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ÜNİVERSİTE ÖĞRENCİLERİNİN UZAKTAN EĞİTİME DÖNÜK GÖRÜŞLERİNİN VE SANAL RİSK ALGISILARININ İNCELENMESİ

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ÖZ

Bu çalışma, öğretmen adaylarının uzaktan eğitime ilişkin algılarını ve sanal risk algılarını incelemeyi amaçlamaktadır. Bu çalışma, tarama modeline dayanan nicel bir araştırmadır. Bu araştırma ilişkisel tarama modeline dayanarak yapılmış betimsel bir çalışmadır. Örneklemini, Ondokuz Mayıs Üniversitesi ve Iğdır Üniversitesi'nde uzaktan eğitim alan üniversite öğrencilerinden oluşmaktadır. İlk bulguya göre dağılımın, öğretmen adaylarının uzaktan eğitimden çok fazla memnun olamayacaklarını ima eden, sola yatık bir dağılım olduğu bulunmuştur. İkinci olarak, öğretmen adaylarının uzaktan eğitime yönelik cinsiyet yönündeki tutumlarının erkeklerin lehine olduğu bulunmuştur. Üçüncüsü, öğretmen adaylarının sanal risk algısında cinsiyet açısından anlamlı bir fark bulunmadığı, sanal risk algısının cinsiyet değişkeninden bağımsız olduğunu ortaya koymuştur. Dördüncüsü, genel olarak bölümler arasında uzaktan eğitime yönelik tutumlar arasında anlamlı bir fark bulunmamıştır. Beşinci olarak, öğretmen adaylarının sanal risk algısı alt boyutlarında sanal yozlaşma dışında bölüm açısından anlamlı bir farklılık bulunmamıştır. Altıncı olarak, öğretmen adaylarının daha önce uzaktan eğitim alıp almamaları açısından uzaktan eğitime yönelik tutumları arasında anlamlı bir fark bulunmamıştır. Yedinci olarak, öğretmen adaylarının sanal risk algısı arasında daha önce uzaktan eğitim alıp almamaları açısından anlamlı bir fark bulunmamıştır. Sekizinci bir sonuç olarak, sanal yolsuzluk ve sanal fırsat ile uzaktan eğitim tutumları arasında düşük düzeyde negatif anlamlı bir ilişki olduğu bulunmuştur. Son olarak, öğretmen adaylarının uzaktan eğitime yönelik tutumları ile ilgili en önemli faktörün sanal fırsat alt boyutu olduğu bulunmuştur.

Anahtar Kelimeler: Risk algısı, uzaktan eğitim, öğretmen adayları.

INVESTIGATION OF UNIVERSITY STUDENTS' VIEWS ON THE DISTANCE EDUCATION PRACTICE AND VIRTUAL RISK PERCEPTIONS

ABSTRACT

This study aims to investigate the perception of students toward distance education and their virtual risk perception. This study is quantitative research based on a survey model. This research is a descriptive study made with relational scanning models. The population consists of students and university students who take distance education in Ondokuz Mayıs University and Iğdır University. Distance education in coronavirus pandemic is not the same as previous distance education practices since it was compulsory because of the pandemic. According to the first finding, it is found that that the distribution is a little bit negatively skewed distribution implying that students might not be so satisfied with distance education. Secondly, it is found that the attitudes of students toward distance education in terms of gender are in favor of males. Thirdly, it is found that no significant differences in the virtual risk perception of students in terms of gender indicating that virtual risk perception is independent of gender variables. Fourthly, no significant difference is found among the departments in general in terms of attitudes toward distance education.

Fifthly, no significant differences of the sub-dimensions of virtual risk perception of students are found in terms of the department except for virtual corruption. Sixthly, no significant difference is found among the attitudes of students toward distance education in terms of whether they previously took distance education or not. Seventhly, no significant difference is found among virtual risk perceptions of students in terms of whether they previously took distance education or not. As an eighth result, it is found that there is a low level negative significant relationship between virtual corruption and virtual opportunity with distance education attitudes. Finally, it is found that the most important factor related to the attitudes of students toward distance education is the virtual opportunity sub-dimension.

Keywords: Risk perception, distance education, students.

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INTRODUCTION

Distance Learning; a model of learning, which allows people to receive training at their desired location and in any period on information technology tools. The first example of distance education in the international arena took place in the UK by letter. After the development of technology and communication tools, it became widespread all over the World. As a result of the technological developments, communication has no longer been connected to a certain time and place and its existing borders have resulted in new patterns of education which is in effect a form of communication. Technological innovation, which constitutes the basis for the idea of distance education and the starting point, has paved the way in different times and spaces for the formation of individuals and collective structures. This spaceless and timeless side of education has expanded and become the underlying principle of architecture in today's learning processes (Elitaş, 2017:6). However, recently its necessity has been come to the fore because of the coronavirus epidemic. All around the World, the education process has been cut down and be continued through cyber platforms with distance learning. Both technical problems and individuals' (students, teachers, etc.) unpreparedness has resulted in some particular problems for the continuity of distance education. In this process, similar measures were taken in different countries in terms of education and training practices (Yaman, 2021; Yılmaz, 2020). As a result of the studies on Distance Education by YÖK (Yamamoto and Altun, 2020);

- The current capacity of Turkish Higher Education Institutions has been evaluated and the planning has been completed by examining the measures taken in the higher education institutions of the countries with the epidemic in the face of the Covid-19 epidemic that YÖK started a while ago.
- As of Monday, March 23, 2020, it has been decided to start a distance education process with digital opportunities in all our universities that have distance education capacity.
- For universities that do not have this capacity yet, it has been decided that the open course materials pool created on March 23, 2020, will be opened to all universities.
- It has been stated that digital opportunities and distance education methods will be used in the theoretical courses in the application-based programs, and the application courses will be given at the most appropriate time, including the extension of the calendar determined by our universities.
- This practice and approach at the associate and undergraduate level will also be provided at the graduate level; Provided that they are auditable, necessary studies will be carried out to ensure that there is no interruption in these processes by using distance education and digital opportunities.

