Wooden Building Against Concrete and Steel: What Do Municipal Professionals Think?

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For "Buildings Like Trees, Cities Like Forests"

(as William McDonough & Michael Braungart say)

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1. INTRODUCTION

Housing has been one of the basic needs since the existence of humanity. To meet this need, structures have been built with many techniques and applications and new systems are still being developed (1).

Urbanization and its damaging environmental impacts are accepted as a fact that needs precautionary measures all over the world. The construction sector is the sector that creates a large part of the quality of life. Buildings and structures; affect nature, functioning, visuality in cities and rural areas. The constantly developing construction industry can reveal more harmful technologies day by day. In order to prevent this, we come across buildings that are sustainable, ecological, green and environmentally friendly (2).

Building technology is also in development and transformation due to the effects of environmental concepts such as renewable energy sources, greenhouse gases, global warming. In this context, besides the measures to be taken during design, materials and construction technologies used in building production are important factors (3).

Considering that buildings and settlements are responsible for 40 % of the main greenhouse gas CO_2 emission that causes global warming; architects, engineers, city planners and, most importantly government officials who set the regulations, seem to have a great responsibility.

Increasing green potential, reducing revisions, and determining the economic viability of all green elements of the building at the beginning of the design process is a critical decision (2). Local government actors (e.g. municipalities) also have the authority to oversee and approve zoning and land use plans.

2.RESEARCH OBJECTIVES AND METHODOLOGY

2.1. The Aim of the Research

The aim of this research is to analyse the perceptions, awareness and willingness of professionals working in the municipality on wooden materials and wooden buildings and the barriers for wooden buildings. For this purpose, professional personals (civil engineers, architects, urban planners, geomatics engineers-geological engineers, building inspector) working in the Malatya metropolitan municipality, Battalgazi municipality and Yesilyurt municipality were selected as target populations. Especially in Europe and the USA, there are scientific papers analysing the perceptions and thoughts of the public and various occupational groups about some impacts and properties of wooden buildings (4-14). In Turkey, the number of scientific papers about the perception on the wooden buildings are scarce. This research is expected to make significant contributions to the scientific literature, in terms of both content and scope.

2.2. Survey Objectives

The research was designed to learn the thoughts of professionals working in the municipality about wooden building materials and wooden buildings. The questionnaire designed for the research consists of 6 parts.

- In the first part, gender, education, age, job and experience are asked.

- In the second part, the opinions of the participants about the characteristics of a building material are evaluated. This section contains 14 likert-type questions.
- The third part is designed for thoughts about the performance of wood materials compared to other building materials (concrete, steel, etc.), and consists of 14 likert-type questions.
- The 4th section, which analyses which material (or combination of materials) is preferred in different building types, consists of 9 multiple-choice questions.
- Chapter 5 is designed to learn what the participants think about the main barriers to the use of wood in buildings, and contains 8 multiple-choice questions.
- Section 6 of the questionnaire assesses perceptions about the environmental and health impacts of wood materials and wood buildings, and contains 16 likert-type questions.

2.3. Pilot Survey and Questionnaire

In order to achieve the purpose of the research, the following steps were followed for the creation of the questionnaire used in data collection:

- A literature survey was conducted on wood construction materials and wooden buildings and scientific articles were read on the subject.
- Face-to-face interviews were conducted to learn and evaluate the opinions of professionals working in 3 different municipalities in Malatya.

- The questionnaire was designed using the information obtained from the scientific studies and interviews in the literature.
- For the pilot research, the draft questionnaire was implemented to professionals working in the Metropolitan Municipality of Malatya.
- The pilot group consists of 2 civil engineers, 2 architects, 2 urban planners and 1 geomatics engineer.
- Taking into account the results of the pilot study, the survey questions were revised and the final questionnaire was designed.

Interviews were held with professionals (civil engineers, architects, urban planners, geomatics engineers-geological engineers, building inspector) working in 3 different municipalities in Malatya. Interviews were held in the participants ' office, face to face and in June 2020.

2.4. Data Analysis

Statistical analyses of questionnaire sections were conducted by using the software SPSS (version 22). All statistical analysis used $\alpha = 0.05$ for significance levels. Relations between statements of the questionnaire and gender and profession were analysed using the Independent-Samples T test and the One-Way ANOVA test.

3. FINDINGS

3.1. Reliability Analysis

The reliability value is scaled with numbers between 0 and 1. The reliability level increases as these scaled values approach 1. Cronbach's interpretation of Alpha values (α) is as follows (15):

- No reliability if $0.00 \leq \alpha \leq 0.40$
- Reliability is low if $0.40 \leq \alpha \leq 0.60$
- Reliability is good if $0.60 \leq \alpha \leq 0.80$
- Reliability is quite high if $0.80 \leq \alpha \leq 1.00$.

In total, the reliability analysis of the survey was performed for 61 participants and Cronbach's Alpha value was calculated as 0.801. The results of the reliability analysis calculated for each part of the questionnaire are as follows:

- For part 2 of the questionnaire, the Cronbach Alpha value is 0.878.
- For part 3 of the questionnaire, the Cronbach Alpha value is 0.796.
- For part 4 of the questionnaire, the Cronbach Alpha value is 0.760.
- For part 5 of the questionnaire, the Cronbach Alpha value is 0.911.
- For part 6 of the questionnaire, the Cronbach Alpha value is 0.904.

Based on the results of Cronbach's Alpha values, the responds to the questions in the questionnaire can be considered to be highly reliable.

3.2. Respondent Profile

The demographics of the respondents are shown in tables 3.1-3.5. 60.7% (n=37) of the respondents are male and 39.3% (n=24) are female. While 9.8% (n=6) of the respondents are associate degree, 67.2% (n=41) are Bachelor's degree and 23% (n=14) are postgraduate graduates. While 26.2% (n=16) of the respondents were between the ages of 18-29, 67.2% (n=41) were between the ages of 30-45, 6.6% (n=4) were aged 46 and older.

In terms of their roles in the municipality, 27.9% (n=17) of the participants are civil engineers, 16.4% (n=10) are architects, 24.6% (n=15) are urban planners, 19.7% (n=12) are geomatics engineers/geological engineers and 11.5% (n=7) are building inspectors. Of the respondents, 31.1% had experience of 5 years or less, 52.5% between 6-15 years, and 16.4% had experience of 16 years or more.

Table 3.1. Respondents' gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	24	39,3	39,3	39,3
	Male	37	60,7	60,7	100,0
	Total	61	100,0	100,0	

Table 3.2. Respondents' education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Associate degree	6	9,8	9,8	9,8
	Bachelor's degree	41	67,2	67,2	77,0
	Master/PhD	14	23,0	23,0	100,0
	Total	61	100,0	100,0	

Table 3.3. Respondents' age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-29	16	26,2	26,2	26,2
	30-45	41	67,2	67,2	93,4
	46+	4	6,6	6,6	100,0
	Total	61	100,0	100,0	

Table 3.4. Respondents' role in the municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Civil engineer	17	27,9	27,9	27,9
	Architect	10	16,4	16,4	44,3
	Urban planner	15	24,6	24,6	68,9
	Geomatics engineer / Geological engineer	12	19,7	19,7	88,5
	Building inspection	7	11,5	11,5	100,0
	Total	61	100,0	100,0	

Table 3.5. Professional experience of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 6 years	19	31,1	31,1	31,1
	6-15 years	32	52,5	52,5	83,6
	16 years and more	10	16,4	16,4	100,0
	Total	61	100,0	100,0	

3.3. Statistical Analysis of Questionnaire Sections

3.3.1. Importance of The Characteristics for a Construction Material

In this section (second part) of questionnaire, the characteristic features expected to be in a building material are indicated. Respondents were asked to choose their level of importance for each of these characteristics.

The highest response given to questions is 5, while the lowest response is 1. For this reason, the comment of the mean was conducted with the formula below.

Response level	Intervals for the level of response		
1 =	1.00-1.80	=	Not important
2 =	1.81-2.60	=	Less important
3 =	2.61-3.40	=	Important
4 =	3.41-4.20	=	Very important
5 =	4.21-5.00	=	Extremely important

This section contains 14 likert-type questions (14). The responses of the respondents to 14 different questions are shown in table 3.6-3.20.

Table 3.6. Importance of the characteristics for a construction material: **Compatibility with the building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	1	1,6	1,7	1,7
	Important	12	19,7	20,3	22,0
	Very important	23	37,7	39,0	61,0
	Extremely important	23	37,7	39,0	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.7. Importance of the characteristics for a construction material: **Mechanical Performance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	2	3,3	3,4	3,4
	Important	12	19,7	20,7	24,1
	Very important	22	36,1	37,9	62,1
	Extremely important	22	36,1	37,9	100,0
	Total	58	95,1	100,0	
Missing	System	3	4,9		
Total		61	100,0		

Table 3.8. Importance of the characteristics for a construction material: **Economic Properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	1	1,6	1,7	1,7
	Less important	2	3,3	3,3	5,0
	Important	23	37,7	38,3	43,3
	Very important	21	34,4	35,0	78,3
	Extremely important	13	21,3	21,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.9. Importance of the characteristics for a construction material: **Fire Properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	1	1,6	1,7	1,7
	Important	9	14,8	15,0	16,7
	Very important	18	29,5	30,0	46,7
	Extremely important	32	52,5	53,3	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.10. Importance of the characteristics for a construction material: **Availability in the Market**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	3	4,9	5,0	5,0
	Important	23	37,7	38,3	43,3
	Very important	13	21,3	21,7	65,0
	Extremely important	21	34,4	35,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.11. Importance of the characteristics for a construction material: **Earthquake properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Important	6	9,8	9,8	9,8
	Very important	14	23,0	23,0	32,8
	Extremely important	41	67,2	67,2	100,0
	Total	61	100,0	100,0	

Table 3.12. Importance of the characteristics for a construction material: **Availability of design tools and resources**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	1	1,6	1,6	1,6
	Important	20	32,8	32,8	34,4
	Very important	16	26,2	26,2	60,7
	Extremely important	24	39,3	39,3	100,0
	Total	61	100,0	100,0	

Table 3.13. Importance of the characteristics for a construction material: **Moisture properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	3	4,9	5,0	5,0
	Important	16	26,2	26,7	31,7
	Very important	23	37,7	38,3	70,0
	Extremely important	18	29,5	30,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.14. Importance of the characteristics for a construction material: **Maintenance properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	2	3,3	3,3	3,3
	Important	17	27,9	28,3	31,7
	Very important	26	42,6	43,3	75,0
	Extremely important	15	24,6	25,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.15. Importance of the characteristics for a construction material: **Aesthetics properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less important	8	13,1	13,3	13,3
	Important	16	26,2	26,7	40,0
	Very important	21	34,4	35,0	75,0
	Extremely important	15	24,6	25,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.16. Importance of the characteristics for a construction material: **Environmental impacts**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	1	1,6	1,7	1,7
	Less important	4	6,6	6,8	8,5
	Important	19	31,1	32,2	40,7
	Very important	19	31,1	32,2	72,9
	Extremely important	16	26,2	27,1	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.17. Importance of the characteristics for a construction material: **Vibration properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	1	1,6	1,7	1,7
	Less important	4	6,6	6,8	8,5
	Important	12	19,7	20,3	28,8
	Very important	22	36,1	37,3	66,1
	Extremely important	20	32,8	33,9	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.18. Importance of the characteristics for a construction material: **Acoustic properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	4	6,6	6,7	6,7
	Less important	11	18,0	18,3	25,0
	Important	18	29,5	30,0	55,0
	Very important	14	23,0	23,3	78,3
	Extremely important	13	21,3	21,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.19. Importance of the characteristics for a construction material: **Carbon footprint**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	1	1,6	1,7	1,7
	Less important	7	11,5	11,9	13,6
	Important	24	39,3	40,7	54,2
	Very important	17	27,9	28,8	83,1
	Extremely important	10	16,4	16,9	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.20. Means for Responses to The Statements in The Second Part of the Questionnaire (1=not important, 5=extremely important)

	Mean	Std. Deviation	N
Importance of the characteristics for a construction material: Compatibility with the building	**4,18**	,789	56
Importance of the characteristics for a construction material: Mechanical performance	**4,11**	,846	56
Importance of the characteristics for a construction material: Economic properties	**3,70**	,872	56
Importance of the characteristics for a construction material: Fire properties	**4,36**	,796	56
Importance of the characteristics for a construction material: Availability in the market	**3,86**	,962	56
Importance of the characteristics for a construction material: Earthquake properties	**4,59**	,654	56
Importance of the characteristics for a construction material: Availability of design tools and resources	**4,02**	,884	56
Importance of the characteristics for a construction material: Moisture properties	**3,95**	,883	56
Importance of the characteristics for a construction material: Maintenance properties	**3,91**	,815	56
Importance of the characteristics for a construction material: Aesthetics properties	**3,66**	,996	56
Importance of the characteristics for a construction material: Environmental impacts	**3,79**	,967	56
Importance of the characteristics for a construction material: Vibration properties	**3,96**	,972	56
Importance of the characteristics for a construction material: Acoustic properties	**3,34**	1,180	56
Importance of the characteristics for a construction material: Carbon footprint	**3,50**	,934	56

The characteristics expected to have of a construction material were analyzed in term of gender, and statistical values are shown in Table 3.21.

The most important characteristics for female are, respectively, earthquake properties (m=4,54), fire properties (m=4,33), compatibility with the building (m=4,26), mechanical properties (m=4,14) and availability of design tools and resources (m=4,13).

