ignored. Within this context, one of the most important advantages of our country in terms of both more effective use of technology and efficiency and quality understanding is the existence of a well operating Forest Industrial Engineering education.

The total global turnover in this industry is around US\$ 250 billion, while it is only US\$ 4,5 billion, including the unrecorded transactions, in our country. Concordantly, the

demand increases for Forest Industrial Engineers, who perform the works and services in the businesses producing semi-finished products, particleboard-fiberboard etc. as well as furniture and similar finished products through various processes on wood raw material. The small businesses in forest products and furniture industry, however, still employ almost no Forest Industrial Engineer (2%), it can be seen that the employment rate in medium-sized businesses is around 30%. The engineer employment rate in large businesses is still insufficient, although it is higher than the others.

The employment problem will be significantly reduced when the forest products businesses employ sufficient amount of Forest Industrial Engineers, and they will also be able to perform higher quality production with less loss. As a result, for the industry which is open for development, is capable of creating a potential power, but has a heterogeneous structure and low capacity use rates in several sub-sectors, the need for increasing its international position, increasing the product range, tending towards products with higher quality standards and added value, and transforming from small business structure to businesses with high knowledge base, developed technological structure capable of performing flexible production will increase demand for Forest Industrial Engineers.

In recent years, the demand for young Forest Industrial Engineers, who have a sufficient foreign language and have commanding computer skills, increases. Forest Industrial Engineers successfully take place in the forest products and furniture industry with project, operation, planning, production and management, research and development, quality control, forest products related procurement, marketing, import and export positions of the factories related to timber, wainscot board, plywood, particleboard, fiberboard, drying and steaming, paper, impregnation, parquet, joinery and furniture production. The abovementioned is confirmed, although with some deficiencies, by the Law on Forest Engineering, Forest Industrial Engineering and Wood Work Industry Engineering effective as of 7.7.2006 [1].

In the light of the recent changes occurring both in our country and the world, it is imperative to make changes in the academic programs of the forest industrial engineering departments. In addition to this, it would not be a healthy approach to just amend the curriculum for meeting this need for change. It is essential to well determine the dynamics of the change based on our country and the world, and design a curriculum accordingly.

It is an opportunity that the recent intensive pressure on the university departments for being first nationally and then internationally accredited and the demand for restructuring the curriculum of the universities coincide with each other. If these two facts are addresses as processes that complement and realize each other, then it will be possible to achieve academic programs that are capable of solving the national problems and have international accreditation [2].

According to the results of a study carried out by Öztürk et al. [3], the motivation level of fresh (1st year) students of Forest Industrial Engineering department is determined to be around 50% in average. It's also found out that more than half of the students enrolled to the department without knowing about the department sufficiently and with random choices, and this is reflected as a lack of motivation in the beginning of education, and lack of sufficient importance and care to education. Distribution of the satisfaction level has a heterogeneous structure. Another important reason for the students to prefer this department appears as their families have a relationship or business related to forest products. In addition to the group enrolled to the department with random choice, there is also another group enrolled to the

department who had sufficient score and wanted to enroll to a university, who decided upon the recommendation of their school or circle, and who decided upon the recommendation of their guides. Less than half of the students enrolled to the department with sufficient awareness on their choice. Considering the rate of the students enrolled to the department within their first five preferences during the last three years, being able to study in Forest Industrial Management department is among the ideal targets of only a small rate of the students [3].

There is a significant motivation problem in our universities. Our students do not choose their departments with sufficient level of awareness. The student enrolled to the university mostly does not make a fresh start for himself/herself [3].

According to Akyüz and et al., the fact that there is too much theoretical knowledge, but too less practice knowledge, which is related to the fact that book, lecture note and lecture related tools are insufficient, has been considered as very significant to the lack of education quality. Insufficient laboratory study ranks second. 71,8% considered the fact of not being able to benefit from the laboratory as insufficient [4].