In this respect, it is an important opportunity to examine the perception of the students in terms of distance education for providing better and qualified educational environments. Turkey is also among the countries which conduct distance education because of the epidemic in all levels of educational processes. Hence it is important to view the perceptions of stakeholders of this process for providing better services.

The limitless internet network offered throughout the globe and the unlimited use of the opportunities (networks, tools, etc.) offered by mobile telephones, which are the major aspects of today's lives. Therefore, this cyber-world has been brought many opportunities as well as risks alongside. One of the phenomena brought by web technologies is risk perception in this respect. Internet addiction, cyberbullying are regarded among those risk elements. In this respect, it is important to investigate the virtual risk perception of the students especially in these coronavirus pandemic times in which most of the educational processes are tried to be handled via online and distance education. Therefore, this study aims to investigate the perception of students toward distance and education and their virtual risk perception. Hence, the following questions were sought in this study:

1- What are the descriptive characteristics of the attitudes of students toward distance education?
2- Do the attitudes of students toward distance education differ in terms of gender?
3- Does the virtual risk perception of students differ in terms of gender?
4- Do the attitudes of students toward distance education differ in terms of their departments?
5- Does the virtual risk perception of students differ in terms of their departments?
6- Do the attitudes of students toward distance education differ in terms of whether they previously took distance education or not?

7- Does the virtual risk perception of students differ in terms of whether they previously took distance education or not?
8- What is the neural network and path model for the analysis of the attitudes of students toward distance education?

METHODOLOGY

Design

This study is quantitative research based on a survey model. This research is a descriptive study made with relational scanning models. A survey is a research approach that aims to describe a situation that exists in the past or still as it exists (Karasar, 2000). This study was conducted based on the ethical consent of Iğdır Unıversıty Scıentıfic Research And Publıcatıon Ethıcs Commıttee in 22.06.2020 at the document of 2020/17.

Sample and participants

The population consists of university students who take distance education in Ondokuz Mayıs University and Iğdır University. The distribution of those students according to their gender and departments is given in Table 1. The population was selected based on convenient sampling due to the conditions of coronavirus epidemics such as difficulties in reaching a great audience because of the communicational problems. It should be noted that the main limitation of this study is the population. The larger population can give more clear picture regarding this issue.

Table 1. Distribution of the participants according to their gender and departments

		Math	Primary school	Special education	Preschool	Turkish	Social Sciences	Blank	Music	Foreign Language Teaching	Total
Gender	Male	15	12	22	4	0	5	1	3	0	62
	Female	18	32	39	10	7	22	0	1	7	136
Total		33	44	61	14	7	27	1	4	7	198

Ethical considerations

Iğdır University Ethics Committee approved the study (20.20.17). Permission to collect data from students was granted from Science and Arts Faculty's dean. The whole students who participated in this research filled the informed consent form.

Measurement tools

In this study, the Virtual World Risk Perception Scale developed by Arslankara and Usta (2018) measures a general structure (virtual risk perception) and five sub-dimensions named by experts (virtual corruption, virtual depreciation, virtual possibility, virtual opportunity, and virtual awareness) was used. Secondly, the Attitude towards Distance Education Scale was developed by Yağan (2021).

Data analysis

In the analysis of the data, parametric and non-parametric independent samples test was used. Thirdly, artificial neural network analysis having two layers was performed for the analysis of the model in this respect. Spearman's rho correlation constant was used to analyze the virtual risk perception and attitude toward distance education. Path analysis in AMOS was also used to confirm the proposed model based on normalized importance values and correlation constants.

RESULTS

The descriptive analysis of the attitudes of students toward distance education

While the highest score that can be obtained from the attitudes toward distance education is 175, the lowest score is 35. It shows that the individual applying the high score scale has more positive attitudes towards distance education. When the descriptive nature of the results was examined Kolmogorov-Smirnov analysis shows that the data is normally distributed and the skewness (.447-.173) and kurtosis (.190-.344) values support this finding. However, it should be noted that the distribution is a little bit negatively skewed distribution implying that students are not so satisfied with distance education.