The most important characteristics for male are, respectively, earthquake properties (m=4,59), fire properties (m=4,36), compatibility with the building (m=4,08), mechanical properties (m=4,08) and availability of design tools and resources (m=3,97).

Table 3.21. Group statistics between responses to the statements in the second part of the questionnaire and gender (1=not important, 5=extremely important)

		N	Mean	Std. Deviation	Std. Error Mean
Importance of the characteristics for a construction material: Compatibility with the building	Female	23	**4,26**	,810	,169
	Male	36	**4,08**	,806	,134
Importance of the characteristics for a construction material: Mechanical performance	Female	22	**4,14**	,834	,178
	Male	36	**4,08**	,874	,146
Importance of the characteristics for a construction material: Economic properties	Female	24	**3,92**	,776	,158
	Male	36	**3,58**	,967	,161
Importance of the characteristics for a construction material: Fire properties	Female	24	**4,33**	,816	,167
	Male	36	**4,36**	,798	,133
Importance of the characteristics for a construction material: Availability in the market	Female	24	**4,04**	,955	,195
	Male	36	**3,75**	,967	,161

Importance of the characteristics for a construction material: Earthquake properties	Female	24	**4,54**	,721	,147
	Male	37	**4,59**	,644	,106
Importance of the characteristics for a construction material: Availability of design tools and resources	Female	24	**4,13**	,900	,184
	Male	37	**3,97**	,897	,147
Importance of the characteristics for a construction material: Moisture properties	Female	24	**4,08**	,830	,169
	Male	36	**3,83**	,910	,152
Importance of the characteristics for a construction material: Maintenance properties	Female	24	**4,00**	,885	,181
	Male	36	**3,83**	,775	,129
Importance of the characteristics for a construction material: Aesthetics properties	Female	24	**4,04**	,908	,185
	Male	36	**3,50**	1,000	,167
Importance of the characteristics for a construction material: Environmental impacts	Female	23	**3,96**	,976	,204
	Male	36	**3,64**	,990	,165
Importance of the characteristics for a construction material: Vibration properties	Female	23	**4,04**	,976	,204
	Male	36	**3,89**	1,008	,168
Importance of the characteristics for a construction material: Acoustic properties	Female	24	**3,71**	1,197	,244
	Male	36	**3,11**	1,166	,194
Importance of the characteristics for a construction material: Carbon footprint	Female	23	**3,65**	1,071	,223
	Male	36	**3,36**	,899	,150

The Independent-Samples T test was applied to analyze whether there were significant differences between group means in terms of gender. According to homogeneity test, homogeneity has been provided for all statements in the second part of questionnaire (Table 3.22).

According to the Independent-Samples T test results, there are only statistically significant difference between gender and aesthetic properties based on responses to statements in the second part of the questionnaire ($p<0.05$).

Table 3.22. Independent-Samples T test results between responses to the statements in the second part of the questionnaire and gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Sig. (2-tailed)	Mean Difference
Importance of the characteristics for a construction material: Compatibility with the building	Equal variances assumed	,601	,442	,823	,414	,178
	Equal variances not assumed			,823	,415	,178
Importance of the characteristics for a construction material: Mechanical performance	Equal variances assumed	,104	,748	,228	,820	,053
	Equal variances not assumed			,231	,819	,053
Importance of the characteristics for a construction material: Economic properties	Equal variances assumed	2,215	,142	1,411	,163	,333
	Equal variances not assumed			1,475	,146	,333
Importance of the characteristics for a construction material: Fire properties	Equal variances assumed	,219	,642	-,131	,896	-,028
	Equal variances not assumed			-,130	,897	-,028
Importance of the characteristics for a construction material: Availability in the market	Equal variances assumed	,167	,684	1,150	,255	,292
	Equal variances not assumed			1,153	,254	,292
Importance of the characteristics for a construction material: Earthquake properties	Equal variances assumed	,505	,480	-,299	,766	-,053
	Equal variances not assumed			-,292	,772	-,053
Importance of the characteristics for a construction material: Availability of design tools and resources	Equal variances assumed	,296	,589	,646	,521	,152
	Equal variances not assumed			,645	,522	,152
Importance of the characteristics for a construction material: Moisture properties	Equal variances assumed	,068	,795	1,079	,285	,250
	Equal variances not assumed			1,100	,277	,250
Importance of the characteristics for a construction material: Maintenance properties	Equal variances assumed	,173	,679	,771	,444	,167
	Equal variances not assumed			,751	,457	,167
Importance of the characteristics for a construction material: Aesthetics properties	Equal variances assumed	1,139	,290	2,131	**,037**	,542
	Equal variances not assumed			2,173	**,034**	,542
Importance of the characteristics for a construction material: Environmental impacts	Equal variances assumed	,033	,856	1,208	,232	,318
	Equal variances not assumed			1,212	,231	,318
Importance of the characteristics for a construction material: Vibration properties	Equal variances assumed	,010	,920	,582	,563	,155
	Equal variances not assumed			,586	,561	,155
Importance of the characteristics for a construction material: Acoustic properties	Equal variances assumed	,836	,364	1,924	,059	,597
	Equal variances not assumed			1,913	,062	,597
Importance of the characteristics for a construction material: Carbon footprint	Equal variances assumed	,901	,347	1,125	,265	,291
	Equal variances not assumed			1,082	,285	,291

The characteristics expected to have of a construction material were analyzed in term of professions, and statistical values are shown in Table 3.23.

Table 3.23. Descriptive statistic results between responses to the statements in the second part of the questionnaire and professions (1=not important, 5=extremely important)

		N	**Mean**	Std. Deviation	Std. Error
Importance of the characteristics for a construction material: Compatibility with the building	Civil engineer	16	**4,31**	,704	,176
	Architect	9	**4,22**	,972	,324
	Urban planner	15	**4,07**	,884	,228
	Geomatics engineer / Geological	12	**3,83**	,835	,241
	Building inspector	7	**4,43**	,535	,202
	Total	59	**4,15**	,805	,105
Importance of the characteristics for a construction material: Mechanical performance	Civil engineer	15	**4,27**	,704	,182
	Architect	9	**3,89**	1,054	,351
	Urban planner	15	**3,73**	,961	,248
	Geomatics engineer / Geological	12	**4,33**	,651	,188
	Building inspector	7	**4,43**	,787	,297
	Total	58	**4,10**	,852	,112
Importance of the characteristics for a construction material: Economic properties	Civil engineer	16	**3,94**	,998	,249
	Architect	10	**3,40**	,843	,267
	Urban planner	15	**3,53**	,743	,192
	Geomatics engineer / Geological	12	**3,67**	,985	,284
	Building inspector	7	**4,14**	,900	,340
	Total	60	**3,72**	,904	,117

Importance of the characteristics for a construction material: Fire properties	Civil engineer	16	**4,38**	,806	,202
	Architect	10	**4,30**	,823	,260
	Urban planner	15	**4,40**	,828	,214
	Geomatics engineer / Geological	12	**4,33**	,492	,142
	Building inspector	7	**4,29**	1,254	,474
	Total	60	**4,35**	,799	,103
Importance of the characteristics for a construction material: Availability in the market	Civil engineer	16	**4,25**	,856	,214
	Architect	10	**3,40**	,966	,306
	Urban planner	15	**3,80**	1,014	,262
	Geomatics engineer / Geological	12	**3,67**	,888	,256
	Building inspector	7	**4,14**	1,069	,404
	Total	60	**3,87**	,965	,125
Importance of the characteristics for a construction material: Earthquake properties	Civil engineer	17	**4,59**	,712	,173
	Architect	10	**4,50**	,707	,224
	Urban planner	15	**4,60**	,632	,163
	Geomatics engineer / Geological	12	**4,58**	,669	,193
	Building inspector	7	**4,57**	,787	,297
	Total	61	**4,57**	,670	,086
Importance of the characteristics for a construction material: Availability of design tools and resources	Civil engineer	17	**4,29**	,849	,206
	Architect	10	**4,30**	,823	,260
	Urban planner	15	**3,87**	,915	,236
	Geomatics engineer / Geological	12	**3,58**	,793	,229
	Building inspector	7	**4,14**	1,069	,404
	Total	61	**4,03**	,894	,114
Importance of the characteristics for a construction material: Moisture properties	Civil engineer	16	**4,13**	,719	,180
	Architect	10	**3,90**	,876	,277
	Urban planner	15	**3,60**	,986	,254
	Geomatics engineer / Geological	12	**4,08**	,669	,193
	Building inspector	7	**4,00**	1,291	,488
	Total	60	**3,93**	,880	,114

Importance of the characteristics for a construction material: Maintenance properties	Civil engineer	16	**3,94**	,680	,170
	Architect	10	**3,70**	,949	,300
	Urban planner	15	**3,93**	,961	,248
	Geomatics engineer / Geological	12	**3,83**	,577	,167
	Building inspector	7	**4,14**	1,069	,404
	Total	60	**3,90**	,817	,105
Importance of the characteristics for a construction material: Aesthetics properties	Civil engineer	16	**3,69**	1,014	,254
	Architect	10	**4,10**	,876	,277
	Urban planner	15	**3,67**	1,113	,287
	Geomatics engineer / Geological	12	**3,50**	,674	,195
	Building inspector	7	**3,71**	1,380	,522
	Total	60	**3,72**	,993	,128
Importance of the characteristics for a construction material: Environmental impacts	Civil engineer	16	**3,81**	1,047	,262
	Architect	10	**3,50**	,972	,307
	Urban planner	15	**3,73**	,961	,248
	Geomatics engineer / Geological	12	**4,08**	,669	,193
	Building inspector	6	**3,50**	1,517	,619
	Total	59	**3,76**	,989	,129
Importance of the characteristics for a construction material: Vibration properties	Civil engineer	15	**4,33**	,617	,159
	Architect	10	**3,60**	,966	,306
	Urban planner	15	**3,67**	,976	,252
	Geomatics engineer / Geological	12	**4,00**	1,206	,348
	Building inspector	7	**4,14**	1,215	,459
	Total	59	**3,95**	,990	,129
Importance of the characteristics for a construction material: Acoustic properties	Civil engineer	16	**3,69**	1,195	,299
	Architect	10	**3,20**	1,033	,327
	Urban planner	15	**3,27**	1,033	,267
	Geomatics engineer / Geological	12	**3,08**	1,379	,398
	Building inspector	7	**3,43**	1,618	,612
	Total	60	**3,35**	1,205	,156

Importance of the characteristics for a construction material: Carbon footprint	Civil engineer	16	**3,63**	,957	,239
	Architect	10	**3,20**	1,033	,327
	Urban planner	15	**3,53**	,915	,236
	Geomatics engineer / Geological	12	**3,50**	1,087	,314
	Building inspector	6	**3,33**	1,033	,422
	Total	59	**3,47**	,971	,126

One-Way ANOVA test was applied to analyze whether there were significant differences between group means in terms of profession. Homogeneity test results for statements in the second part of questionnaire are shown below (Table 3.24).

Table 3.24. Test of homogeneity of variances for One-Way ANOVA test

	Levene Statistic	df1	df2	Sig.
Importance of the characteristics for a construction material: Compatibility with the building	,943	4	54	,446
Importance of the characteristics for a construction material: Mechanical performance	1,099	4	53	,367
Importance of the characteristics for a construction material: Economic properties	,332	4	55	,855
Importance of the characteristics for a construction material: Fire properties	2,834	4	55	,033
Importance of the characteristics for a construction material: Availability in the market	,620	4	55	,650
Importance of the characteristics for a construction material: Earthquake properties	,094	4	56	,984
Importance of the characteristics for a construction material: Availability of design tools and resources	,745	4	56	,565

Importance of the characteristics for a construction material: Moisture properties	3,282	4	55	,017
Importance of the characteristics for a construction material: Maintenance properties	2,577	4	55	,047
Importance of the characteristics for a construction material: Aesthetics properties	1,915	4	55	,121
Importance of the characteristics for a construction material: Environmental impacts	1,988	4	54	,109
Importance of the characteristics for a construction material: Vibration properties	,986	4	54	,423
Importance of the characteristics for a construction material: Acoustic properties	,839	4	55	,506
Importance of the characteristics for a construction material: Carbon footprint	,270	4	54	,896

According to the One-Way ANOVA test results, there is no statistically significant difference between responses to statements in this part of questionnaire and professions (Table 3.25).