According to the results of the survey applied to the students from different departments of Atatürk University, there is a positive correlation between spare time motivation and spare time satisfaction concepts. In addition to this, it's been observed that the motivation and satisfaction level of the individuals attending to more spare time events is higher than the individuals attending to less spare time events [5].

Exam anxiety is another important factor that affects the success of students in education. It's been determined that there is a negative correlation between exam anxiety and personality general, social and personal adaptation values. The exam anxiety level decreases when the students' adaptation level related to these personal characteristics increases. Family relationships, social relationships, antisocial tendencies, emotional determination, and neurotic tendencies, the sub-characteristics of personality general adaptation, are the personal characteristics that affect the exam anxiety. It's been concluded that exam anxiety has positive correlation with family relationships among the personal characteristics, and negative correlation with social relationships, antisocial tendencies, emotional determination, and neurotic tendencies [6].

In a study examining the exhaustion of university students, statistically significant results were obtained in terms of gender, social support, place they were born and raised, faculty / college they studies at, class level, and weekly lecture hours. The students without social support are exhausted more and feel themselves as incompetent. It might be considered that encouraging the students, who intensively study in order to meet the success requests of their families and schools almost in every level, to social events that they can receive a support and carrying out the required arrangements at the schools might help in reducing the exhaustion of the students and maintaining their mental health. It also might be considered that senior students would encounter more stress and exhaustion due to the factors such as graduating from the school, getting prepared for central exams for appointment, and employment uncertainty [7].

In a study carried out by Tuzgöl Dost [8] with university students, the factors negatively affecting the future expectations of university students have been studied deeply, and a recommendation was brought that measures should be taken for more optimistic

consideration related to the future. According to the results of this study, one of the factors related to life satisfaction levels of the university students is the perceived academic success. Having low academic success in a process where the university students may have their most intensive and professional education during their education life might cause them to have a fear of not being graduated and a concern to lose their education opportunity which they have obtained after a difficult period. The root causes of academic failure include factors such as not being satisfied with the discipline, professional doubt, and low motivation. Therefore, low academic success might appear as a multidimensional problem based on more than one causes. Having academic success is one of the most important factors for the happiness of the students during their university years which will bring them to the profession covering the majority of their lives and the professional identity determining their status in the community [8].

It's also seen that university students' life satisfaction is correlated with their expectations related to the future. The life satisfaction levels of university students who believe all their expectations related to the future will become true, in other words having an optimistic perspective related to the future, are higher than the ones who believe only some of their expectations related to the future will become true; and the life satisfactions levels of the university students who believe only some of their expectations related to the future will become true are higher than the ones who believe none of their expectations will become true. So, the university students' life satisfaction increases when their optimistic perspective to the future is higher [8].

The students, who live their university years with economic problems, have significantly lower satisfaction levels in all aspects of their needs, and they are a risk group for feeling unhappy. The satisfaction perceived related to freedom and entertainment needs of the students in their first year of higher education is found to be significantly higher compared to the students in upper classes; and it is particularly seen that the senior students are a risk group for feeling unhappy. In addition to this, related to the level of meeting the freedom need of the university students, all of the differences between the groups related to the income level of the family are found to be significant. Similarly, the level of meeting the freedom need of the students who answered "no" to the question "Is your monthly average income during your university life enough for meeting your needs?" is significantly lower than the ones who answered the same question as "yes" and "definitely yes". The findings show that the university students perceive having economical freedom as an important aspect of freedom definition [9].

When a general assessment is made related to the role of some socio-demographic variables of the students on the meeting level of basic needs, it's seen that gender variable does not cause any significant differentiation related to meeting the basic needs other than affection and belonging need; the education year causes significant differentiations particularly related to the meeting level of entertainment and freedom needs and senior students perceive less satisfaction related to the needs; the satisfaction of students who live in state dormitory is significantly low in terms of their needs for entertainment and particularly survival; the meeting level of entertainment needs for the students who mostly lived in metropolis is significantly higher than the students who lived in smaller cities and settlements with less population; family's average income level and particularly economic satisfaction perceived during the university years have significant effect in meeting the basic needs; and the students with low perceived economic satisfaction get significantly lower scores for all needs [9].