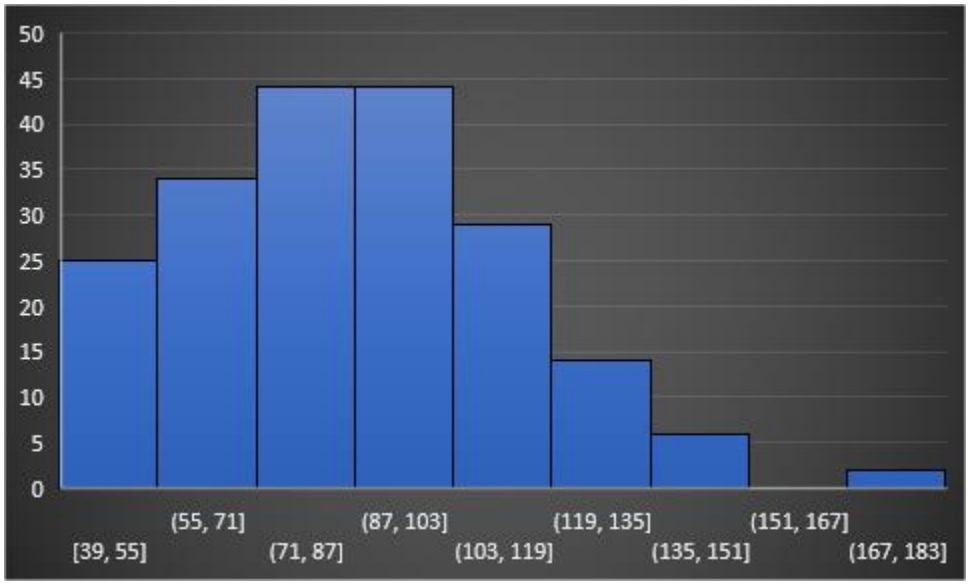

Figure 1. The distribution of the attitudes of students toward distance education

Although data is normally distributed this negative tendency might imply their dissatisfaction with distance education in this regard.

Findings for the attitudes of students toward distance education in terms of gender

Since the distribution of the values of students toward distance education is normal (normally distributed), an independent sample test was performed for the analysis of the data in terms of gender. Levene test result implies that the variances of the test are equal (p=,848) hence we can look at the p-value of the t-test. According to this p-value, it can be said that there are significant differences in the attitudes of students toward distance education in terms of gender (Table 2).

Table 2. Independent Samples Test for the attitudes of students toward distance education in terms of gender

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Distance education	Equal variances assumed	,848	,358	2,462	196	,015	9,86144	4,00624	1,96056	17,76231
	Equal variances not assumed			2,350	106,101	,021	9,86144	4,19567	1,54320	18,17968

Group statistics show that the difference in the attitudes of students toward distance education in terms of gender is in favor of males which shows that male students have higher mean values than female students (Table 3).

Table 3. Group statistics for the attitudes of students toward distance education in terms of gender

Group Statistics					
	gender	N	Mean	Std. Deviation	Std. Error Mean
Distance Education	male	62	93,5920	28,36940	3,60292
	female	136	83,7306	25,07354	2,15004

Findings for the virtual risk perception of students in terms of gender

Since the distribution of the values of risk perception of students is not normally distributed, a non-parametric independent sample test was performed for the analysis of the data in terms of gender. According to the p-value of the Mann-Whitney U Test, it can be said that there are no significant differences in the virtual risk perception of students in terms of gender (Table 4).

Table 4. Mann-Whitney U results for the virtual risk perception of students in terms of gender

Test Statistics					
	Virtual corruption)	Virtual depreciation)	Virtual Possibility	Virtual opportunity	Virtual Awareness
Mann-Whitney U	4124,500	3990,500	4054,000	3702,000	4154,000
Wilcoxon W	6077,500	13306,500	13370,000	5655,000	6107,000
Z	-,245	-,605	-,436	-1,386	-,167
Asymp. Sig. (2-tailed)	,806	,545	,663	,166	,867
a. Grouping Variable: gender					

Findings for the attitudes of students toward distance education in terms of their departments

Since the distribution of the values of students toward distance education is normal (normally distributed), an ANOVA test was performed for the analysis of the data in terms of departments. Levene test results imply that the variances of the groups are equal and we can say that homogeneity of variance is provided hence we can look at the p-value of the ANOVA-test. According to this p-value, it can be said that there are significant differences among the attitudes of students toward distance education in terms of their departments (Table 5).

Table 5.ANOVA test results from the attitudes of students toward distance education in terms of their department

ANOVA					
SMEAN(distance education)					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10154,320	7	1450,617	2,154	,040
Within Groups	127953,406	190	673,439		
Total	138107,726	197			

However, when the multiple comparison table was examined, it is seen that there is only one significant difference among departments which is between special education and social science education. Therefore we can conclude that there is no significant difference among the departments in general.

Findings for the virtual risk perception of students in terms of their departments2

Since the distribution of the values of risk perception of students is not normally distributed, a non-parametric independent sample test was performed for the analysis of the data in terms of departments. According to the p-value of the Kruskal-Wallis Test, it can be said that there are no significant differences in the sub-dimensions of virtual risk perception of students in terms of the department except for virtual corruption (Table 6).

Table 6. Kruskal-Wallis test results

Test Statistics[b]					
	Virtual Corruption	Virtual Depreciation	Virtual Possibility	Virtual Opportunity	Virtual Awareness
Kruskal-Wallis H	22,877	9,049	11,173	14,584	3,833
Df	8	8	8	8	8
Asymp. Sig.	,044	,338	,192	,068	,872
a. Kruskal Wallis Test					
b. Grouping Variable: department					

When the Mann-Whitney U test performed to determine which groups have significan differences in terms of mean ranks, it is found that there is a significant difference between mathematics (28,11) and preschool(14,32) departments (p=0.002), between primary school (33,01) and pre-cchool (18,41) departments (p=0.005), between special education(40,89) and preschool departments (25,89) (p=0.016), between preschool (14,25) and social sciences (24,50) departments (p=0.008), between preschool (8,46) turkish (16,07) departments (p=0.006).