Table 3.25. One-Way ANOVA test results for relation between responses to the statements in the second part of the questionnaire and professions

		Sum of Squares	df	Mean Square	F	Sig.
Importance of the characteristics for a construction material: Compatibility with the building	Between Groups	2,320	4	,580	,887	,478
	Within Groups	35,307	54	,654		
	Total	37,627	58			
Importance of the characteristics for a construction material: Mechanical performance	Between Groups	4,243	4	1,061	1,514	,211
	Within Groups	37,137	53	,701		
	Total	41,379	57			

Importance of the characteristics for a construction material: Economic properties	Between Groups	3,589	4	,897	1,107	,363
	Within Groups	44,595	55	,811		
	Total	48,183	59			
Importance of the characteristics for a construction material: Fire properties	Between Groups	,105	4	,026	,038	,997
	Within Groups	37,545	55	,683		
	Total	37,650	59			
Importance of the characteristics for a construction material: Availability in the market	Between Groups	5,610	4	1,402	1,564	,197
	Within Groups	49,324	55	,897		
	Total	54,933	59			
Importance of the characteristics for a construction material: Earthquake properties	Between Groups	,069	4	,017	,036	,997
	Within Groups	26,849	56	,479		
	Total	26,918	60			
Importance of the characteristics for a construction material: Availability of design tools and resources	Between Groups	4,798	4	1,199	1,557	,198
	Within Groups	43,137	56	,770		
	Total	47,934	60			
Importance of the characteristics for a construction material: Moisture properties	Between Groups	2,567	4	,642	,818	,520
	Within Groups	43,167	55	,785		
	Total	45,733	59			
Importance of the characteristics for a construction material: Maintenance properties	Between Groups	,905	4	,226	,323	,861
	Within Groups	38,495	55	,700		
	Total	39,400	59			
Importance of the characteristics for a construction material: Aesthetics properties	Between Groups	2,084	4	,521	,511	,728
	Within Groups	56,099	55	1,020		
	Total	58,183	59			
Importance of the characteristics for a construction material: Environmental impacts	Between Groups	2,390	4	,598	,594	,668
	Within Groups	54,288	54	1,005		
	Total	56,678	58			

Importance of the characteristics for a construction material: Vibration properties	Between Groups	4,924	4	1,231	1,280	,289
	Within Groups	51,924	54	,962		
	Total	56,847	58			
Importance of the characteristics for a construction material: Acoustic properties	Between Groups	3,048	4	,762	,507	,730
	Within Groups	82,602	55	1,502		
	Total	85,650	59			
Importance of the characteristics for a construction material: Carbon footprint	Between Groups	1,295	4	,324	,327	,858
	Within Groups	53,417	54	,989		
	Total	54,712	58			

3.3.2. Performance of Wood Compared to Other Building Materials (Concrete, Steel)

In this part of the questionnaire; compared to other building materials (concrete, steel), the performance of wood was analyzed.

The highest response given to questions is 4, while the lowest response is 0. For this reason, the comment of the mean was conducted with the formula below.

Response level	**Intervals for the level of response**		
0 =	0.00-0.80	=	Don’t know
1 =	0.81-1.60	=	Worse
2 =	1.61-2.40	=	Relatively bad
3 =	2.41-3.20	=	Equal
4 =	3.21-4.00	=	Better

This section contains 14 likert-type questions (14). The responses of the respondents to 14 different statements are shown in tables 3.26-3.40.

Table 3.26. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Compatibility with the building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	1	1,6	1,7	1,7
	Worse	2	3,3	3,3	5,0
	Relatively bad	16	26,2	26,7	31,7
	Equal	17	27,9	28,3	60,0
	Better	24	39,3	40,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.27. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Mechanical performance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	4	6,6	6,8	6,8
	Worse	6	9,8	10,2	16,9
	Relatively bad	25	41,0	42,4	59,3
	Equal	14	23,0	23,7	83,1
	Better	10	16,4	16,9	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.28. Compared to other construction materials (Concrete or Steel)**, wood as a construction material is: Economic properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	3	4,9	5,1	5,1
	Worse	9	14,8	15,3	20,3
	Relatively bad	16	26,2	27,1	47,5
	Equal	13	21,3	22,0	69,5
	Better	18	29,5	30,5	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.29. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Fire properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	2	3,3	3,4	3,4
	Worse	34	55,7	57,6	61,0
	Relatively bad	9	14,8	15,3	76,3
	Equal	9	14,8	15,3	91,5
	Better	5	8,2	8,5	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.30. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Availability in the market**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	1	1,6	1,7	1,7
	Worse	9	14,8	15,3	16,9
	Relatively bad	19	31,1	32,2	49,2
	Equal	18	29,5	30,5	79,7
	Better	12	19,7	20,3	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.31. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Earthquake properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	1	1,6	1,7	1,7
	Worse	11	18,0	18,3	20,0
	Relatively bad	15	24,6	25,0	45,0
	Equal	12	19,7	20,0	65,0
	Better	21	34,4	35,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.32. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Availability of design tools and resources**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Worse	4	6,6	6,6	6,6
	Relatively bad	8	13,1	13,1	19,7
	Equal	23	37,7	37,7	57,4
	Better	26	42,6	42,6	100,0
	Total	61	100,0	100,0	

Table 3.33. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Moisture performance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Worse	16	26,2	26,7	26,7
	Relatively bad	20	32,8	33,3	60,0
	Equal	14	23,0	23,3	83,3
	Better	10	16,4	16,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.34. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Maintenance properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Worse	9	14,8	15,3	15,3
	Relatively bad	18	29,5	30,5	45,8
	Equal	12	19,7	20,3	66,1
	Better	20	32,8	33,9	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.35. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Aesthetic properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Relatively bad	4	6,6	6,8	6,8
	Equal	19	31,1	32,2	39,0
	Better	36	59,0	61,0	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.36. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Environmental impacts**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Relatively bad	9	14,8	15,3	15,3
	Equal	18	29,5	30,5	45,8
	Better	32	52,5	54,2	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.37. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Vibration properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	2	3,3	3,4	3,4
	Worse	10	16,4	16,9	20,3
	Relatively bad	19	31,1	32,2	52,5
	Equal	15	24,6	25,4	78,0
	Better	13	21,3	22,0	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.38. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Acoustic properties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	5	8,2	8,5	8,5
	Worse	6	9,8	10,2	18,6
	Relatively bad	15	24,6	25,4	44,1
	Equal	14	23,0	23,7	67,8
	Better	19	31,1	32,2	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.39. Compared to other construction materials (Concrete or Steel), **wood as a construction material is: Carbon footprint**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	5	8,2	8,5	8,5
	Worse	3	4,9	5,1	13,6
	Relatively bad	14	23,0	23,7	37,3
	Equal	7	11,5	11,9	49,2
	Better	30	49,2	50,8	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.40. Means for responses to the statements in the third part of the questionnaire (0=don't know, 4=better)

	Mean	Std. Deviation	N
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	**3,00**	1,009	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	**2,38**	1,071	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	**2,55**	1,235	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	**1,71**	1,074	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	**2,54**	1,061	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	**2,68**	1,177	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	**3,20**	,883	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	**2,32**	1,064	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	**2,79**	1,074	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	**3,54**	,631	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	**3,38**	,752	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	**2,50**	1,128	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	**2,59**	1,304	56
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	**2,89**	1,330	56

Compared to other building materials (concrete, steel), the performance of wood was analysed according to gender, and statistical values are shown in Table 3.41.

Table 3.41. Group statistics between responses to the statements in the third part of the questionnaire and gender (0=don't know, 4=better)

		N	Mean	Std. Deviation	Std. Error Mean
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	Female	24	**3,29**	1,042	,213
	Male	36	**2,83**	,910	,152
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	Female	23	**2,35**	1,152	,240
	Male	36	**2,33**	1,069	,178
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	Female	23	**2,70**	1,396	,291
	Male	36	**2,50**	1,108	,185
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	Female	23	**1,83**	1,029	,215
	Male	36	**1,58**	1,079	,180
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	Female	23	**2,48**	1,123	,234
	Male	36	**2,56**	,998	,166
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	Female	23	**2,91**	1,125	,235
	Male	37	**2,54**	1,216	,200
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	Female	24	**3,38**	,824	,168
	Male	37	**3,03**	,928	,152
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	Female	24	**2,38**	1,013	,207
	Male	36	**2,25**	1,079	,180
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	Female	24	**2,67**	1,129	,231
	Male	35	**2,77**	1,087	,184
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	Female	24	**3,71**	,550	,112
	Male	35	**3,43**	,655	,111
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	Female	24	**3,46**	,721	,147
	Male	35	**3,34**	,765	,129
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	Female	24	**2,29**	1,042	,213
	Male	35	**2,57**	1,170	,198
	Female	24	**2,46**	1,414	,289

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	Male	35	**2,71**	1,178	,199
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	Female	24	**3,21**	1,179	,241
	Male	35	**2,71**	1,384	,234

The Independent-Samples T test was applied to analyze whether there were significant differences between group means in terms of gender. According to homogeneity test, homogeneity has been provided for all statements in the third part of questionnaire (Table 3.42).

According to the Independent-Samples T test results, there is no statistically significant difference between gender and the statements in the questionnaire.

Table 3.42. Independent-Samples T test results between responses to the statements in the third part of the questionnaire and gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Sig. (2-tailed)	Mean Difference
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	Equal variances	,224	,638	1,803	,077	,458
	Equal variances not			1,755	,086	,458
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	Equal variances	,134	,716	,049	,961	,014
	Equal variances not			,048	,962	,014
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	Equal variances	2,915	,093	,597	,553	,196
	Equal variances not			,568	,574	,196
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	Equal variances	,343	,560	,858	,395	,243
	Equal variances not			,867	,390	,243
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	Equal variances	,295	,589	-,276	,783	-,077
	Equal variances not			-,269	,789	-,077
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	Equal variances	,400	,530	1,187	,240	,373
	Equal variances not			1,209	,232	,373

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	Equal variances	,002	,964	1,494	,141	,348
	Equal variances not			1,532	,131	,348
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	Equal variances	,661	,420	,450	,654	,125
	Equal variances not			,456	,650	,125
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	Equal variances	,162	,689	-,358	,722	-,105
	Equal variances not			-,355	,724	-,105
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	Equal variances	3,781	,057	1,718	,091	,280
	Equal variances not			1,775	,082	,280
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	Equal variances	,250	,619	,583	,562	,115
	Equal variances not			,589	,558	,115
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	Equal variances	1,282	,262	-,942	,350	-,280
	Equal variances not			-,963	,340	-,280
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	Equal variances	1,820	,183	-,756	,453	-,256
	Equal variances not			-,730	,469	-,256
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	Equal variances	1,245	,269	1,428	,159	,494
	Equal variances not			1,472	,147	,494

Compared to other building materials (concrete, steel), the performance of wood was analysed in term of professions, and statistical values are shown in Table 3.43.

Table 3.43. Descriptive statistic results between responses to the statements in the third part of the questionnaire and professions (0=Don't know, 4=Better)

		N	Mean	Std. Deviation	Std. Error
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	Civil engineer	17	**2,53**	1,068	,259
	Architect	9	**3,22**	,972	,324
	Urban planner	15	**3,13**	,834	,215
	Geomatics engineer / Geological engineer	12	**3,25**	1,055	,305

	Building inspector	7	**3,29**	,756	,286
	Total	60	**3,02**	,983	,127
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	Civil engineer	16	**2,31**	1,014	,254
	Architect	10	**2,20**	1,398	,442
	Urban planner	15	**2,33**	1,047	,270
	Geomatics engineer / Geological engineer	12	**2,33**	1,231	,355
	Building inspector	6	**2,67**	,816	,333
	Total	59	**2,34**	1,092	,142
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	Civil engineer	16	**2,50**	1,366	,342
	Architect	10	**2,50**	1,354	,428
	Urban planner	15	**2,60**	1,298	,335
	Geomatics engineer / Geological engineer	12	**2,58**	1,084	,313
	Building inspector	6	**2,83**	,983	,401
	Total	59	**2,58**	1,221	,159
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	Civil engineer	16	**1,56**	1,094	,273
	Architect	10	**1,50**	,707	,224
	Urban planner	15	**1,87**	1,246	,322
	Geomatics engineer / Geological engineer	12	**1,42**	,900	,260
	Building inspector	6	**2,33**	1,211	,494
	Total	59	**1,68**	1,058	,138
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	Civil engineer	15	**2,33**	1,234	,319
	Architect	10	**2,60**	1,174	,371
	Urban planner	15	**2,67**	,976	,252
	Geomatics engineer / Geological engineer	12	**2,33**	,888	,256
	Building inspector	7	**2,86**	,900	,340
	Total	59	**2,53**	1,040	,135
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	Civil engineer	17	**2,59**	1,176	,285
	Architect	10	**2,40**	1,350	,427
	Urban planner	15	**3,20**	1,146	,296
	Geomatics engineer / Geological engineer	12	**2,33**	1,231	,355
	Building inspector	6	**2,83**	,753	,307

	Total	60	**2,68**	1,186	,153
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	Civil engineer	17	**2,59**	,870	,211
	Architect	10	**3,40**	,699	,221
	Urban planner	15	**3,47**	,834	,215
	Geomatics engineer / Geological engineer	12	**3,33**	,985	,284
	Building inspector	7	**3,29**	,756	,286
	Total	61	**3,16**	,898	,115
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	Civil engineer	16	**2,13**	1,025	,256
	Architect	10	**1,90**	,568	,180
	Urban planner	15	**2,73**	1,100	,284
	Geomatics engineer / Geological engineer	12	**2,50**	1,168	,337
	Building inspector	7	**2,00**	1,155	,436
	Total	60	**2,30**	1,046	,135
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	Civil engineer	15	**2,60**	1,056	,273
	Architect	10	**2,60**	,966	,306
	Urban planner	15	**2,93**	1,163	,300
	Geomatics engineer / Geological engineer	12	**2,83**	1,193	,345
	Building inspector	7	**2,57**	1,272	,481
	Total	59	**2,73**	1,096	,143
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	Civil engineer	15	**3,47**	,743	,192
	Architect	10	**3,70**	,483	,153
	Urban planner	15	**3,47**	,743	,192
	Geomatics engineer / Geological engineer	12	**3,58**	,515	,149
	Building inspector	7	**3,57**	,535	,202
	Total	59	**3,54**	,625	,081
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	Civil engineer	15	**3,13**	,743	,192
	Architect	10	**3,80**	,422	,133
	Urban planner	15	**3,40**	,737	,190
	Geomatics engineer / Geological engineer	12	**3,33**	,888	,256
	Building inspector	7	**3,43**	,787	,297
	Total	59	**3,39**	,743	,097

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	Civil engineer	15	**2,27**	1,163	,300
	Architect	10	**2,40**	,966	,306
	Urban planner	15	**2,47**	1,125	,291
	Geomatics engineer / Geological engineer	12	**2,67**	1,231	,355
	Building inspector	7	**2,57**	1,272	,481
	Total	59	**2,46**	1,119	,146
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	Civil engineer	15	**2,40**	1,298	,335
	Architect	10	**3,10**	1,449	,458
	Urban planner	15	**2,33**	1,234	,319
	Geomatics engineer / Geological engineer	12	**2,83**	1,193	,345
	Building inspector	7	**2,57**	1,272	,481
	Total	59	**2,61**	1,273	,166
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	Civil engineer	15	**2,73**	1,163	,300
	Architect	10	**2,70**	1,767	,559
	Urban planner	15	**3,13**	1,187	,307
	Geomatics engineer / Geological engineer	12	**3,08**	1,311	,379
	Building inspector	7	**2,86**	1,464	,553
	Total	59	**2,92**	1,317	,171

One-Way ANOVA test was applied to analyze whether there were significant differences between group means in terms of profession. Homogeneity test results for statements in the third part of questionnaire are shown below (Table 3.44).