According to the study performed by Korkut-Owen et al. [10] the students studying in foundation universities considered their interests, skills, values, personal characteristics, aims etc. while choosing their department; and the students studying in public universities preferred the departments which their exam result is sufficient for. In the same study, the students graduated from general high school preferred their university admission exam result is sufficient for the department they are studying in; the students graduated from Anatolian/science high schools considered systemic factors such as the result they obtained from the university admission exam is sufficient for this department, it is a prestigious profession, and the profession they have selected might bring a good income to them in the future. The first four reasons why the students have chosen the department are their interest to the field, the result of admission exam sufficient for this department, compliance of the field for the personal characteristics and high employment opportunity, and this shows that personal and systemic factors are prioritized. It's seen that social factors are intensive after tenth rank, and chance factor is on the bottom of the list. It's found out that female students attach importance to the suitability of the department they choose for gender, consider their interests more, and are more influenced by their families than male students in choosing their department. It's seen that male students consider works bringing a good income more in choosing a field. It's seen that the reasons for choosing a department varies according to the universities. The department choice of the students found to vary according to the data related to influence level of the people working in this field in the past, gender, and mother's education status. Related to satisfaction in general, it's seen that most of the students are satisfied with their university and department. The social, cultural and physical possibilities offered by the university and the content of curriculum are on top of the list for dissatisfied fields. This shows that the university students are expecting more social and cultural opportunities from their universities [10].

Prepared for revealing the satisfaction level related to the department of the students in their last two years of education in forest industrial engineering department, this study investigates with the students of Forest Industrial Engineering Department of Istanbul University Faculty of Forestry what should be done for improving the undergraduate study.

Material and Method

In this study, it's aimed to reveal the satisfaction levels of the students of Forest Industrial Engineering Department of Istanbul University Faculty of Forestry related to their departments.

The study was carried out at the end of November during fall 2015-2016. The universe of study is consisted of total 238 junior (3rd year) and senior (4th year) students in the Forest Industrial Engineering Department. The study is applied to the junior and senior students as professional lessons are more intensive and the department is being known better during these years.

Survey technique is used in the study for collecting data. The survey used in the study is consisted of 34 questions. The survey form is prepared by using the studies in the literature [11] [12], and the survey form contains questions related to some demographic characteristics of the students, their opinions on the education they receive and their professional future, the problems they encounter related to the department and their recommendations on solution.

The survey forms were printed out and distributed personally to the students. The survey was applied to the students who actively attend to the lectures. There were survey forms which were not returned back and which were considered as not suitable for assessment. As a result of the study, total 102 surveys from the Forest Industrial Engineering Department were taken into the scope of assessment. The return rate of the surveys was determined as 43% in the Forest Industrial Engineering Department. Considering the studies

in the literature, the return rates of the universe varies between 20% and 45% [13] [14]. Therefore, the data quantity obtained is considered to be sufficient statistically.

During the analysis, first the variables available in the surveys are coded, and assessed with Microsoft Excel 2010 and SPSS 2003[15] package software. Various recommendations were developed by using the data obtained from the study.

Findings

1. Some Demographic Characteristics of the Forest Industrial Engineering Department Students

Data related to the class of the students participating to the survey is provided in Table 1.

Table 1. Classes of participating students

Class	Frequency	Percentage
3	51	50
4	40	39,2
4+	11	10,8
Total	102	100

45,1% of the students participating to the study are male students, and 54,9% are female students (Table 2).

Table 2. Genders of the students

Gender	Frequency	Percentage
Male	56	45,1
Female	46	54,9
Total	102	100

The age range of the students varies between 20 and 31, and the average age is set as 24.

Considering the number of siblings, it's been determined that 10,8% of the students have no sibling, while 41,2% have 1 sibling, 32,4% have 2 siblings, 5,9% have 3 siblings, 1% have 4 siblings, and 5,9% have 5 siblings. In addition to this, 2,9% of the students stated that they have 6 and 8 siblings.