Findings for the attitudes of students toward distance education in terms of whether they previously took distance education or not

Since the distribution of the values of students toward distance education is normal (normally distributed), an independent sample test was performed for the analysis of the data in terms of whether they previously took distance education or not Levene test results imply that the variances of the groups are equal and we can say that homogeneity of variance is provided hence we can look at the p-value of the ANOVA-test (p=,851). According to this p-value, it can be said that there is no significant difference among the attitudes of students toward distance education in terms of whether they previously took distance education or not (Table 3.6).

Table 7. Independent Samples Test for the attitudes of students toward distance education in terms of whether they previously took distance education or not

		Levene's Test for Equality of Variances				
		F	Sig.	t	Df	Sig. (2-tailed)
Distance education)	Equal variances assumed	,035	,851	-,288	196	,774
	Equal variances not assumed			-,294	55,090	,770

Group statistics for the attitudes of students toward distance education in terms of whether they previously took distance education or not imply that there is no significant difference for whether they previously took distance education or not

Table 8. Group statistics for the attitudes of students toward distance education in terms of whether they previously took distance education or not

Group Statistics

	Preveouslytakingdistanceeducation	N	Mean	Std. Deviation	Std. Error Mean
SMEAN(distanceeducation)	Yes	37	85,6871	25,83371	4,24704
	No	161	87,0785	26,69548	2,10390

Findings for the virtual risk perception of students in terms of whether they previously took distance education or not

Since the distribution of the values of risk perception of students is not normally distributed, a non-parametric independent sample test was performed for the analysis of the data in terms of whether they previously took distance education or not.

Table 9. Mann-Whitney U results for the virtual risk perception of students in terms of gender

Test Statistics

	Virtual Corruption	Virtual Depreciation	Virtual Possibility	Virtual Opportunity	Virtual Awareness
Mann-Whitney U	2665,500	2958,000	2834,000	2637,500	2789,500
Wilcoxon W	3368,500	15999,000	15875,000	15678,500	15830,500
Z	-,999	-,065	-,462	-1,094	-,606
Asymp. Sig. (2-tailed)	,318	,948	,644	,274	,545

a. Grouping Variable: preveously taking distance education

According to the p-value of the Mann-Whitney U Test, it can be said that there are no significant differences in the sub-dimensions of virtual risk perception of students in terms of whether they previously took distance education or not (Table 3.9).

Findings for the correlation of the attitudes of students toward distance education with virtual risk perception of students

When the spearman's rho correlation coefficient was examined among sub-dimensions of the attitudes of students toward distance education with virtual risk perception of students, it is found that there is a low level negative significant relationship between virtual corruption and virtual opportunity with distance education attitudes at 0.01 significant level and there is a negative significant correlation between virtual depreciation and distance education attitudes at 0.05 level (Table 10). It is also found that sub-dimensions of virtual risk perception are significantly correlated at 0.01 level.

Table 10. Spearman's rho correlation results for the attitudes of students toward distance education with virtual risk perception of students

			Virtual Depreciation	Virtual Possibility	Virtual Opportunity	Virtual Awareness	Distance Education
Spearman's rho	Virtual corruption	Correlation Coefficient	,442**	,346**	,185**	,403**	**-,269****
		Sig. (2-tailed)	,000	,000	,009	,000	,000
	Virtual depreciation	Correlation Coefficient		,509**	,334**	,596**	**-,142***
		Sig. (2-tailed)		,000	,000	,000	,046
	Virtual Possibility	Correlation Coefficient			,318**	,504**	-,076
		Sig. (2-tailed)			,000	,000	,285
	Virtual oppornutiy	Correlation Coefficient				,428**	**-,212****
		Sig. (2-tailed)				,000	,003
	Virtual awareness	Correlation Coefficient					-,057
		Sig. (2-tailed)					,423

Neural Network model for the analysis of the attitudes of students toward distance education

Since it is impractical to put raw SPSS neural network form there, we substitute the neural network diagram of our model below Figure 2 As seen in Figure 2 virtual corruption, virtual depreciation, virtual possibility, virtual opportunity, and virtual awareness are taken as factors, and department, gender, and the information about whether they previously took distance education are covariates and the main target is distance education.