Table 3.44. Test of homogeneity of variances for One-Way ANOVA test

	Levene Statistic	df1	df2	Sig.
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	,587	4	55	,673
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	,718	4	54	,584
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	,602	4	54	,663
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	1,684	4	54	,167
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	,866	4	54	,491
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	,991	4	55	,420
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	,285	4	56	,886
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	1,938	4	55	,117
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	,464	4	54	,762
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	1,806	4	54	,141
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	2,378	4	54	,063
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	,421	4	54	,793
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	,159	4	54	,958

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	1,528	4	54	,207

According to the One-Way ANOVA test results (Table 3.45), there are only statistically significant difference between professions and availability of design tools and resources based on responses to statements in the third part of the questionnaire ($p<0.05$).

Table 3.45. One-Way ANOVA test results for relation between responses to the statements in the third part of the questionnaire and professions

		Sum of Squares	df	Mean Square	F	Sig.
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	Between Groups	5,781	4	1,445	1,552	,200
	Within Groups	51,203	55	,931		
	Total	56,983	59			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	Between Groups	,850	4	,212	,168	,954
	Within Groups	68,371	54	1,266		
	Total	69,220	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	Between Groups	,557	4	,139	,088	,986
	Within Groups	85,850	54	1,590		
	Total	86,407	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	Between Groups	4,461	4	1,115	,997	,417
	Within Groups	60,421	54	1,119		
	Total	64,881	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	Between Groups	2,121	4	,530	,473	,756
	Within Groups	60,590	54	1,122		
	Total	62,712	58			

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	Between Groups	6,566	4	1,641	1,181	,329
	Within Groups	76,418	55	1,389		
	Total	82,983	59			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	Between Groups	8,014	4	2,004	2,781	**,035**
	Within Groups	40,346	56	,720		
	Total	48,361	60			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	Between Groups	6,017	4	1,504	1,412	,242
	Within Groups	58,583	55	1,065		
	Total	64,600	59			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	Between Groups	1,347	4	,337	,266	,898
	Within Groups	68,314	54	1,265		
	Total	69,661	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	Between Groups	,446	4	,112	,272	,895
	Within Groups	22,198	54	,411		
	Total	22,644	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	Between Groups	2,720	4	,680	1,252	,300
	Within Groups	29,314	54	,543		
	Total	32,034	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	Between Groups	1,196	4	,299	,226	,923
	Within Groups	71,448	54	1,323		
	Total	72,644	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	Between Groups	4,820	4	1,205	,729	,576
	Within Groups	89,214	54	1,652		
	Total	94,034	58			
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	Between Groups	2,036	4	,509	,279	,890
	Within Groups	98,540	54	1,825		
	Total	100,576	58			

In terms of responses to expression availability of design tools and resources, post-hoc test (Tukey HSD) was performed to determine the relations between professions. According to the Test results, there is statistically significant difference between civil engineers and city planners (Table 3.46).

Table 3.46. Multiple comparisons analysis results for responses to statement "*Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources*"

			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Civil engineer	Architect	-,812	,338	,130	-1,77	,14
		Urban planner	-,878*	,301	**,039**	-1,73	-,03
		Geomatics engineer / Geological engineer	-,745	,320	,151	-1,65	,16
		Building inspector	-,697	,381	,367	-1,77	,38
	Architect	Civil engineer	,812	,338	,130	-,14	1,77
		Urban planner	-,067	,347	1,000	-1,04	,91
		Geomatics engineer / Geological engineer	,067	,363	1,000	-,96	1,09
		Building inspector	,114	,418	,999	-1,06	1,29
	Urban planner	Civil engineer	,878*	,301	**,039**	,03	1,73
		Architect	,067	,347	1,000	-,91	1,04
		Geomatics engineer / Geological engineer	,133	,329	,994	-,79	1,06
		Building inspector	,181	,389	,990	-,91	1,28
		Civil engineer	,745	,320	,151	-,16	1,65

	Geomatics engineer / Geological engineer	Architect	-,067	,363	1,000	-1,09	,96
		Urban planner	-,133	,329	,994	-1,06	,79
		Building inspector	,048	,404	1,000	-1,09	1,19
	Building inspector	Civil engineer	,697	,381	,367	-,38	1,77
		Architect	-,114	,418	,999	-1,29	1,06
		Urban planner	-,181	,389	,990	-1,28	,91
		Geomatics engineer / Geological engineer	-,048	,404	1,000	-1,19	1,09

*. The mean difference is significant at the 0.05 level.

3.3.3. Preferred Building Material or Combination of Material for Construction Types

In this section of the questionnaire; respondents' preferences for materials or combinations of materials were explored according to building type.

This section contains 9 multiple-choice questions (14). The responses of the respondents to 9 different statements are shown in tables 3.47-3.55.

Table 3.47. Preferred building material or combination of material, **Family house**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	15	24,6	25,0	25,0
	Wood+Concrete	14	23,0	23,3	48,3
	Wood+Steel	16	26,2	26,7	75,0
	Steel	1	1,6	1,7	76,7
	Concrete	4	6,6	6,7	83,3
	Steel+Concrete	7	11,5	11,7	95,0
	Masonry	3	4,9	5,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.48. Preferred building material or combination of material, **Multi-storey house**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood+Concrete	1	1,6	1,7	1,7
	Wood+Steel	1	1,6	1,7	3,4
	Steel	5	8,2	8,5	11,9
	Concrete	23	37,7	39,0	50,8
	Steel+Concrete	29	47,5	49,2	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.49. Preferred building material or combination of material, **Commercial building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	1	1,6	1,8	1,8
	Wood+Steel	2	3,3	3,6	5,4
	Steel	16	26,2	28,6	33,9
	Concrete	17	27,9	30,4	64,3
	Steel+Concrete	20	32,8	35,7	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.50. Preferred building material or combination of material, **Educational building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood+Concrete	2	3,3	3,6	3,6
	Wood+Steel	4	6,6	7,1	10,7
	Steel	6	9,8	10,7	21,4
	Concrete	17	27,9	30,4	51,8
	Steel+Concrete	27	44,3	48,2	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.51. Preferred building material or combination of material, **Governmental building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood+Steel	3	4,9	5,4	5,4
	Steel	4	6,6	7,1	12,5
	Concrete	21	34,4	37,5	50,0
	Steel+Concrete	28	45,9	50,0	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.52. Preferred building material or combination of material, **Religious building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	5	8,2	8,9	8,9
	Wood+Concrete	5	8,2	8,9	17,9
	Wood+Steel	4	6,6	7,1	25,0
	Steel	2	3,3	3,6	28,6
	Concrete	14	23,0	25,0	53,6
	Steel+Concrete	24	39,3	42,9	96,4
	Masonry	2	3,3	3,6	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.53. Preferred building material or combination of material, **Industrial building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood+Steel	3	4,9	5,4	5,4
	Steel	14	23,0	25,0	30,4
	Concrete	8	13,1	14,3	44,6
	Steel+Concrete	31	50,8	55,4	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.54. Preferred building material or combination of material, **Recreational building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	7	11,5	12,5	12,5
	Wood+Concrete	15	24,6	26,8	39,3
	Wood+Steel	5	8,2	8,9	48,2
	Steel	2	3,3	3,6	51,8
	Concrete	7	11,5	12,5	64,3
	Steel+Concrete	20	32,8	35,7	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

Table 3.55. Preferred building material or combination of material, **Transportation building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood+Concrete	3	4,9	5,4	5,4
	Wood+Steel	3	4,9	5,4	10,7
	Steel	15	24,6	26,8	37,5
	Concrete	6	9,8	10,7	48,2
	Steel+Concrete	28	45,9	50,0	98,2
	Masonry	1	1,6	1,8	100,0
	Total	56	91,8	100,0	
Missing	System	5	8,2		
Total		61	100,0		

According to gender and profession type, respondents ' responses are shown in tables 3.56-3.64.

Table 3.56. Preferred building material or combination of material for **Family house by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Family house	Wood	0	3	1	1	0	5
		Wood+Concrete	1	1	2	1	2	7
		Wood+Steel	3	1	2	3	1	10
		Steel+Concrete	0	0	2	0	0	2
	Total		4	5	7	5	3	24
Male	Preferred building material or combination of material, Family house	Wood	5	1	3	0	1	10
		Wood+Concrete	2	1	3	1	0	7
		Wood+Steel	2	0	2	1	1	6
		Steel	0	0	0	1	0	1
		Concrete	2	1	0	1	0	4
		Steel+Concrete	0	1	0	3	1	5
		Masonry	2	0	0	0	1	3
	Total		13	4	8	7	4	36
Total	Preferred building material or combination of material, Family house	Wood	5	4	4	1	1	15
		Wood+Concrete	3	2	5	2	2	14
		Wood+Steel	5	1	4	4	2	16
		Steel	0	0	0	1	0	1
		Concrete	2	1	0	1	0	4
		Steel+Concrete	0	1	2	3	1	7
		Masonry	2	0	0	0	1	3
	Total		17	9	15	12	7	60

Table 3.57. Preferred building material or combination of material for **Multi-Storey house by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Multi-storey house	Wood+Concrete	0	0	0	0	1	1
		Wood+Steel	0	0	0	1	0	1
		Steel	0	0	1	2	0	3
		Concrete	2	3	2	0	1	8
		Steel+Concrete	2	2	3	2	1	10
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Multi-storey house	Steel	0	0	1	1	0	2
		Concrete	10	0	1	2	2	15
		Steel+Concrete	3	4	6	4	2	19
	Total		13	4	8	7	4	36
Total	Preferred building material or combination of material, Multi-storey house	Wood+Concrete	0	0	0	0	1	1
		Wood+Steel	0	0	0	1	0	1
		Steel	0	0	2	3	0	5
		Concrete	12	3	3	2	3	23
		Steel+Concrete	5	6	9	6	3	29
	Total		17	9	14	12	7	59

Table 3.58. Preferred building material or combination of material for **Commercial building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Commercial building	Wood	0	0	0	0	1	1
		Wood+Steel	0	0	1	1	0	2
		Steel	2	2	2	1	1	8
		Concrete	1	1	1	2	1	6
		Steel+Concrete	1	2	2	1	0	6
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Commercial building	Steel	5	0	1	1	1	8
		Concrete	4	1	2	3	1	11
		Steel+Concrete	4	2	4	3	1	14
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Commercial building	Wood	0	0	0	0	1	1
		Wood+Steel	0	0	1	1	0	2
		Steel	7	2	3	2	2	16
		Concrete	5	2	3	5	2	17
		Steel+Concrete	5	4	6	4	1	20
	Total		17	8	13	12	6	56

Table 3.59. Preferred building material or combination of material for **Educational building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Educational building	Wood+Concrete	0	1	0	0	1	2
		Wood+Steel	0	0	0	1	0	1
		Steel	0	1	2	1	0	4
		Concrete	2	1	1	0	1	5
		Steel+Concrete	2	2	3	3	1	11
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Educational building	Wood+Steel	1	0	1	1	0	3
		Steel	2	0	0	0	0	2
		Concrete	7	1	1	1	2	12
		Steel+Concrete	3	2	5	5	1	16
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Educational building	Wood+Concrete	0	1	0	0	1	2
		Wood+Steel	1	0	1	2	0	4
		Steel	2	1	2	1	0	6
		Concrete	9	2	2	1	3	17
		Steel+Concrete	5	4	8	8	2	27
	Total		17	8	13	12	6	56

Table 3.60. Preferred building material or combination of material for **Governmental building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Governmental building	Wood+Steel	0	0	0	1	1	2
		Steel	0	0	2	1	0	3
		Concrete	2	2	1	0	1	6
		Steel+Concrete	2	3	3	3	1	12
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Governmental building	Wood+Steel	1	0	0	0	0	1
		Steel	1	0	0	0	0	1
		Concrete	8	1	2	2	2	15
		Steel+Concrete	3	2	5	5	1	16
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Governmental building	Wood+Steel	1	0	0	1	1	3
		Steel	1	0	2	1	0	4
		Concrete	10	3	3	2	3	21
		Steel+Concrete	5	5	8	8	2	28
	Total		17	8	13	12	6	56

Table 3.61. Preferred building material or combination of material for **Religious building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Religious building	Wood	0	1	1	1	0	3
		Wood+Concrete	1	0	0	0	1	2
		Wood+Steel	0	0	0	1	0	1
		Steel	0	0	1	0	1	2
		Concrete	1	1	1	1	0	4
		Steel+Concrete	2	2	2	2	1	9
		Masonry	0	1	1	0	0	2
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Religious building	Wood	1	0	0	0	1	2
		Wood+Concrete	0	0	2	0	1	3
		Wood+Steel	1	1	1	0	0	3
		Concrete	6	0	0	3	1	10
		Steel+Concrete	5	2	4	4	0	15
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Religious building	Wood	1	1	1	1	1	5
		Wood+Concrete	1	0	2	0	2	5
		Wood+Steel	1	1	1	1	0	4
		Steel	0	0	1	0	1	2
		Concrete	7	1	1	4	1	14
		Steel+Concrete	7	4	6	6	1	24
		Masonry	0	1	1	0	0	2
	Total		17	8	13	12	6	56