Considering the profession of students' fathers, it's been determined that 9,8% of them are civil servants, 5,9% are workers, 2,9% are farmers, 27,5% are self-employed, and 48% are retired. 5,9% of the students stated the profession of their father as other.

Considering the profession of the students' mothers, it's been determined that 72,5% are housewives, 13,7% are retired, 5,9% are civil servants, 3,9% are workers, and 2,9% are self-employed. 1% of the students stated the profession of their mother as other.

23,5% of the students receive education scholarship from government or a private organization, while 76,5% of the students do not receive any scholarship. For the monthly expenses made with the money sent by their families and received from scholarship, 38,2% of the students find it sufficient, 43,1% find it partially sufficient, and 18,6% do not find it sufficient.

Types of high schools where the students of Forest Industrial Engineering are coming from are provided in Table 3.

Table 3. Types of high schools where the students have graduated from

Types of High Schools	Frequency	Percentage
General High School	50	49
Anatolian High School	28	27,5
Anatolian Teacher High School	8	7,8
Industrial Vocational High School	3	2,9
Religious Vocational High School	2	2
Science High School	2	2
Technical High School	1	1
Other	8	7,8
Total	102	100

49% of the students enrolled to the program are consisted of general high school graduates. This is followed by the students graduated from Anatolian High School (27,5%). On the option other (7,8%), the students stated that they have graduated from Open Education High School, Anatolian Vocational High School, Maritime Anatolian Vocational High School, College, Private Science High School, Private High School, and Super High School.

12,7% of the students stated that they prepared for the university exam by themselves, while 84,3% stated that they prepared in a private teaching institution, and 2,9% stated that they took private lesson. Considering the department preference of the students, 14,7% of them stated that they are entitled for forest industrial engineering department in their 1st choice, while 8,8% in 2nd choice, 9,8% in 3rd choice, 6,9% in 4th choice, and 5,9% in 5th choice. 53,9% of the students stated that forest industrial engineering department was their 6th and later choice.

It's been determined that 18,6% of the students enrolled to the Forest Industrial Engineering department chose the department consciously, 53,9% of them chose with more or less conscious, and 27,5% of them unconsciously.

16,7% of the students stated they previously knew about the characteristics and contents of the profession. It's been determined that 50% of the students know more or less about the program, and 33,3% had no information about the program.

The students were asked "if you had the mind set now and had the chance to make a choice again, would you choose the program once again?", and 23,5% of the students stated they would definitely choose, 37,3% would more or less choose, and 39,2% would not choose.

The assessment related to the satisfaction of students compared to their first year in the program is provided in Table 4.

Table 4. Assessment related to the satisfaction compared to the first year in the program

Satisfaction	Frequency	Percentage
0-20%	23	22,5
21-40%	15	14,7
41-60%	30	29,4
61-80%	30	29,4
81-90%	0	0
91-100%	4	3,9
Total	102	100

94,1% of the students provided the answer "no" to the question "Do you (does your father) have a workplace on Forest Industrial Engineering?".

88,2% of the students provided the answer "no" to the question "Does any of your relatives have a workplace on Forest Industrial Engineering?".

2. Opinions of Forest Industrial Engineering Department Students on Forest Industrial Engineering Department

Table 5. Opinions of Students on Forest Industrial Engineering Department

Options	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Do you think the number of academicians in your department is sufficient?	44	43,1	58	56,9
Do you think the materials, tools, equipment, and machinery provided by your department are sufficient for your education?	17	16,7	85	83,3
Do you think the laboratory facilities of your department are sufficient for university education?	24	23,5	78	76,5
Do you think the computer facilities of your department are sufficient for university education?	16	15,7	86	84,3
Do you think the social events organized in your department are sufficient?	8	7,8	94	92,2

43,1% of the students stated that the number of academicians in their department is sufficient. 83,3% of the students stated that the materials, tools, equipments, and machinery provided by the department is not sufficient for university education, while 76,5% stated that laboratory facilities are not sufficient, and 84,3% stated that computer facilities are not sufficient. Majority (92,%) of the students stated that they do not consider the social events organized by the department as sufficient for university education (Table 5).