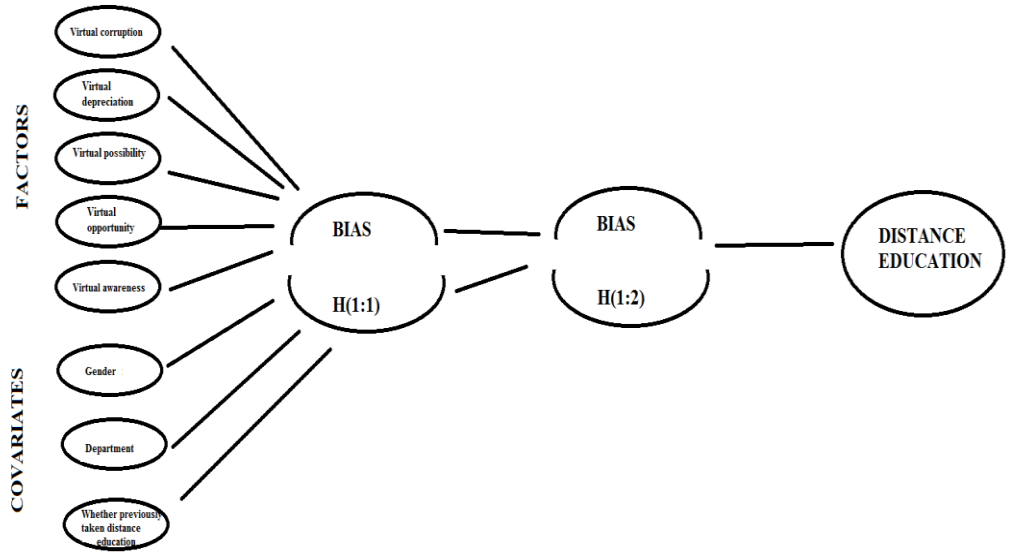

Figure 2. A neural network model for the analysis

The neural network shown in Figure 2 is made up of two hidden layers. The activation function is the sigmoid function and the error function is a sum of squares. In optimization, the gradient descent algorithm is used as the optimization algorithm. To uncover complicated connections and extract more value from your data, IBM SPSS employs nonlinear data modeling. One should use multilayer perceptron (MLP) or radial basis function (RBF) techniques to benefit from the different features that these machine learning methods provide[***]. Neural networks can determine the actual function by incorporating both simple and complex characteristics into their internal representations. Before a neural network computes a non-linear function as the input of the next layer, an affine transformation is performed to the set of hidden layer inputs. Until the output layer is reached, the procedure will not be complete[****]. Adaptation to changes in the environment is enabled by using connection weights that have been optimized using an artificial neural network. A software algorithm designed to solve a problem may be capable of adjusting itself to keep up with changes in the problem, and in the event of constantly evolving the problem, the algorithm may be active at the same time. Neural networks, because of their interconnectivity, may result in different outcomes for each calculating calculation according to the patterns (Tepehan, 2011). Therefore, neural network structure was performed eight times without changing the parameters. In the first trial, 147 of the data was used for training 51 of them were used in testing. In the second trial, 137 of the data was used for training 61 of them were used in testing. In the third trial, 132 of the data was used for training 66 of them were used in testing. In the fourth trial, 144 of the data was used for training 54 of them were used in testing. In the fifth trial, 140 of the data was used for training 58 of them were used in testing. In the sixth trial, 128 of the data was used for training 69 of them were used in testing. In the seventh trial, 133 of the data was used for training 65 of them were used in testing. In the eight trial, 140 of the data was used for training 58 of them was used in testing.

[***] https://www.ibm.com/products/spss-neural-networks Erişim Tarihi: 21.06.2021

[****] https://towardsdatascience.com/coding-neural-network-forward-propagation-and-backpropagtion-ccf8cf369f76?gi=d49266410d1b retrieved from 21.06.2021

Table 11. Normalized importance values for environmental problems attitude

Variable	Normalized Importance								
	1'st trial	2'nt trial	3'rd trial	4'th trial	5'th trial	6'th trial	7'th trial	8'th trial	Average
Gender	15,8%	14,2%	18,5%	15,9%	7,9%	15,0%	22,6%	19,0%	16,1%
Department	35,8%	64,4%	25,9%	43,7%	26,4%	25,2%	22,2%	20,8%	33,1%
Preveouslytakingdistanceeducation	8,8%	10,8%	6,0%	9,3%	2,4%	14,4%	3,8%	2,0%	7,2%
Virtualcorruption	75,0%	81,2%	100,0 %	66,7%	87,3%	61,6%	77,6%	100,0 %	81,2%
Virtualdepreciation	27,4%	84,5%	29,0%	77,3%	67,4%	84,0%	57,4%	36,6%	57,9%
Virtualpossibility	48,9%	31,9%	3,8%	15,6%	20,6%	55,0%	8,5%	7,9%	24,0%
Virtualopportunity	100,0 %	100,0 %	80,7%	100,0 %	100,0 %	100,0 %	100,0 %	83,5%	95,5%
Virtualawareness	38,8%	33,9%	13,3%	11,1%	45,6%	29,3%	3,6%	26,4%	25,3%

Independent variable importance can be visualized as in Figure 3. It can be seen that the most important factor related to the attitudes of students toward distance education is the virtual opportunity sub-dimension. Virtual corruption can be regarded as the second important factor for our model (>80%). The third important factor can be regarded as a virtual depreciation (>50%). A path model was created in the Amos based on neural network analysis but the model is found to be not compatible with the index values.