Table 3.62. Preferred building material or combination of material for **Industrial building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics eng xineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Industrial building	Wood+Steel	0	0	0	1	1	2
		Steel	2	1	2	1	1	7
		Concrete	1	1	0	0	1	3
		Steel+Concrete	1	3	4	3	0	11
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Industrial building	Wood+Steel	0	0	1	0	0	1
		Steel	4	0	1	0	2	7
		Concrete	2	1	0	2	0	5
		Steel+Concrete	7	2	5	5	1	20
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Industrial building	Wood+Steel	0	0	1	1	1	3
		Steel	6	1	3	1	3	14
		Concrete	3	2	0	2	1	8
		Steel+Concrete	8	5	9	8	1	31
	Total		17	8	13	12	6	56

Table 3.63. Preferred building material or combination of material for **Recreational building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Recreational building	Wood	0	0	2	0	0	2
		Wood+Concrete	2	3	0	1	2	8
		Wood+Steel	0	0	0	2	0	2
		Steel	0	0	2	0	0	2
		Concrete	1	1	0	1	0	3
		Steel+Concrete	1	1	2	1	1	6
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Recreational building	Wood	2	0	2	0	1	5
		Wood+Concrete	2	2	1	0	2	7
		Wood+Steel	2	0	1	0	0	3
		Concrete	2	0	0	2	0	4
		Steel+Concrete	4	2	3	5	0	14
	Total		12	4	7	7	3	33
Total	Preferred building material or combination of material, Recreational building	Wood	2	0	4	0	1	7
		Wood+Concrete	4	5	1	1	4	15
		Wood+Steel	2	0	1	2	0	5
		Steel	0	0	2	0	0	2
		Concrete	3	1	0	3	0	7
		Steel+Concrete	5	3	5	6	1	20
	Total		16	9	13	12	6	56

Table 3.64. Preferred building material or combination of material for **Transportation building by gender and type of profession**

			What is your job?					Total
			Civil engineer	Architect	Urban planner	Geomatics engineer / Geological engineer	Building inspector	
Female	Preferred building material or combination of material, Transportation building	Wood+Steel	0	0	0	2	1	3
		Steel	1	1	4	1	1	8
		Concrete	1	0	0	0	0	1
		Steel+Concrete	2	4	2	1	1	10
		Masonry	0	0	0	1	0	1
	Total		4	5	6	5	3	23
Male	Preferred building material or combination of material, Transportation building	Wood+Concrete	1	0	2	0	0	3
		Steel	4	0	1	0	2	7
		Concrete	3	0	0	2	0	5
		Steel+Concrete	5	3	4	5	1	18
	Total		13	3	7	7	3	33
Total	Preferred building material or combination of material, Transportation building	Wood+Concrete	1	0	2	0	0	3
		Wood+Steel	0	0	0	2	1	3
		Steel	5	1	5	1	3	15
		Concrete	4	0	0	2	0	6
		Steel+Concrete	7	7	6	6	2	28
		Masonry	0	0	0	1	0	1
	Total		17	8	13	12	6	56

According to Chi-square test results, in the context of responses to material or combination of material preferences, there is no statistically significant difference in terms of both gender and profession types.

3.3.4. Main Barriers For Using Wood As A Building Material

In this part of the questionnaire; the main barriers to the use of wood as a construction material were analyzed.

The highest response given to questions is 4, while the lowest response is 1. For this reason, the comment of the mean was conducted with the formula below.

Response level	Intervals for the level of response		
1 =	1.00-1.75	=	Not effective at all
2 =	1.76-2.50	=	Not effective
3 =	2.51-3.25	=	Effective
4 =	3.26-4.00	=	Very effective

This section contains 8 likert-type questions (6). The responses of the respondents to 8 different statements are shown in tables 3.65-3.73.

Table 3.65. Main barriers for using wood as a building material, **Legislation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	7	11,5	11,9	11,9
	Not effective	14	23,0	23,7	35,6
	Effective	32	52,5	54,2	89,8
	Very effective	6	9,8	10,2	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.66. Main barriers for using wood as a building material, **Lack of skilled workers**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	7	11,5	11,7	11,7
	Not effective	6	9,8	10,0	21,7
	Effective	33	54,1	55,0	76,7
	Very effective	14	23,0	23,3	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.67. Main barriers for using wood as a building material, **Lack of knowledge**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	8	13,1	13,3	13,3
	Not effective	7	11,5	11,7	25,0
	Effective	23	37,7	38,3	63,3
	Very effective	22	36,1	36,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.68. Main barriers for using wood as a building material, **Lack of experience**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	5	8,2	8,3	8,3
	Not effective	8	13,1	13,3	21,7
	Effective	28	45,9	46,7	68,3
	Very effective	19	31,1	31,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.69. Main barriers for using wood as a building material, **Lack of information**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	5	8,2	8,5	8,5
	Not effective	8	13,1	13,6	22,0
	Effective	29	47,5	49,2	71,2
	Very effective	17	27,9	28,8	100,0
	Total	59	96,7	100,0	
Missing	System	2	3,3		
Total		61	100,0		

Table 3.70. Main barriers for using wood as a building material, **Concerns about the cost of the building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	5	8,2	8,3	8,3
	Not effective	9	14,8	15,0	23,3
	Effective	30	49,2	50,0	73,3
	Very effective	16	26,2	26,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.71. Main barriers for using wood as a building material, **Concerns about the robustness of the building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	4	6,6	6,7	6,7
	Not effective	8	13,1	13,3	20,0
	Effective	25	41,0	41,7	61,7
	Very effective	23	37,7	38,3	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.72. Main barriers for using wood as a building material, **Concerns about maintenance cost of the building**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	5	8,2	8,3	8,3
	Not effective	7	11,5	11,7	20,0
	Effective	25	41,0	41,7	61,7
	Very effective	23	37,7	38,3	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.73. Means for responses to the statements in the fifth part of the questionnaire (1=not effective at all, 4=very effective)

	Mean	Std. Deviation	N
Main barriers for using wood as a building material, Legislation	**2,64**	,831	58
Main barriers for using wood as a building material, Lack of skilled workers	**2,91**	,864	58
Main barriers for using wood as a building material, Lack of knowledge	**2,98**	1,017	58
Main barriers for using wood as a building material, Lack of experience	**3,00**	,898	58
Main barriers for using wood as a building material, Lack of information	**2,97**	,878	58
Main barriers for using wood as a building material, Concerns about the cost of the building	**2,93**	,876	58
Main barriers for using wood as a building material, Concerns about the robustness of the building	**3,12**	,880	58
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	**3,09**	,923	58

Main barriers to use of wood material were analyzed in terms of gender, and statistical values are shown in Table 3.74.

Significant barriers according to females are concerns about maintenance costs of the building, concerns about the robustness of the building, lack of experience and lack of knowledge, respectively. Significant barriers according to males are concerns about the robustness of the building, concerns about maintenance costs of the building, lack of experience and lack of information, respectively.

Table 3.74. Group statistics between responses to the statements in the fifth part of the questionnaire and gender (1=not effective at all, 4=very effective)

		N	Mean	Std. Deviation	Std. Error Mean
Main barriers for using wood as a building material, Legislation	Female	23	**2,70**	,765	,159
	Male	36	**2,58**	,874	,146
Main barriers for using wood as a building material, Lack of skilled workers	Female	24	**3,13**	,992	,202
	Male	36	**2,75**	,806	,134
Main barriers for using wood as a building material, Lack of knowledge	Female	24	**3,21**	1,103	,225
	Male	36	**2,83**	,941	,157
Main barriers for using wood as a building material, Lack of experience	Female	24	**3,25**	,944	,193
	Male	36	**2,86**	,833	,139
Main barriers for using wood as a building material, Lack of information	Female	24	**3,17**	,868	,177
	Male	35	**2,86**	,879	,149
Main barriers for using wood as a building material, Concerns about the cost of the building	Female	24	**3,13**	,850	,174
	Male	36	**2,83**	,878	,146
Main barriers for using wood as a building material, Concerns about the robustness of the building	Female	24	**3,29**	,955	,195
	Male	36	**3,00**	,828	,138
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	Female	24	**3,33**	,917	,187
	Male	36	**2,94**	,893	,149

The Independent-Samples T test was applied to analyze whether there were significant differences between group means in terms of gender. According to homogeneity test, homogeneity has been provided for all statements in the fifth part of questionnaire (Table 3.75).

According to the Independent-Samples T test results, there is no statistically significant difference between responses to statements in this part of the questionnaire and gender.

Table 3.75. Independent-Samples T test results between responses to the statements in the fifth part of the questionnaire and gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Sig. (2-tailed)	Mean Difference
Main barriers for using wood as a building material, Legislation	Equal variances assumed	,566	,455	,505	,616	,112
	Equal variances not assumed			,520	,605	,112
Main barriers for using wood as a building material, Lack of skilled workers	Equal variances assumed	,735	,395	1,609	,113	,375
	Equal variances not assumed			1,543	,130	,375
Main barriers for using wood as a building material, Lack of knowledge	Equal variances assumed	,603	,441	1,411	,163	,375
	Equal variances not assumed			1,367	,179	,375
Main barriers for using wood as a building material, Lack of experience	Equal variances assumed	1,056	,308	1,679	,099	,389
	Equal variances not assumed			1,637	,109	,389
Main barriers for using wood as a building material, Lack of information	Equal variances assumed	,056	,813	1,335	,187	,310
	Equal variances not assumed			1,338	,187	,310
Main barriers for using wood as a building material, Concerns about the cost of the building	Equal variances assumed	,377	,542	1,276	,207	,292
	Equal variances not assumed			1,285	,205	,292

Main barriers for using wood as a building material, Concerns about the robustness of the building	Equal variances assumed	1,901	,173	1,257	,214	,292
	Equal variances not assumed			1,221	,228	,292
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	Equal variances assumed	,290	,592	1,635	,107	,389
	Equal variances not assumed			1,627	,110	,389

Main barriers to use of wood material were analyzed in terms of professions, and statistical values are shown in Table 3.76.

Table 3.76. Descriptive statistic results between responses to the statements in the fifth part of the questionnaire and professions (1=not effective at all, 4=very effective)

		N	Mean	Std. Deviation	Std. Error
Main barriers for using wood as a building material, Legislation	Civil engineer	16	**2,38**	1,025	,256
	Architect	10	**2,80**	,919	,291
	Urban planner	15	**2,93**	,594	,153
	Geomatics engineer / Geological engineer	12	**2,67**	,492	,142
	Building inspector	6	**2,17**	,983	,401
	Total	59	**2,63**	,828	,108
Main barriers for using wood as a building material, Lack of skilled workers	Civil engineer	16	**2,63**	1,147	,287
	Architect	10	**3,00**	,943	,298
	Urban planner	15	**3,13**	,352	,091
	Geomatics engineer / Geological engineer	12	**3,08**	,900	,260
	Building inspector	7	**2,57**	,976	,369
	Total	60	**2,90**	,896	,116
Main barriers for using wood as a building material, Lack of knowledge	Civil engineer	16	**2,63**	1,088	,272
	Architect	10	**3,30**	,949	,300
	Urban planner	15	**3,47**	.516	.133
	Geomatics engineer / Geological engineer	12	**2,92**	1,165	,336
	Building inspector	7	**2,43**	1,134	,429
	Total	60	**2,98**	1,017	,131

Main barriers for using wood as a building material, Lack of experience	Civil engineer	16	**2,88**	,957	,239
	Architect	10	**3,30**	,949	,300
	Urban planner	15	**3,27**	,594	,153
	Geomatics engineer / Geological engineer	12	**3,00**	,853	,246
	Building inspector	7	**2,43**	1,134	,429
	Total	60	**3,02**	,892	,115
Main barriers for using wood as a building material, Lack of information	Civil engineer	15	**2,73**	,961	,248
	Architect	10	**3,00**	1,054	,333
	Urban planner	15	**3,27**	,594	,153
	Geomatics engineer / Geological engineer	12	**3,25**	,622	,179
	Building inspector	7	**2,43**	1,134	,429
	Total	59	**2,98**	,881	,115
Main barriers for using wood as a building material, Concerns about the cost of the building	Civil engineer	16	**2,81**	1,109	,277
	Architect	10	**2,80**	,919	,291
	Urban planner	15	**3,27**	,594	,153
	Geomatics engineer / Geological engineer	12	**3,17**	,577	,167
	Building inspector	7	**2,43**	,976	,369
	Total	60	**2,95**	,872	,113
Main barriers for using wood as a building material, Concerns about the robustness of the building	Civil engineer	16	**3,00**	,966	,242
	Architect	10	**3,30**	,949	,300
	Urban planner	15	**3,07**	,799	,206
	Geomatics engineer / Geological engineer	12	**3,25**	,754	,218
	Building inspector	7	**3,00**	1,155	,436
	Total	60	**3,12**	,885	,114
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	Civil engineer	16	**3,13**	,957	,239
	Architect	10	**3,20**	,919	,291
	Urban planner	15	**3,20**	,775	,200
	Geomatics engineer / Geological engineer	12	**3,33**	,778	,225
	Building inspector	7	**2,29**	1,113	,421
	Total	60	**3,10**	,915	,118

One-Way ANOVA test was applied to analyze whether there were significant differences between group means in terms of profession. Homogeneity test results for statements in the this part of questionnaire are shown below (Table 3.77).