3. Forest Industrial Engineering Department Students Comparing Their Department with a Department in Another University

For the question "Are you aware of the education provided by Forest Industrial engineering departments of other universities?", 44,1% of the students answered Yes, and 55,9% answered No. Of the students answering this question as Yes, 60% of them stated that the education quality in their department is average, while 8,9% of them said good, and 31,1% said bad (Table 6).

Table 6. Students comparing their department with a department in another university

Options		Frequency	Percentage
Are you aware of the education provided by forest industrial engineering departments of other universities?	Yes	45	44,1
	No	57	55,9
If your answer is Yes, can you please compare your department in terms of education quality with the departments of other universities?	Good	4	8,9
	Average	27	60
	Bad	14	31,1

76,5% of the students did not find the professional tours and observations organized by the department as sufficient. In addition to this, 27,5% of the students did not find the type and content of lessons provided in the department as sufficient.

78,4% of the students stated that their internship was efficient and served to the purpose, while 21,6% stated that their internship did not serve to the purpose.

For the opinions of the students related to the compliance of the education in the department to the private sector, 71,6% of the students stated that the program is behind the private sector, 27,5% stated that the program is at par with the private sector, and 1% stated that the program is ahead of the private sector.

4. Sectors which the Forest Industrial Engineering Students Want to Work In After Graduating

The sectors which the students want to work in after graduating related to the department they are studying are provided in Table 7.

Table 7. Sectors which the students want to work in after graduating

Sector	N	Percentage
Furniture	55	53,9
Particleboard	13	12,7
Public	21	20,6
Paper	10	9,8
Timber	9	8,8
Fiberboard	11	10,8
Door, window	8	7,8
Other	14	13,7

When the sectors which the students want to work after graduating are examined, it's been determined that 53,9% wants to work in furniture (N=55), 12,7% in particleboard (N=13), 20,6% in public (N=21), 9,8% in paper (N=10), 8,8% in timber (N=9), 10,8% in fiberboard (N=11), and 7,8% in door-window (N=8) sector. In addition to this, 13,7% of the students stated that they want to work in plywood, wooden structure, parquet, composite, recycling, academician, business, and other non-department sectors.

5. Fields which the Forest Industrial Engineering Students Want to Work In After Graduating

The fields which the students want to work in after graduating are provided in Table 8.

Table 8. Fields to work in after graduating

Work Area	N	Percentage
Production Planning	25	24,5
Production	24	23,5
Quality Control	13	12,7
Marketing	29	28,4
Project-Design	29	28,4
R&D	19	18,6
Procurement	12	11,8
Other	11	10,8

When the fields which the students want to work after graduating are examined, it's been determined that 24,5% of the students want to work in production planning (N=25), 23,5% in production (N=24), 12,7% in quality control (N=13), 28,4% in marketing (N=29), 28,4% in project-design (N=29), 18,6% in R&D (N=19), and 11,8% in procurement (N=12) field. In addition to this, 10,8% of the students stated that they also want to work in fields such as civil service, banking, food etc. (N=11).

Only 44,1% of the students stated that they consider themselves as sufficient for working in the private sector after graduating. In addition to this, 60,8% of the students stated that they will experience a concern for finding a job after graduating.

3.6. Satisfaction Status of the Forest Industrial Engineering Department Students

During the study, it's been determined that 53,9% of the students are satisfied with their department, while 46,1% are not. The students listed their dissatisfaction from the department as existence of prerequisite lessons, insufficient social facilities, and mostly having theoretical lessons.

The participation of the students to the judgments related to their satisfaction status with the department is shown in Table 9. For the judgments for increasing the satisfaction level related to the department, the students agreed the judgments more on students should be directed to the market, computer education should be improved, market specific lessons should be increased, lesson tools and equipment should be updated, and physical conditions should be improved.