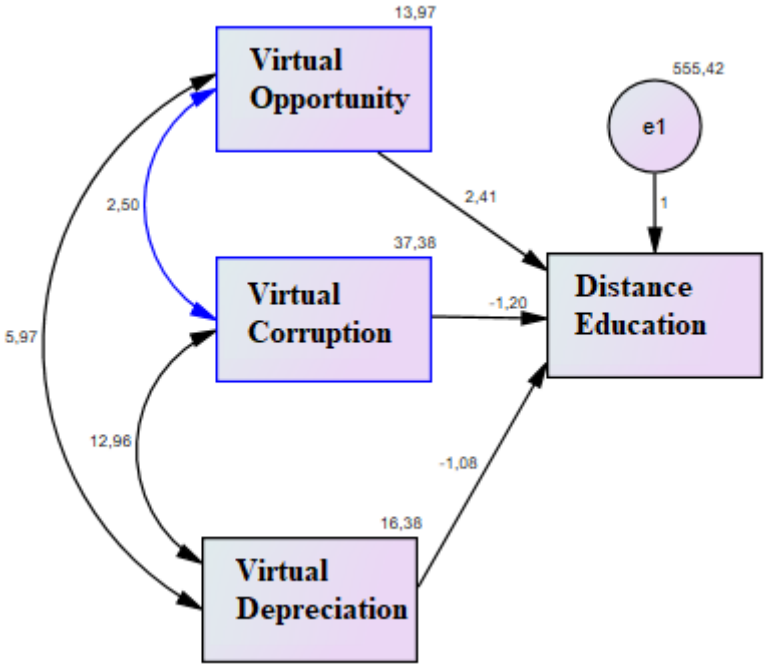

Figure 3. Path model based on neural network analysis

Although the model fit is not compatible with the fit indexes. Regression weights imply that there is some regression between virtual possibility with distance education and virtual corruption with distance education as given in Table 12.

Table 12. Regression weights

			Estimate	S.E.	C.R.	P	Label
Distance education	<---	Virtual possibility	2,413	,493	4,895	***	
Distance education	<---	Virtual corruption	-1,198	,325	-3,686	***	
Distance education	<---	Virtual depreciation	-1,083	,531	-2,040	,041	

DISCUSSION

According to the first finding, it is found that that the distribution is a little bit negatively skewed distribution implying that students might not be so satisfied with distance education. When the literature is reviewed, some findings suggest that students were satisfied with distance education while others don't support this. For instance, in the study of Demirli (2002), it was found that students had positive views about web-based distance education. They adopted the web-based distance education environment due to the independence of this method from time and space was expressed and they also pointed out that it eliminated shyness in the classroom environment. In the research of Özkul and Aydın (2012) half of the students who participated in the survey preferred blended learning to face-to-face and distance education. In a study conducted with 76 lecturers and 277 students, Tanyıldızı and Semerci (2005) tried to determine the views of students and lecturers who participated in online distance education. According to the findings of this study, it can be inferred that online distance education can be used to support formal education, is not more effective than traditional education, and takes more time. The diversity in the opinions of students regarding distance education might be related to population characteristics. However, it should be noted that distance education in the corona-virus pandemic shouldn't be the same as the previous distance education because distance education in the coronavirus pandemic has to be replaced by actual face-to-face education without some required preparations. Hence, the advantages and disadvantages of distance education were changed. As pointed out by Özdoğan and Berkant (2020), it can be thought that the lack of readiness for the process, which is a finding regarding the disadvantages of distance education in the pandemic process obtained from their research, is related to the sudden emergence of the disease and the rapid spread of the disease, and therefore a rapid and sudden transition to the distance education process.

Secondly, it is found that the attitudes of students toward distance education in terms of gender are in favor of males. According to the findings of Kukul (2019) the satısfaction levels of students in information, technologies-based distance education didn't differ in terms of gender. Similar findings were indicated by Mercan (2018) in terms of the learning readiness levels of students for distance education. The assumption of the researchers in this study is also that no significant difference should be found. The researchers in this study thought that there might be other mediating effects that are the result of this difference. However, it should be noted that some research supports our findings such as (Berkant, 2013; Fidan, 2016; Korkmaz and Altun, 2013; Koohang, 1989). It could be assumed that the high level of male student attitudes and technology instruments are derived from male students' responsibilities in terms of gender roles imposed by society because they can work in their free time even in their home more easily thanks to distance education. It should be noted that Öz Ceviz, Tektaş, Basmacı, Tektaş (2020) found that there was a significant difference between their views on the appropriateness of the course duration in distance education. Accordingly, women find the course duration more appropriate in distance education. This implies that our findings can be related to population characteristics as well.

Thirdly, it is found that no significant differences in the virtual risk perception of students in terms of gender indicating that virtual risk perception is independent of gender variables. However, some research suggests that there are significant differences in terms of virtual risk perception according to gender as in (Arslankara, 2017; Ayas and Horzum, 2011; Filiz and Yeşildal, 2019; Odacı and Çelik, 2013).

Fourthly, no significant difference is found among the departments in general in terms of attitudes toward distance education. This can be explained by the fact that distance education is used for all students irrespective of departments. However, it should be noted that there should be some significant differences in terms of departments since some branches are more dependent on the application and interaction physically than the others. The possible reason why there is no significant difference is that this study was conducted at the beginning of the distance education practice in the COVID-19 process.

Fifthly, no significant differences of the sub-dimensions of virtual risk perception of students are found in terms of the department except for virtual corruption which seems that stems from special education and pre-school education departments. This can be explained by students in those departments who might consider possible harms of the virtual world for their students' characteristics. Students in special education and pre-school education are more vulnerable to risks posed by the virtual world because either they are so young or they are more inclined to be persuaded by others and teacher candidates may be aware of this fact.

Sixthly, no significant difference is found among the attitudes of students toward distance education in terms of whether they previously took distance education or not. This result also can be explained by the fact that distance education technology was used for all students in this pandemic, hence it wasn't optional. Additionally, distance education practice is partially different from the previous distance education practices so that it doesn't make such a difference.