Table 3.77. Test of Homogeneity of Variance for One-Way ANOVA test

	Levene Statistic	df1	df2	Sig.
Main barriers for using wood as a building material, Legislation	3,455	4	54	,014
Main barriers for using wood as a building material, Lack of skilled workers	3,766	4	55	,009
Main barriers for using wood as a building material, Lack of knowledge	2,179	4	55	,083
Main barriers for using wood as a building material, Lack of experience	,929	4	55	,454
Main barriers for using wood as a building material, Lack of information	1,807	4	54	,141
Main barriers for using wood as a building material, Concerns about the cost of the building	2,084	4	55	,095
Main barriers for using wood as a building material, Concerns about the robustness of the building	,255	4	55	,905
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	,335	4	55	,853

According to the One-Way ANOVA test results, there is no statistically significant difference between responses to statements in this part of questionnaire and professions (Table 3.78).

Table 3.78. One-Way ANOVA test results for relation between responses to the statements in the fifth part of the questionnaire and professions

		Sum of Squares	df	Mean Square	F	Sig.
Main barriers for using wood as a building material, Legislation	Between Groups	4,013	4	1,003	1,514	,211
	Within Groups	35,783	54	,663		
	Total	39,797	58			
Main barriers for using wood as a building material, Lack of skilled workers	Between Groups	3,286	4	,821	1,024	,403
	Within Groups	44,114	55	,802		
	Total	47,400	59			
Main barriers for using wood as a building material, Lack of knowledge	Between Groups	8,769	4	2,192	2,309	,069
	Within Groups	52,214	55	,949		
	Total	60,983	59			
Main barriers for using wood as a building material, Lack of experience	Between Groups	4,486	4	1,121	1,451	,230
	Within Groups	42,498	55	,773		
	Total	46,983	59			
Main barriers for using wood as a building material, Lack of information	Between Groups	5,152	4	1,288	1,746	,153
	Within Groups	39,831	54	,738		
	Total	44,983	58			
Main barriers for using wood as a building material, Concerns about the cost of the building	Between Groups	4,498	4	1,125	1,533	,205
	Within Groups	40,352	55	,734		
	Total	44,850	59			
Main barriers for using wood as a building material, Concerns about the robustness of the building	Between Groups	,900	4	,225	,273	,894
	Within Groups	45,283	55	,823		
	Total	46,183	59			
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	Between Groups	5,555	4	1,389	1,742	,154
	Within Groups	43,845	55	,797		
	Total	49,400	59			

3.3.5. Perceptions About The Environmental and Health Impacts of Wood Materials and Wood Buildings

In final section of questionnaire, respondents' perceptions about the environmental and health impacts of wood materials and wood buildings are indicated.

The highest response given to questions is 5, while the lowest response is 1. For this reason, the comment of the mean was conducted with the formula below.

Response level	Intervals for the level of response		
1 =	1.00-1.80	=	I fully disagree
2 =	1.81-2.60	=	I disagree
3 =	2.61-3.40	=	Neutral/not sure
4 =	3.41-4.20	=	I agree
5 =	4.21-5.00	=	I fully agree

This section contains 16 likert-type questions. The responses of the respondents to 16 different statements are shown in tables 3.79-3.95.

Table 3.79. Wood is a suitable construction material for 1 to 3 storeys buildings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	5	8,2	8,2	8,2
	I disagree	7	11,5	11,5	19,7
	Neutral / not sure	5	8,2	8,2	27,9
	I agree	28	45,9	45,9	73,8
	I fully agree	16	26,2	26,2	100,0
	Total	61	100,0	100,0	

Table 3.80. Wood is a suitable construction material for 4 to 7 storeys buildings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	32	52,5	53,3	53,3
	I disagree	20	32,8	33,3	86,7
	Neutral / not sure	5	8,2	8,3	95,0
	I agree	3	4,9	5,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.81. The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	2	3,3	3,3	6,6
	Neutral / not sure	4	6,6	6,6	13,1
	I agree	29	47,5	47,5	60,7
	I fully agree	24	39,3	39,3	100,0
	Total	61	100,0	100,0	

Table 3.82. People living in buildings built of wooden material feel closer to nature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	1	1,6	1,7	1,7
	I disagree	5	8,2	8,3	10,0
	Neutral / not sure	1	1,6	1,7	11,7
	I agree	29	47,5	48,3	60,0
	I fully agree	24	39,3	40,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.83. The building that constructed with wooden material has good acoustic and noise insulation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	15	24,6	25,0	28,3
	Neutral / not sure	19	31,1	31,7	60,0
	I agree	14	23,0	23,3	83,3
	I fully agree	10	16,4	16,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.84. The building that constructed with wooden material contributes positively to indoor air quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	5	8,2	8,3	11,7
	Neutral / not sure	7	11,5	11,7	23,3
	I agree	31	50,8	51,7	75,0
	I fully agree	15	24,6	25,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.85. The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	1	1,6	1,7	1,7
	I disagree	3	4,9	5,0	6,7
	Neutral / not sure	7	11,5	11,7	18,3
	I agree	25	41,0	41,7	60,0
	I fully agree	24	39,3	40,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.86. Wood is a renewable material

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I disagree	1	1,6	1,7	1,7
	Neutral / not sure	12	19,7	20,0	21,7
	I agree	29	47,5	48,3	70,0
	I fully agree	18	29,5	30,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.87. Once cut, wood continues to store the absorbed CO2 throughout its period of utilization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	3	4,9	5,0	5,0
	I disagree	1	1,6	1,7	6,7
	Neutral / not sure	33	54,1	55,0	61,7
	I agree	22	36,1	36,7	98,3
	I fully agree	1	1,6	1,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.88. Wood can emit toxic VOCs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	3	4,9	5,0	8,3
	Neutral / not sure	35	57,4	58,3	66,7
	I agree	19	31,1	31,7	98,3
	I fully agree	1	1,6	1,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.89. Processing of wood is easier than others (concrete, steel, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	7	11,5	11,7	15,0
	Neutral / not sure	10	16,4	16,7	31,7
	I agree	29	47,5	48,3	80,0
	I fully agree	12	19,7	20,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.90. Living in wooden buildings can reduce stress

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	3	4,9	4,9	8,2
	Neutral / not sure	6	9,8	9,8	18,0
	I agree	33	54,1	54,1	72,1
	I fully agree	17	27,9	27,9	100,0
	Total	61	100,0	100,0	

Table 3.91. Productivity may increase in wooden buildings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	1	1,6	1,7	1,7
	I disagree	3	4,9	5,0	6,7
	Neutral / not sure	22	36,1	36,7	43,3
	I agree	27	44,3	45,0	88,3
	I fully agree	7	11,5	11,7	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.92. With sustainable forest management, enough trees can be grown to build wooden houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I disagree	7	11,5	11,7	11,7
	Neutral / not sure	13	21,3	21,7	33,3
	I agree	28	45,9	46,7	80,0
	I fully agree	12	19,7	20,0	100,0
	Total	60	98,4	100,0	
Missing	System	1	1,6		
Total		61	100,0		

Table 3.93. For a sustainable design, material selection is very important

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	2	3,3	3,3	3,3
	I disagree	4	6,6	6,6	9,8
	Neutral / not sure	3	4,9	4,9	14,8
	I agree	22	36,1	36,1	50,8
	I fully agree	30	49,2	49,2	100,0
	Total	61	100,0	100,0	

Table 3.94. I want to live in a wooden house

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I fully disagree	3	4,9	4,9	4,9
	I disagree	2	3,3	3,3	8,2
	Neutral / not sure	8	13,1	13,1	21,3
	I agree	18	29,5	29,5	50,8
	I fully agree	30	49,2	49,2	100,0
	Total	61	100,0	100,0	

Table 3.95. Means for responses to the statements in the final part of the questionnaire (1=I fully disagree, 5=I fully agree)

	Mean	**Std. Deviation**	**N**
Wood is a suitable construction material for 1 to 3 storeys buildings.	**3,70**	1,225	60
Wood is a suitable construction material for 4 to 7 storeys buildings.	**1,65**	,840	60
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	**4,15**	,936	60
People living in buildings built of wooden material feel closer to nature.	**4,17**	,942	60
The building that constructed with wooden material has good acoustic and noise insulation.	**3,25**	1,114	60
The building that constructed with wooden material contributes positively to indoor air quality.	**3,87**	,999	60
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	**4,13**	,929	60
Wood is a renewable material.	**4,07**	,756	60
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	**3,28**	,761	60
Wood can emit toxic VOCs	**3,23**	,722	60
Processing of wood is easier than others (concrete, steel, etc.).	**3,70**	1,030	60
Living in wooden buildings can reduce stress.	**3,97**	,938	60

Productivity may increase in wooden buildings.	**3,60**	,827	60
With sustainable forest management, enough trees can be grown to build wooden houses.	**3,75**	,914	60
For a sustainable design, material selection is very important.	**4,20**	1,038	60
I want to live in a wooden house.	**4,13**	1,096	60

The statements in the final part of questionnaire were analyzed in terms of gender, and statistical values are shown in Table 3.96.

From the statements in the final section of the survey, support is high for the following statements by both female and male:

- The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.)
- People living in buildings built of wooden material feel closer to nature
- The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.)
- Wood is a renewable material
- For a sustainable design, material selection is very important
- I want to live in a wooden house.

However, support for the following statements by both men and women is low:

- Wood is a suitable construction material for 4 to 7 storeys buildings
- The building that constructed with wooden material has good acoustic and noise insulation
- Once cut, wood continues to store the absorbed CO2 throughout its period of utilization

Table 3.96. Group statistics between responses to the statements in the final part of the questionnaire and gender (1=I fully disagree, 5=I fully agree)

		N	Mean	Std. Deviation	Std. Error Mean
Wood is a suitable construction material for 1 to 3 storeys buildings.	Female	24	**3,92**	1,100	,225
	Male	37	**3,57**	1,281	,211
Wood is a suitable construction material for 4 to 7 storeys buildings.	Female	24	**1,71**	,955	,195
	Male	36	**1,61**	,766	,128
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	Female	24	**4,21**	,779	,159
	Male	37	**4,14**	1,032	,170
People living in buildings built of wooden material feel closer to nature.	Female	24	**4,21**	,833	,170
	Male	36	**4,14**	1,018	,170
The building that constructed with wooden material has good acoustic and noise insulation.	Female	24	**3,13**	,992	,202
	Male	36	**3,33**	1,195	,199
The building that constructed with wooden material contributes positively to indoor air quality.	Female	24	**4,00**	,978	,200
	Male	36	**3,78**	1,017	,170
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	Female	24	**4,17**	,917	,187
	Male	36	**4,11**	,950	,158
Wood is a renewable material.	Female	24	**4,08**	,717	,146
	Male	36	**4,06**	,791	,132
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	Female	24	**3,21**	,658	,134
	Male	36	**3,33**	,828	,138
Wood can emit toxic VOCs	Female	24	**3,08**	,654	,133
	Male	36	**3,33**	,756	,126

Processing of wood is easier than others (concrete, steel, etc.).	Female	24	**3,71**	1,042	,213
	Male	36	**3,69**	1,037	,173
Living in wooden buildings can reduce stress.	Female	24	**4,04**	,999	,204
	Male	37	**3,95**	,911	,150
Productivity may increase in wooden buildings.	Female	24	**3,67**	1,007	,206
	Male	36	**3,56**	,695	,116
With sustainable forest management, enough trees can be grown to build wooden houses.	Female	24	**3,67**	,917	,187
	Male	36	**3,81**	,920	,153
For a sustainable design, material selection is very important.	Female	24	**4,17**	1,090	,223
	Male	37	**4,24**	1,011	,166
I want to live in a wooden house.	Female	24	**4,04**	1,083	,221
	Male	37	**4,22**	1,109	,182

The Independent-Samples T test was applied to analyze whether there were significant differences between group means in terms of gender. According to homogeneity test, homogeneity has been provided for all statements in the final part of questionnaire (Table 3.97).

According to the Independent-Samples T test results, there is no statistically significant difference between responses to statements in this part of questionnaire and gender (Table 3.97).