Table 9. Judgment assessments of the students related to satisfaction status

Judgments	N	Average	Standard Deviation
Students should be directed to the market	102	4,69	0,79340
Computer education should be improved	102	4,65	0,88435
Market specific lessons should be increased	102	4,58	0,90491

Lesson tools and equipment should be updated	102	4,58	0,87147
Physical conditions should be improved	102	4,54	0,89694
Student and lecturer dialogs should be improved	102	4,40	1,02696
Some lessons should become optional	102	4,30	1,01268
The course load should be reduced	102	4,18	1,26437
Compulsory English preparation class is very beneficial for the department	102	4,09	1,24686

(1= I definitely do not agree, 2=I do not agree, 3=Indecisive, 4= I agree, 5=I definitely agree)

Conclusion and Suggestions

50% of the students participating to the survey are junior, 39% are senior, and 11% are prolonged students. 55% of the participants are female students, and 45% of them are male students. Age average of the students is 24. 52% of them stated that they have 0 or 1 sibling, while 32,4% of them said they have 2 siblings.

48% of their fathers are retired, 27,5% of them are self-employed, and 9,8% are civil servants. 72,5% of their mothers are housewives, and 13,7% of them are retired.

23,5% of the students receive scholarship. For the monthly expenses made with the money sent by their families and received from scholarship, 38,2% of the students find it sufficient, while 43,1% find it partially sufficient.

49% of the students were graduated from General High School, and 27% from Anatolian High School.

84,3% of the students stated that they prepared for the university exam in a private teaching institution, while 12,7 prepared by themselves. Considering the department choice of the students, 14,7% of them stated that forest industrial engineering department was their first choice, while 8,8% said second choice, 9,8% said third choice, 6,9% said fourth choice, and 5,9% said fifth choice. 53,9% of the students stated that forest industrial engineering department was their sixth and later choice.

It's been determined that 53,9% of the students chose the department with more or less conscious, 27,5% of them unconsciously, and 18,6% of them definitely consciously.

It's seen that 50% of the students have more or less information about the characteristics and content of the profession, while 33,3% have no information, and 16,7% previously had information.

The students were asked "if you had the mind set now and had the chance to make a choice again, would you choose the program once again?", and 23,5% of the students stated they would definitely choose, 37,3% would more or less choose, and 39,2% would not choose.

The students were asked to perform an assessment related to the satisfaction compared to their first year in the program. 37,2% of the students had 40% and less satisfaction, while

62,8% had 41% and more satisfaction. One third of the students stated their satisfaction level as more than 60%.

94,1% of the students have a workplace (father's workplace etc.) related to the Forest Industrial Engineering field, while 88,2% of the students' relatives have a workplace.

43,1% of the students consider the number of academicians in their department as sufficient. 83,3% of the students find the materials, tools, equipments, and machinery provided by the department as not sufficient for university education, while 76,5% find laboratory facilities as not sufficient, and 84,3% find computer facilities as not sufficient. Majority (92,%) of the students stated that they do not consider the social events organized by the department as sufficient for university education. In a similar study carried out by Sevim Korkut et al. [11], 89,8% of the students stated that the materials, tools, equipments, and machinery provided by the department is not sufficient for university education, while 71,4% stated that computer facilities are not sufficient.

The students were asked to compare their department with a department in another university. 56% of the students were not aware of the education provided by forest industrial engineering departments of other universities. 44% of the students were aware of this, and they assessed the education quality in their department as average by 60%, bad by 31%, and good 9% compared to the other universities.

76,5% of the students did not find the professional tours and observations organized by the department as sufficient. In addition to this, 27,5% of the students did not find the type and content of lessons provided in the department as sufficient. 78,4% of the students stated that their internship was efficient and served to the purpose.

For the opinions of the students related to the compliance of the education in the department to the private sector, 71,6% of the students stated that the program is behind the private sector, 27,5% stated that the program is at par with the private sector, and 1% stated that the program is ahead of the private sector.