Seventhly, no significant difference is found among virtual risk perceptions of students in terms of whether they previously took distance education or not. This is an expected result because distance education should be independent of virtual risks because there are no virtual risks in distance education except for some probable problems regarding privacy issues or problems.

As an eighth result, it is found that there is a low level negative significant relationship between virtual corruption and virtual opportunity with distance education attitudes at 0.01 significant level and there is a negative significant correlation between virtual depreciation and distance education attitudes at 0.05 level. It is also found that sub-dimensions of virtual risk perception are significantly negatively correlated at 0.01 level. As it is expected, a negative correlation or no correlation should be found between virtual risks and distance education because there are no virtual risks in distance education.

It can be seen that the most important factor related to the attitudes of students toward distance education is the virtual opportunity sub-dimension. Looking at the items of virtual opportunity sub-dimension, this illustrates that teachers and teachers-in-training consider the discussion in virtual environments to be relaxing and calming in the distance education process, as they believe they can build cooperation-solidarity and improve critical thinking skills while using virtual environments. Virtual corruption can be regarded as the second important factor for our model (>80%). The third important factor can be regarded as a virtual depreciation (>50%). A path model was created in the Amos based on neural network analysis but the model is found to be not compatible with the index values so that there is no casual relationship among those variables and distance education. It should be noted that, however, virtual risk perceptions outweigh gender, department, and previous experience with distance education so that comparing to these dimensions they are more important.

CONCLUSION AND RECOMMENDATIONS

Distance education in coronavirus pandemic is not the same as previous distance education practices since it was compulsory because of the pandemic. Therefore more researches should be conducted to reveal the distance education perception as well as virtual risks in the context of this pandemic. More quantitative and qualitative data can only show the real rationale behind the perceptions of students in this subject.

For subsequent studies, different samples and different research techniques will be used. Different measurement tools will be also used for more deep analyses. Especially qualitative research techniques can be used to understand the real effects of coronavirus pandemic on distance education.

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Uzun Öz

Eğitimde mekânsız ve zamansız yanı genişlemiş ve günümüz öğrenme süreçlerinde mimarlığın temel ilkesi haline gelmiştir. Son zamanlarda koronavirüs salgını nedeniyle gerekliliği bu durumu daha da pekiştirmiştir. Tüm dünyada uzaktan eğitim ile eğitim süreci kısaltılmış ve siber platformlar üzerinden devam ettirilmiştir. Hem teknik sorunlar hem de bireylerin (öğrenci, öğretmen vb.) hazırlıksızlığı, uzaktan eğitimin sürekliliği açısından belirli sorunlar yaşanmasına neden olmuştur. Bu süreçte eğitim ve öğretim uygulamaları açısından farklı ülkelerde benzer önlemler alınmıştır. Bu nedenle bu çalışma, öğretmen adaylarının uzaktan eğitime ilişkin algılarını ve sanal risk algılarını incelemeyi amaçlamaktadır. Bu çalışma, tarama modeline dayanan nicel bir araştırmadır. Bu araştırma ilişkisel tarama modeline dayanarak yapılmış betimsel bir çalışmadır. Örneklemini, Ondokuz Mayıs Üniversitesi ve Iğdır Üniversitesi'nde uzaktan eğitim alan üniversite öğrencilerinden oluşmaktadır. Bu çalışma, Iğdır Üniversitesi Bilimsel Araştırma ve Yayın Etiği Kurulu'nun 22.06.2020 tarihli 2020/17 tarihli belgesindeki etik onamına dayalı olarak yapılmıştır. İlk bulguya göre dağılımın, öğretmen adaylarının uzaktan eğitimden çok fazla memnun olamayacaklarını ima eden, sola yatık bir dağılım olduğu bulunmuştur. Bu çalışmanın bulgularına göre çevrimiçi uzaktan eğitimin örgün eğitimi desteklemek için kullanılabileceği fakat geleneksel eğitimden daha etkili olmadığı ve daha fazla zaman aldığı söylenebilir. Öğrencilerin uzaktan eğitime ilişkin görüşlerindeki çeşitlilik, örneklem özellikleri ile ilgili olabilir. Ancak, korona virüs pandemisinde uzaktan eğitimin bir önceki uzaktan eğitimle aynı olmaması gerektiğine göz önüne alınmalıdır çünkü koronavirüs pandemisinde uzaktan eğitimin yerini bazı gerekli hazırlıklar yapılmadan gerçek yüz yüze eğitim almak zorunda kalınmıştır. Böylece uzaktan eğitimin avantajları ve dezavantajları değişmiştir. Uzaktan eğitimin pandemi sürecindeki dezavantajlarına ilişkin diğer araştırmalarında vurgulandığı gibi sürece hazırlıklı olunmamasının hastalık ve hastalığın hızla yayılması ve dolayısıyla uzaktan eğitim sürecine hızlı ve ani bir geçiş de bu durumda etkili olmuş olabilir. İkinci olarak, öğretmen adaylarının uzaktan eğitime yönelik cinsiyet yönündeki tutumlarının erkeklerin lehine olduğu bulunmuştur. Üçüncüsü, öğretmen adaylarının sanal risk algısında cinsiyet açısından anlamlı bir fark bulunmadığı, sanal risk algısının cinsiyet değişkeninden bağımsız olduğunu ortaya koymuştur. Dördüncüsü, genel olarak bölümler arasında uzaktan eğitime yönelik tutumlar arasında anlamlı bir fark bulunmamıştır. Bu durum uzaktan eğitimin bölüm farkı gözetmeksizin tüm öğrenciler için kullanılmasıyla açıklanabilir. Ancak bazı branşlar fiziksel olarak diğerlerine göre daha fazla uygulamaya ve etkileşime bağımlı olduklarından bölümler açısından önemli farklılıklar olması gerektiği unutulmamalıdır. Anlamlı bir fark olmamasının olası nedeni, bu çalışmanın COVID-19 sürecinde uzaktan eğitim uygulamasının başlangıcında yapılmış olmasıdır. Beşinci olarak, öğretmen adaylarının sanal risk algısı alt boyutlarında sanal yozlaşma dışında bölüm açısından anlamlı bir farklılık bulunmamıştır. Bu, sanal dünyanın olası zararlarını öğrencilerinin özellikleri için düşünebilecek bölümlerdeki öğrenciler tarafından açıklanabilir. Özel eğitim ve okul öncesi eğitimdeki öğrenciler ya çok küçük olduklarından ya da başkaları tarafından ikna edilmeye daha meyilli olduklarından sanal dünyanın oluşturduğu risklere karşı daha savunmasızdırlar ve öğretmen adayları bu gerçeğin farkında olabilirler. Altıncı olarak, öğretmen adaylarının daha önce uzaktan eğitim alıp almamaları açısından uzaktan eğitime yönelik tutumları arasında anlamlı bir fark bulunmamıştır. Bu sonuç, pandemi sürecinde tüm öğrenciler için uzaktan eğitim teknolojisinin kullanılmasıyla da açıklanabilir, dolayısıyla isteğe bağlı değildi. Ayrıca uzaktan eğitim uygulaması, önceki uzaktan eğitim uygulamalarından kısmen farklı olduğu için böyle bir fark yaratmayabilir. Yedinci olarak, öğretmen adaylarının sanal risk algısı arasında daha önce uzaktan eğitim alıp almamaları açısından anlamlı bir fark bulunmamıştır. Bu beklenen bir sonuçtur çünkü uzaktan eğitim sanal risklerden bağımsız olmalıdır çünkü uzaktan eğitimde mahremiyetle ilgili bazı olası problemler veya endişeler dışında sanal risk hissedilmediği anlamına gelebilir. Sekizinci olarak, uzaktan eğitim tutumları ile sanal yolsuzluk ve sanal fırsat