Table 3.97. Independent-Samples T test results between responses to the statements in the final part of the questionnaire and gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Sig. (2-tailed)	Mean Difference
Wood is a suitable construction material for 1 to 3 storeys buildings.	Equal variances assumed	2,688	,106	1,097	,277	,349
	Equal variances not assumed			1,134	,262	,349
Wood is a suitable construction material for 4 to 7 storeys buildings.	Equal variances assumed	1,007	,320	,436	,664	,097
	Equal variances not assumed			,417	,679	,097
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	Equal variances assumed	,387	,536	,297	,768	,073
	Equal variances not assumed			,315	,754	,073
People living in buildings built of wooden material feel closer to nature.	Equal variances assumed	,507	,479	,278	,782	,069
	Equal variances not assumed			,289	,774	,069
The building that constructed with wooden material has good acoustic and noise insulation.	Equal variances assumed	2,600	,112	-,706	,483	-,208
	Equal variances not assumed			-,734	,466	-,208
The building that constructed with wooden material contributes positively to indoor air quality.	Equal variances assumed	,090	,766	,842	,403	,222
	Equal variances not assumed			,848	,400	,222
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	Equal variances assumed	,563	,456	,225	,823	,056
	Equal variances not assumed			,227	,822	,056
Wood is a renewable material.	Equal variances assumed	,101	,752	,138	,891	,028
	Equal variances not assumed			,141	,888	,028
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	Equal variances assumed	2,114	,151	-,620	,538	-,125
	Equal variances not assumed			-,649	,519	-,125
Wood can emit toxic VOCs	Equal variances assumed	3,403	,070	-1,323	,191	-,250
	Equal variances not assumed			-1,362	,179	-,250

Processing of wood is easier than others (concrete, steel, etc.).	Equal variances assumed	,002	,963	,051	,960	,014
	Equal variances not assumed			,051	,960	,014
Living in wooden buildings can reduce stress.	Equal variances assumed	,117	,734	,386	,701	,096
	Equal variances not assumed			,378	,707	,096
Productivity may increase in wooden buildings.	Equal variances assumed	2,930	,092	,506	,615	,111
	Equal variances not assumed			,471	,640	,111
With sustainable forest management, enough trees can be grown to build wooden houses.	Equal variances assumed	,062	,805	-,574	,568	-,139
	Equal variances not assumed			-,574	,569	-,139
For a sustainable design, material selection is very important.	Equal variances assumed	,005	,941	-,280	,780	-,077
	Equal variances not assumed			-,276	,784	-,077
I want to live in a wooden house.	Equal variances assumed	,069	,793	-,606	,547	-,175
	Equal variances not assumed			-,609	,545	-,175

The statements in the final part of questionnaire were analyzed in terms of professions, and statistical values are shown in Table 3.98.

Table 3.98. Descriptive statistics results between responses to the statements in the final part of the questionnaire and professions (1=I fully disagree, 5=I fully agree)

		N	*Mean*	*Std. Deviation*	*Std. Error*
Wood is a suitable construction material for 1 to 3 storeys buildings.	Civil engineer	17	**3,94**	1,345	,326
	Architect	10	**3,90**	,994	,314
	Urban planner	15	**3,87**	,990	,256
	Geomatics engineer / Geological engineer	12	**3,33**	1,303	,376
	Building inspector	7	**3,14**	1,464	,553
	Total	61	**3,70**	1,216	,156
Wood is a suitable construction material for 4 to 7 storeys buildings.	Civil engineer	16	**1,81**	,981	,245
	Architect	10	**2,10**	,994	,314
	Urban planner	15	**1,47**	,640	,165
	Geomatics engineer / Geological engineer	12	**1,50**	,674	,195
	Building inspector	7	**1,29**	,756	,286
	Total	60	**1,65**	,840	,108
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	Civil engineer	17	**4,18**	,951	,231
	Architect	10	**4,50**	,972	,307
	Urban planner	15	**4,07**	,884	,228
	Geomatics engineer / Geological engineer	12	**4,33**	,651	,188
	Building inspector	7	**3,57**	1,272	,481
	Total	61	**4,16**	,934	,120
People living in buildings built of wooden material feel closer to nature.	Civil engineer	16	**4,19**	,834	,209
	Architect	10	**4,50**	,527	,167
	Urban planner	15	**4,33**	,816	,211
	Geomatics engineer / Geological engineer	12	**3,83**	1,403	,405
	Building inspector	7	**3,86**	,900	,340
	Total	60	**4,17**	,942	,122

The building that constructed with wooden material has good acoustic and noise insulation.	Civil engineer	16	**3,44**	1,263	,316
	Architect	10	**4,00**	,816	,258
	Urban planner	15	**3,20**	1,014	,262
	Geomatics engineer / Geological engineer	12	**3,08**	1,084	,313
	Building inspector	7	**2,14**	,378	,143
	Total	60	**3,25**	1,114	,144
The building that constructed with wooden material contributes positively to indoor air quality.	Civil engineer	16	**3,75**	1,065	,266
	Architect	10	**4,20**	,919	,291
	Urban planner	15	**4,07**	,704	,182
	Geomatics engineer / Geological engineer	12	**3,92**	1,084	,313
	Building inspector	7	**3,14**	1,215	,459
	Total	60	**3,87**	,999	,129
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	Civil engineer	16	**4,31**	,793	,198
	Architect	10	**4,50**	,527	,167
	Urban planner	15	**4,27**	,799	,206
	Geomatics engineer / Geological engineer	12	**3,92**	1,311	,379
	Building inspector	7	**3,29**	,756	,286
	Total	60	**4,13**	,929	,120
Wood is a renewable material.	Civil engineer	16	**4,25**	,775	,194
	Architect	10	**4,40**	,699	,221
	Urban planner	15	**4,00**	,655	,169
	Geomatics engineer / Geological engineer	12	**4,00**	,739	,213
	Building inspector	7	**3,43**	,787	,297
	Total	60	**4,07**	,756	,098
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	Civil engineer	16	**3,31**	,793	,198
	Architect	10	**3,40**	1,075	,340
	Urban planner	15	**3,33**	,488	,126
	Geomatics engineer / Geological engineer	12	**3,33**	,651	,188
	Building inspector	7	**2,86**	,900	,340
	Total	60	**3,28**	,761	,098

Wood can emit toxic VOCs	Civil engineer	16	**3,19**	,834	,209
	Architect	10	**3,50**	1,080	,342
	Urban planner	15	**3,20**	,561	,145
	Geomatics engineer / Geological engineer	12	**3,25**	,452	,131
	Building inspector	7	**3,00**	,577	,218
	Total	60	**3,23**	,722	,093
Processing of wood is easier than others (concrete, steel, etc.).	Civil engineer	16	**3,50**	1,211	,303
	Architect	10	**4,10**	,876	,277
	Urban planner	15	**3,87**	,834	,215
	Geomatics engineer / Geological engineer	12	**3,92**	,669	,193
	Building inspector	7	**2,86**	1,345	,508
	Total	60	**3,70**	1,030	,133
Living in wooden buildings can reduce stress.	Civil engineer	17	**3,82**	,809	,196
	Architect	10	**4,30**	,483	,153
	Urban planner	15	**4,07**	1,163	,300
	Geomatics engineer / Geological engineer	12	**4,33**	,651	,188
	Building inspector	7	**3,14**	1,215	,459
	Total	61	**3,98**	,940	,120
Productivity may increase in wooden buildings.	Civil engineer	16	**3,69**	,704	,176
	Architect	10	**3,90**	,738	,233
	Urban planner	15	**3,53**	,743	,192
	Geomatics engineer / Geological engineer	12	**3,67**	,888	,256
	Building inspector	7	**3,00**	1,155	,436
	Total	60	**3,60**	,827	,107
With sustainable forest management, enough trees can be grown to build wooden houses.	Civil engineer	16	**3,56**	,892	,223
	Architect	10	**4,30**	,675	,213
	Urban planner	15	**3,60**	,986	,254
	Geomatics engineer / Geological engineer	12	**4,08**	,669	,193
	Building inspector	7	**3,14**	1,069	,404
	Total	60	**3,75**	,914	,118
For a sustainable design, material	Civil engineer	17	**4,29**	,849	,206

selection is very important.	Architect	10	**4,80**	,422	,133
	Urban planner	15	**4,00**	1,195	,309
	Geomatics engineer / Geological engineer	12	**4,42**	,669	,193
	Building inspector	7	**3,29**	1,604	,606
	Total	61	**4,21**	1,035	,132
I want to live in a wooden house.	Civil engineer	17	**4,29**	,920	,223
	Architect	10	**4,30**	,949	,300
	Urban planner	15	**4,07**	1,163	,300
	Geomatics engineer / Geological engineer	12	**4,08**	1,240	,358
	Building inspector	7	**3,86**	1,464	,553
	Total	61	**4,15**	1,093	,140

One-Way ANOVA test was applied to analyze whether there were significant differences between group means in terms of profession. Homogeneity test results for responses to statements in the final part of questionnaire are shown below (Table 3.99).

Table 3.99. Test of homogeneity of variances for One-Way ANOVA test

	Levene Statistic	df1	df2	Sig.
Wood is a suitable construction material for 1 to 3 storeys buildings.	,877	4	56	,484
Wood is a suitable construction material for 4 to 7 storeys buildings.	,472	4	55	,756
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	,405	4	56	,804
People living in buildings built of wooden material feel closer to nature.	1,905	4	55	,123
The building that constructed with wooden material has good acoustic and noise insulation.	2,584	4	55	,047

The building that constructed with wooden material contributes positively to indoor air quality.	,826	4	55	,514
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	1,335	4	55	,268
Wood is a renewable material.	,869	4	55	,488
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	,917	4	55	,461
Wood can emit toxic VOCs	1,878	4	55	,127
Processing of wood is easier than others (concrete, steel, etc.).	3,146	4	55	,021
Living in wooden buildings can reduce stress.	1,201	4	56	,321
Productivity may increase in wooden buildings.	,679	4	55	,609
With sustainable forest management, enough trees can be grown to build wooden houses.	2,361	4	55	,064
For a sustainable design, material selection is very important.	4,004	4	56	,006
I want to live in a wooden house.	,349	4	56	,843

According to the One-Way ANOVA test results, there is statistically significant difference in the responses given to the following statements in terms of professions (Table 3.100):

- The building that constructed with wooden material has good acoustic and noise insulation.
- With sustainable forest management, enough trees can be grown to build wooden houses.
- For a sustainable design, material selection is very important.

Table 3.100. One-Way ANOVA test results between responses to the statements in the final part of questionnaire and professions

		Sum of Squares	df	Mean Square	F	Sig.
Wood is a suitable construction material for 1 to 3 storeys buildings.	Between Groups	5,590	4	1,398	,942	,447
	Within Groups	83,098	56	1,484		
	Total	88,689	60			
Wood is a suitable construction material for 4 to 7 storeys buildings.	Between Groups	4,151	4	1,038	1,522	,209
	Within Groups	37,499	55	,682		
	Total	41,650	59			
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	Between Groups	4,076	4	1,019	1,182	,329
	Within Groups	48,285	56	,862		
	Total	52,361	60			
People living in buildings built of wooden material feel closer to nature.	Between Groups	3,539	4	,885	,997	,417
	Within Groups	48,795	55	,887		
	Total	52,333	59			
The building that constructed with wooden material has good acoustic and noise insulation.	Between Groups	15,139	4	3,785	3,582	**,011**
	Within Groups	58,111	55	1,057		
	Total	73,250	59			
The building that constructed with wooden material contributes positively to indoor air quality.	Between Groups	5,626	4	1,407	1,451	,230
	Within Groups	53,307	55	,969		
	Total	58,933	59			
The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	Between Groups	7,717	4	1,929	2,455	,056
	Within Groups	43,216	55	,786		
	Total	50,933	59			
Wood is a renewable material.	Between Groups	4,619	4	1,155	2,181	,083
	Within Groups	29,114	55	,529		
	Total	33,733	59			

Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	Between Groups	1,489	4	,372	,626	,646
	Within Groups	32,695	55	,594		
	Total	34,183	59			
Wood can emit toxic VOCs	Between Groups	1,146	4	,286	,532	,712
	Within Groups	29,588	55	,538		
	Total	30,733	59			
Processing of wood is easier than others (concrete, steel, etc.).	Between Groups	8,193	4	2,048	2,071	,097
	Within Groups	54,407	55	,989		
	Total	62,600	59			
Living in wooden buildings can reduce stress.	Between Groups	7,956	4	1,989	2,474	,055
	Within Groups	45,028	56	,804		
	Total	52,984	60			
Productivity may increase in wooden buildings.	Between Groups	3,663	4	,916	1,371	,256
	Within Groups	36,738	55	,668		
	Total	40,400	59			
With sustainable forest management, enough trees can be grown to build wooden houses.	Between Groups	7,839	4	1,960	2,603	**,046**
	Within Groups	41,411	55	,753		
	Total	49,250	59			
For a sustainable design, material selection is very important.	Between Groups	10,755	4	2,689	2,816	**,034**
	Within Groups	53,475	56	,955		
	Total	64,230	60			
I want to live in a wooden house.	Between Groups	1,336	4	,334	,266	,899
	Within Groups	70,337	56	1,256		
	Total	71,672	60			

In terms of responses to statement "*with sustainable forest management, enough trees can be grown to build wooden houses*",

post-hoc test was performed to determine the relations between professions.

According to the post-hoc test (LSD) results, there is statistically significant difference between civil engineers and architects, between architects and building inspector, between geomatics engineer/geological engineer and building inspector in terms of responses to statement "*with sustainable forest management, enough trees can be grown to build wooden houses"* (Table 3.101).

Table 3.101. Multiple comparisons for responses to statement "*with sustainable forest management, enough trees can be grown to build wooden houses."*

			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	Civil engineer	Architect	-,737*	,350	,040	-1,44	-,04
		Urban planner	-,038	,312	,905	-,66	,59
		Geomatics engineer / Geological engineer	-,521	,331	,122	-1,18	,14
		Building inspector	,420	,393	,291	-,37	1,21
	Architect	Civil engineer	,737*	,350	,040	,04	1,44
		Urban planner	,700	,354	,053	-,01	1,41
		Geomatics engineer / Geological engineer	,217	,372	,562	-,53	,96
		Building inspector	1,157*	,428	,009	,30	2,01
	Urban planner	Civil engineer	,038	,312	,905	-,59	,66
		Architect	-,700	,354	,053	-1,41	,01
		Geomatics engineer / Geological engineer	-,483	,336	,156	-1,16	,19
		Building inspector	,457	,397	,255	-,34	1,25

	Civil engineer	,521	,331	,122	-,14	1,18
Geomatics engineer / Geological engineer	Architect	-,217	,372	,562	-,96	,53
	Urban planner	,483	,336	,156	-,19	1,16
	Building inspector	,940*	,413	,027	,11	1,77
	Civil engineer	-,420	,393	,291	-1,21	,37
	Architect	-1,157*	,428	,009	-2,01	-,30
Building inspector	Urban planner	-,457	,397	,255	-1,25	,34
	Geomatics engineer / Geological engineer	-,940*	,413	,027	-1,77	-,11

*. The mean difference is significant at the 0.05 level.