When the sectors which the students want to work after graduating are examined, it's been determined that 53,9% wants to work in furniture, 12,7% in particleboard, 20,6% in public, 9,8% in paper, 8,8% in timber, 10,8% in fiberboard, and 7,8% in door-window sector. In addition to this, 13,7% of the students are interest with plywood, wooden structure, parquet, composite, recycling, academicians, business, and other non-department sectors.

The areas students want to work after graduation are listed as project-design, marketing, production planning, R&D, quality control, and procurement, respectively.

Only 44,1% of the students stated that they consider themselves as sufficient for working in the private sector after graduating. In addition to this, 60,8% of the students stated that they will experience a concern for finding a job after graduating. In a similar study carried out by Sevim Korkut et al. [11], majority (71,4%) of the students stated that they will experience a concern for finding a job after graduating.

During the study, it's been determined that 53,9% of the students are satisfied with their department, while 46,1% are not. The students listed their dissatisfaction from the department

as existence of prerequisite lessons, insufficient social facilities, and mostly having theoretical lessons.

Suggestions

- It is important for the motivation to create areas where students will make use of their time within the faculty that are suitable for studying and social events, to increase their quantity, and to improve the existing ones.
- It's been considered as necessary to improve the physical education atmosphere in the department. Decreasing the number of enrolled students would help in increasing the educational opportunity and quality.
- It's been considered that the students enrolling to the department by knowing about it would continue their education with higher motivation. Therefore, efforts for generalizing the publicity of department should be improved.
- Thesis should be determined according to the requests being received from the sector, and it should be ensured that some of them are carried out with the sector.
- A joint education program should be developed according to the advancing technology and needs in forest industrial engineering departments in our country, and new expansions and experiences should be shared.

References

- [1] Kurtoğlu, A., Koç, K.H., Erdinler, E.S. & Sofuoğlu, S.D. (2009). Structural and Educational Problems of the Turkish Forest Products Industry, 2nd Forestry Socio-Economical Problems Congress, February 19-21, 2009, SDÜ, Isparta.
- [2] Yıldız, Ü.C. (2010). Innovation Requirement and Accreditation Opportunities in Forest Industrial Engineering Academic Program, 3rd National Black Sea Forestry Congress, May 20-22, 2010, Volume: V, p. 1899-1915.
- [3] Öztürk, E., Koç, K.H. & Erdinler, E.S. (2012). Motivation Problem in Higher Education and Forest Industry Engineering Education, 3rd Forestry Socio-Economical Problems Congress, October 18-20, 2012, Istanbul.
- [4] Akyüz, İ., Duran, A., Karakuş, B. & Alıcı, Y. (2004). Opinions of Karadeniz Technical University Faculty of Forestry Junior and Senior Students on Education, 5th National Forest Faculties Student Congress Proceedings Book, Volume 2, pp. 48-52.
- [5] Ağduman, F. (2014). A Study on Spare Time Motivation and Satisfaction of University Students, Atatürk University Health Sciences Institute, Master Thesis, Erzurum.
- [6] DüNDAR, S., YAPICI, Ş. & TOPÇU, B. (2008). A Study on Exam Anxiety According to Some Personal Characteristics of University Students, Gazi Faculty of Education Journal, Volume 28, Issue 1 (2008) , pp.171-186.
- [7] Gündüz, B., Çapri, B. & Gökçakan, Z. (2012). A Study on Exhaustion Levels of University Students, Dicle University Ziya Gökalp Education Faculty Journal, 19(2012), pp.38-55.
- [8] Tuzgöl Dost, M. (2007). A Study on University Students' Life Satisfaction According to Some Variables, Pamukkale University Education Faculty Journal, 2007 (2), Issue:22, pp.132-143.
- [9] Türkdoğan, T., Duru, E. (2011). A Study on Basic Needs Meeting Level of University Students in Terms of Some Socio-Demographic Variables, Mehmet Akif Ersoy

University Education Faculty Journal, Year 11, Issue 22, December 2011, pp.199 – 223.