arasında 0,01 anlamlı düzeyde düşük düzeyde negatif anlamlı bir ilişki olduğu ve sanal yıpranma ile uzaktan eğitim tutumları arasında 0,05 düzeyinde negatif anlamlı bir ilişki olduğu bulunmuştur. Ayrıca sanal risk algısının alt boyutlarının 0.01 düzeyinde anlamlı bir şekilde negatif yönde ilişkili olduğu bulunmuştur. Beklendiği gibi, uzaktan eğitimde sanal riskler olmadığı için sanal riskler ile uzaktan eğitim arasında negatif bir korelasyon olmalı veya korelasyon bulunmamalıdır. Öğrencilerin uzaktan eğitime yönelik tutumları ile ilgili en önemli faktörün sanal fırsat alt boyutu olduğu görülmektedir. Sanal fırsat alt boyutunun maddelerine bakıldığında bu durum, öğretmenlerin ve eğitimdeki öğretmenlerin işbirliği-dayanışmayı inşa edebileceklerine ve eleştirelliği artırabileceklerine inandıkları için sanal ortamlardaki tartışmayı uzaktan eğitim sürecinde rahatlatıcı gördüklerini göstermektedir. Sanal yozlaşma, modelimiz için ikinci önemli faktör olarak kabul edilebilir (>%80). Üçüncü önemli faktör sanal yıpranma (>%50) olarak kabul edilebilir. Amos'ta sinir ağı analizine dayalı bir yol modeli oluşturulmuş ancak modelin indeks değerleriyle uyumlu olmadığı ve bu değişkenler ile uzaktan eğitim arasında nedensel bir ilişki bulunmadığı tespit edilmiştir. Bununla birlikte, sanal risk algılarının cinsiyet, bölüm ve uzaktan eğitimle ilgili önceki deneyimlerden daha ağır bastığı ve bu boyutlara kıyasla daha önemli oldukları belirtilmelidir. Koronavirüs pandemisinde uzaktan eğitim, pandemi nedeniyle zorunlu olduğu için önceki uzaktan eğitim uygulamalarıyla aynı değildir. Bu nedenle, bu pandemi bağlamında sanal risklerin yanı sıra uzaktan eğitim algısını ortaya çıkarmak için daha fazla araştırma yapılmalıdır. Daha nicel ve nitel veriler, ancak öğrencilerin bu konudaki algılarının ardındaki gerçek mantığı gösterebilir. Bundan sonraki çalışmalarda farklı örneklemler ve farklı araştırma teknikleri kullanılabilir. Daha derin analizler için farklı ölçüm araçları da kullanılabilir. Koronavirüs pandemisinin uzaktan eğitim üzerindeki gerçek etkilerini anlamak için özellikle nitel araştırma teknikleri kullanılabilir.