According to the post-hoc test (Games-Howell) results, there is statistically significant difference between civil engineers and building inspectors, between architects and building inspectors, between urban planners and building inspector in terms of responses to statement "*the building that constructed with wooden material has good acoustic and noise insulation"* (Table 3.102).

Table 3.102. Multiple comparisons for responses to statement "*the building that constructed with wooden material has good acoustic and noise insulation.*"

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Civil engineer	Architect	-,563	,408	,646	-1,76	,64
	Urban planner	,238	,410	,977	-,96	1,43
	Geomatics engineer / Geological engineer	,354	,445	,929	-,95	1,66
	Building inspector	1,295*	,347	,010	,26	2,33
Architect	Civil engineer	,563	,408	,646	-,64	1,76
	Urban planner	,800	,368	,226	-,29	1,89
	Geomatics engineer / Geological engineer	,917	,406	,199	-,30	2,13
	Building inspector	1,857*	,295	,000	,93	2,78
Urban planner	Civil engineer	-,238	,410	,977	-1,43	,96
	Architect	-,800	,368	,226	-1,89	,29
	Geomatics engineer / Geological engineer	,117	,408	,998	-1,09	1,32
	Building inspector	1,057*	,298	,016	,16	1,95
Geomatics engineer / Geological engineer	Civil engineer	-,354	,445	,929	-1,66	,95
	Architect	-,917	,406	,199	-2,13	,30
	Urban planner	-,117	,408	,998	-1,32	1,09
	Building inspector	,940	,344	,095	-,12	2,00
Building inspector	Civil engineer	-1,295*	,347	,010	-2,33	-,26
	Architect	-1,857*	,295	,000	-2,78	-,93
	Urban planner	-1,057*	,298	,016	-1,95	-,16
	Geomatics engineer / Geological engineer	-,940	,344	,095	-2,00	,12

*. The mean difference is significant at the 0.05 level.

4. RESULTS AND SUGGESTIONS

This research was carried out with the aim of contributing to the wood building industry.

This work was done to explore the ideas and beliefs of professionals (civil engineers, architects, urban planners, geomatics engineers-geological engineers, building inspector) working in municipalities (malatya metropolitan municipality, battalgazi municipality and yesilyurt municipality), about wood material and wood buildings.

According to the respondents, the characteristics that a construction material must have can be listed with the following importance level (arranged in decreasing order):

- Earthquake properties (mean=4,59)
- Fire properties (mean=4,36)
- Compatibility with the building (mean=4,18)
- Mechanical performance (mean=4,11)
- Availability of design tools and resources (mean=4,02)
- Vibration properties (mean=3,96)
- Moisture properties (mean=3,95)
- Maintenance properties (mean=3,91)
- Availability in the market (mean=3,86)
- Environmental impacts (mean=3,79)
- Economic properties (mean=3,70)

- Aesthetics properties (mean=3,66)
- Carbon footprint (mean=3,50)
- Acoustic properties (mean=3,34).

In terms of gender, the Independent-Samples T test was performed to analyze mean values. According to the test results, there is statistically significant difference between the genders in terms of aesthetic characteristics. The mean values of responses to aesthetic characteristics are 4.04 for female and 3.50 for male. It is already widely known that the concept of aesthetics is more important for female. To analyze whether there was a difference between professions, the one-way ANOVA test was performed, and according to the test results, there was no statistically significant difference between professions.

According to the respondents, the following characteristics of wood are better than other building materials (e.g. concrete, steel):

- Aesthetics properties
- Environmental impacts
- Availability of design tools and resources.

According to the responses, fire, moisture and mechanical performance of wood are the weakest features. According to the Independent-Samples T test results, there is no statistically significant difference between genders in terms of responses to statements in this section. According to the one-way ANOVA test results; there is statistically significant difference between professions in terms of responses to

"*Availability of design tools and resources*" statement. Multiple-comparison analysis was performed to determine which professions were different, and there was found to be significant difference between the responses of civil engineers and urban planners.

Respondents' material (or combination of material) preferences according to building type are as follows:

- Family house; wood and wood+steel, wood+concrete
- Multi-storey house; steel+concrete, concrete
- Commercial building; steel+concrete, concrete, steel
- Educational building; steel+concrete, concrete
- Governmental building; steel+concrete, concrete
- Religious building; steel+concrete, concrete, wood and combination of wood
- Industrial building; steel+concrete, steel
- Recreation building; wood and combination of wood, steel+concrete
- Transportation building; steel+concrete, steel.

According to the respondents, Wood is a suitable construction material for family house, religious buildings and recreational buildings.

All of the statements in section five of the questionnaire limit the using of wood as a construction material. These barriers can be listed as follows in terms of order of importance:

- Concerns about the robustness of the building
- Concerns about maintenance costs of the building
- Lack of experience
- Lack of knowledge
- Lack of information
- Concerns about the cost of the building
- Lack of skilled workers
- Legislation

According to the Independent-Samples T test results, there was no statistically significant difference between the genders in terms of responses to the statements in this section. Similarly, according to the One-Way ANOVA test results, there is no statistically significant difference between professions in terms of responses to statements.

According to the respondents, Wood is a suitable construction material for 1-3-storey buildings, however, they consider wood unsuitable for 4-7-story buildings. Respondents gave positive support to the following statements (arranged in decreasing order):

- For a sustainable design, material selection is very important.
- People living in buildings built of wooden material feel closer to nature.
- The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).

- I want to live in a wooden house.
- The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).
- Wood is a renewable material.
- Living in wooden buildings can reduce stress.
- The building that constructed with wooden material contributes positively to indoor air quality.
- With sustainable forest management, enough trees can be grown to build wooden houses.
- Wood is a suitable construction material for 1 to 3 storeys buildings.
- Processing of wood is easier than others (concrete, steel, etc.).
- Productivity may increase in wooden buildings.

The statements that respondents were most ambivalent about were:

- Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.
- Wood can emit toxic volatile organic compounds.
- The building that constructed with wooden material has good acoustic and noise insulation.

According to the responses given, in terms of human and environmental health, Wood is thought to be superior to other building materials. In terms of the Independent-Samples T test, no statistically significant difference was detected between the genders. However, according to

the One-Way ANOVA test results, there is a statistically significant difference between the following statements and professions:

- The building that constructed with wooden material has good acoustic and noise insulation; between civil engineers and building inspectors, between architects and building inspectors, between urban planners and building inspector.
- With sustainable forest management, enough trees can be grown to build wooden houses; between civil engineers and architects, between architects and building inspector, between geomatics engineer/geological engineer and building inspectors.
- For a sustainable design, material selection is very important; between civil engineers and building inspectors, between architects and building inspector, between geomatics engineer/geological engineer and building inspectors.

In the construction of multi-storey buildings, the using of wood material compared to materials such as concrete and steel has the following advantages:

- Not polluting the environment,
- Low energy consumption,
- Lightness,
- Fast application,
- To be able to produce easily with prefabricated techniques.

For this reason, first of all, the establishment of regulations that will contribute to the construction of wooden buildings in our country, and its existence as a sustainable alternative should be ensured.

First of all, timber building legislation should be regulated and a standard understanding should be ensured in all local governments. Current issues related to wood construction and wood materials should be added in accordance with fire and earthquake regulations. The zoning law must be regulated to include wooden houses. It should be ensured that the project approvers in the municipalities have sufficient knowledge about the subject of wooden buildings.

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APPENDICES

1.Detailed Reliability Analysis Results for The Second Part of the Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,878	,877	14

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Importance of the characteristics for a construction material: Compatibility with the building	50,73	56,600	,400	,377	,876
Importance of the characteristics for a construction material: Mechanical performance	50,80	56,415	,381	,288	,877
Importance of the characteristics for a construction material: Economic properties	51,21	54,899	,489	,511	,872
Importance of the characteristics for a construction material: Fire properties	50,55	54,906	,545	,651	,870
Importance of the characteristics for a construction material: Availability in the market	51,05	54,233	,481	,464	,873
Importance of the characteristics for a construction material: Earthquake properties	50,32	57,786	,378	,565	,877

Importance of the characteristics for a construction material: Availability of design tools and resources	50,89	52,679	,663	,550	,864
Importance of the characteristics for a construction material: Moisture properties	50,96	52,435	,685	,661	,863
Importance of the characteristics for a construction material: Maintenance properties	51,00	53,600	,646	,522	,865
Importance of the characteristics for a construction material: Aesthetics properties	51,25	52,300	,603	,597	,867
Importance of the characteristics for a construction material: Environmental impacts	51,13	52,511	,608	,655	,866
Importance of the characteristics for a construction material: Vibration properties	50,95	52,706	,590	,662	,867
Importance of the characteristics for a construction material: Acoustic properties	51,57	50,104	,627	,657	,866
Importance of the characteristics for a construction material: Carbon footprint	51,41	53,956	,521	,533	,871

2.Detailed Reliability Analysis Results for The Third Part of the Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,796	,793	14

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Compatibility with the building	35,05	52,997	,527	,427	,774
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Mechanical performance	35,68	51,313	,606	,511	,767
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Economic properties	35,50	52,291	,445	,611	,781
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Fire properties	36,34	53,828	,430	,602	,782
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability in the market	35,52	52,981	,495	,445	,777

Compared to other construction materials (Concrete or Steel), wood as a construction material is: Earthquake properties	35,38	55,766	,262	,470	,797
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Availability of design tools and resources	34,86	55,179	,443	,484	,782
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Moisture properties	35,73	52,454	,531	,412	,774
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Maintenance properties	35,27	51,545	,588	,550	,769
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Aesthetics properties	34,52	59,672	,173	,629	,798
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Environmental impacts	34,68	60,586	,052	,586	,805
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Vibration properties	35,55	51,415	,561	,621	,770
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Acoustic properties	35,46	53,708	,332	,475	,792
Compared to other construction materials (Concrete or Steel), wood as a construction material is: Carbon footprint	35,16	53,519	,332	,467	,793

3. Detailed Reliability Analysis Results for The Fourth Part of the Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,760	,818	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Preferred building material or combination of material, Family house	39,31	44,662	,131	,186	,803
Preferred building material or combination of material, Multi-storey house	36,91	44,306	,545	,441	,732
Preferred building material or combination of material, Commercial building	37,27	41,980	,602	,477	,720
Preferred building material or combination of material, Educational building	37,07	42,995	,484	,639	,733
Preferred building material or combination of material, Governmental building	36,87	43,409	,643	,771	,723
Preferred building material or combination of material, Religious building	37,51	37,551	,487	,445	,731
Preferred building material or combination of material, Industrial building	37,00	41,852	,643	,532	,716
Preferred building material or combination of material, Recreational building	38,31	36,292	,463	,318	,742
Preferred building material or combination of material, Transportation building	37,20	41,904	,475	,376	,732

4. Detailed Reliability Analysis Results for The Fifth Part of the Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,911	,910	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Main barriers for using wood as a building material, Legislation	21,00	26,772	,498	,384	,916
Main barriers for using wood as a building material, Lack of skilled workers	20,72	24,554	,752	,690	,896
Main barriers for using wood as a building material, Lack of knowledge	20,66	22,967	,794	,812	,892
Main barriers for using wood as a building material, Lack of experience	20,64	23,568	,845	,831	,888
Main barriers for using wood as a building material, Lack of information	20,67	23,768	,842	,730	,888
Main barriers for using wood as a building material, Concerns about the cost of the building	20,71	24,632	,730	,670	,898
Main barriers for using wood as a building material, Concerns about the robustness of the building	20,52	25,903	,565	,471	,911
Main barriers for using wood as a building material, Concerns about maintenance costs of the building	20,55	24,743	,670	,614	,903

5. Detailed Reliability Analysis Results for The Final Part of the Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,904	,902	16

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Wood is a suitable construction material for 1 to 3 storeys buildings.	55,15	81,892	,521	,479	,902
Wood is a suitable construction material for 4 to 7 storeys buildings.	57,20	88,197	,383	,431	,904
The construction that constructed with wooden material, is more environmentally friendly and ecological than others (concrete, steel, etc.).	54,70	82,925	,654	,595	,896
People living in buildings built of wooden material feel closer to nature.	54,68	83,101	,638	,680	,896
The building that constructed with wooden material has good acoustic and noise insulation.	55,60	82,346	,562	,596	,899
The building that constructed with wooden material contributes positively to indoor air quality.	54,98	81,373	,697	,617	,894

The building that constructed with wooden material offers a healthier living environment than others (concrete, steel, etc.).	54,72	82,783	,668	,745	,895
Wood is a renewable material.	54,78	88,308	,427	,435	,903
Once cut, wood continues to store the absorbed CO2 throughout its period of utilization.	55,57	88,046	,442	,814	,902
Wood can emit toxic VOCs	55,62	90,003	,323	,827	,905
Processing of wood is easier than others (concrete, steel, etc.).	55,15	84,638	,488	,421	,901
Living in wooden buildings can reduce stress.	54,88	81,190	,761	,743	,892
Productivity may increase in wooden buildings.	55,25	86,258	,520	,463	,900
With sustainable forest management, enough trees can be grown to build wooden houses.	55,10	83,346	,645	,666	,896
For a sustainable design, material selection is very important.	54,65	79,282	,789	,763	,890
I want to live in a wooden house.	54,72	80,003	,700	,662	,894

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