- [10] Korkut-Owen, F., Kepir, D.D., Özdemir, S., Ulaş, Ö., Yılmaz, O. (2012). Department Choice Reasons of University Students, Mersin University Education Faculty Journal, Volume 8, Issue 3, December 2012, pp.135-151. (October 2011, XI. PDR Congress, oral presentation)
- [11] Sevim Korkut, D., Gedik T., Uzun O. (2011). Opinions of Forest Industrial Engineering Department Students on Their Education and Professional Future (Düzce University Example), Düzce University Forestry Journal 7(1), pp.46-55, (2011), ISSN: 1306-2182.
- [12] Uzun, O., Çınar, H. (2009). Educational Satisfaction And Expectation of Future Careers of The Students in The Furniture And Design Education, Social and Behavioral Sciences, Procedia Social and Behavioral Sciences 1, 129–135.
- [13] Hum, S.H., ve Leow, L.H. (1996). Strategic Manufacturing Effectiveness; An Empirical Study Based on The Hayes-Wheelwright Framework, *International Journal of Operations and Production Managements*, 16 (4), pp.4-18.
- [14] Bal, J., Gundry, J. (1999). Virtual Teaming in the Automotive Supply Chain Team Performance Management: *An International Journal*, 5 (6), pp.174-193.
- [15] SPSS (2003). Institute Inc., SPSS Base 12.0 User's Guide, 703 p.

Brief biographies of the authors

Emine Seda Erdinler

Emine Seda ERDINLER is an Assistant Professor. Vice Chair in Istanbul University Faculty of Forestry, Forest Industrial Engineering Department. She has Ph.D. in CAD systems and M.S. in Mechanic Properties of Beech Wood from Istanbul University. Her researches are focused on CAD systems, furniture design, surface treatment of wood and Forest Industrial Engineering education. She is responsible for the lectures of Computer Aided Design, Wood Surface Treatment, Standardization and Quality Control for Forest Products and Engineering Design. She is also an active member of the Forest Products Society and Society of Wood Science and Technology.

Zubeyde Bulbul

Zubeyde BULBUL is working as a Teaching Assistant on Furniture and Decoration Program of Materials and Material Processing Technologies Department in Vocational School of Forest Management at the Istanbul University. She obtained her bachelor's degree from the Forest Industrial Engineering, Süleyman Demirel University of Turkey in 2010. She completed her bachelor's degree as an Erasmus student on Faculty of Forestry and Wood Technology of The Mendel University in Brno, Czech Republic. She is currently a Ph. D. student in Süleyman Demirel University. Her researches are focused on furniture design for children's health, furniture design for people with disabilities and wood composites.

Emel Ozturk

Emel OZTURK is working as a Research Assistant Chair in Istanbul University Faculty of Forestry, Forest Industrial Engineering Department. She obtained her Bachelor's degree M.S., Ph.D. from the Istanbul University. Her researches are focused on Six Sigma Approaches in Furniture Production, Supply Chain Management in Furniture Industry.

Derya Sevim Korkut

Derya SEVİM KORKUT is an Associate Professor at the Department of Forest Products Engineering, Düzce University, Düzce-Turkey. She holds M.Sc. and Ph.D. in Forest Industry Machinery and Administration from the University of Istanbul, Turkey and Forest Products Engineering degree (B.S) from Istanbul University, Turkey. She has over 60 publications including conference talks, seminars, and numerous original research papers. She gives lectures on production planning, quality control, furniture industry and forest products related topics at the Düzce University. She has research interest in plant layout and optimization, production management, maintenance management, surface roughness, heat treatment, varnishes, surface properties of wood. She also is in the editorial or advisory board of diverse scientific journals.

Kucuk Huseyin Koc

K.Huseyin KOC is a Professor Chair in Istanbul University Faculty of Forestry, Forest Industrial Engineering Department. He is currently working as the Head of Forest Industry Machinery and Administration Unit. He has over 100 publications on Quality Control, Certification, Education of Forest Industrial Engineering. He has research interest in plant layout and optimization, production management, maintenance management, surface roughness, heat treatment, varnishes, surface properties of wood. He also is in the editorial or advisory board of diverse scientific journals.