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THE EFFECT OF EARTHQUAKE KNOWLEDGE AND RISK PERCEPTION ON SOCIAL SUSTAINABLE EARTHQUAKE AWARENESS

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Abstract

The aim of this study is to examine the relationship between participants earthquake risk perception and knowledge level and sustainable earthquake awareness in terms of various variables. The study is descriptive cross-sectional research. 559 volunteer individuals participated in the study. Relationships between quantitative variables were determined with Pearson correlation analysis. Our research found a significant difference between gender and earthquake risk perception. It has been determined that my disaster experience has an impact on the level of earthquake knowledge. Women were found to have lower earthquake knowledge scores than men. Women were found to have higher earthquake risk perception scores than men. Single people had higher cognitive earthquake risk perception scores than married people. It was found that the earthquake risk perception scores of the disaster survivors were higher than those of the non-survivors. More comprehensive studies may be needed to understand the interaction of gender, marital status, and disaster experience on earthquake knowledge level and risk perception. These studies can contribute to developing more effective education and awareness strategies for the general earthquake preparedness of society.

Keywords: Disaster, Earthquake, Earthquake knowledge level, Risk perception, Sustainable earthquake awareness,

Jel Codes: H80, H84, Q54.

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1. Introduction

Earthquakes resulting from fractures in the Earth's crust can have seriously negative consequences (Rostami-Moez et al., 2020). Türkiye, where the study was conducted, is a country that frequently experiences earthquakes due to its location in the earthquake region (Şenol et al., 2023; Solmaz & Özel, 2012). This situation is clearly reflected in international disaster databases (EM-DAT, 2023). The Kahramanmaraş-centred earthquakes that occurred recently in Türkiye and directly affected 11 provinces may be a current example showing that Türkiye is located in the earthquake region (Disaster and Emergency Management Presidency, 2023). Pre-earthquake preparedness and mitigation efforts are critical to minimize the loss of life and property from earthquakes (Cartwright et al., 2017; Latupeirisa, 2020).

Earthquake preparedness can effectively reduce the loss of life, property, or economic losses that occur due to earthquakes. Existing literature emphasizes that individuals must have a basic level of disaster knowledge to form an effective response to earthquakes (Saizen et al., 2015; Seo et al., 2021). It has been reported that the level of earthquake knowledge of individuals greatly influences their preparedness behavior (Paul & Bhuiyan, 2010; Novak et al., 2019; Aksa et al., 2020; Ao, et al., 2021). It is accepted that the level of earthquake knowledge positively affects individuals earthquake preparedness (Tekeli-Yeşil et al., 2010). Increasing the level of earthquake knowledge may also affect the perception of awareness (Tekin & Dikmenli, 2021). Receiving earthquake training is effective in earthquake awareness (Yildiz et al., 2020). Therefore, awareness training is critical in disaster preparedness (Azim & Islam, 2016).

Awareness training may be key in disaster preparedness (Rogayan & Dollete, 2020; Rogayan et al., 2022). Because it has been reported that awareness training and risk perception affect people's disaster preparedness (Suryaratri et al., 2020; Ao et al., 2021). Risk briefly refers to the probability of an event occurring (Disaster and Emergency Management Presidency, 2014; Hansen et al., 2019). The objective measurement of disaster risks is crucial for disaster management planning. At the same time, it is very important to reveal people's risk perceptions to understand and predict their behavioral changes to disasters to cope with the negative effects of disasters (Haque & Fatema, 2022). Risk perceptions refer to the subjective judgments that people make about the hazards they are or may be exposed to (Kinateder et al., 2015; Cori et al., 2020), and these judgments have been evaluated to have a fundamental impact on people's behavior before, during, and after disasters (Rohrmann, 2008; Fernandez et al., 2018). Studies have shown that disaster education has a positive effect on risk perception (Wang et al., 2022)

and risk perception significantly affects earthquake preparedness (Kiani et al., 2022). Therefore, whether the level of earthquake knowledge and risk perception affects sustainable earthquake awareness is considered an important question to be answered. The fact that there are limited studies in the current literature examining individuals earthquake risk perception, knowledge level and sustainable earthquake awareness in relational terms and that they seek to answer this question has made the subject worth researching. In this context, this study aimed to investigate how the earthquake knowledge levels and risk perceptions of individuals in Türkiye who frequently encounter earthquakes affect their sustainable earthquake awareness.

2. Methods

In this research, quantitative research methods were used and it was designed in a descriptive way. This type of research aims to observe events, individuals or conditions as they are and to define natural situations without manipulating variables (Siedlecki, 2020). Since this research aims to examine the situation of a group or event at a certain time and to determine the relationships that exist in this time period, it was carried out as cross-sectional research (Pandis, 2014; Kesmodel, 2018).

2.1. Study Design

Please explain the study design by adding more information. The study is descriptive cross-sectional research.

2.2. Population and Sample

The population of the research consists of individuals 18 years of age or older living in Türkiye. Individuals were selected using a simple random sampling method. In this sampling method, each element constituting the universe has an equal chance of being a sample and the weight to be given to each element during the calculation is the same (Arıkan, 2004; 141). Since the number of individuals over 18 living in Türkiye in the population is unknown, an unrestricted population sample calculation formula was used in the sample size calculation (Smith, 2013). According to this calculation, the sample size is calculated as 384 people with an acceptable 5% margin of error and 95% confidence interval. The number of individuals who voluntarily participated in this study during the data collection process was 559. People over 18 years of age, who were able to express themselves, were willing to participate voluntarily, and agreed to answer questions openly were included in the study.

2.3. Data Collection

Study data was collected in October, October, and November 2023. "Personal data form", "Earthquake risk perception scale", "Earthquake knowledge level scale" and "Sustainable earthquake awareness scale" were used as data collection tools.

Personal data form includes information such as age, marital status, disaster experience and gender.

Earthquake risk perception scale: Earthquake risk perception scale: Mızrak et al. (2021). The scale includes eight items in total. The scale was prepared as a 5-point Likert. Cronbach's alpha of the scale was determined as 0.857.

Earthquake knowledge level scale: This scale scale was developed by Genç and Sözen (2022). The scale is designed as a 5-point Likert and includes 19 items. The purpose of the scale is to determine individuals awareness levels of earthquakes. There are no reverse-scored items in the scale, and the scores that can be obtained vary between 19 and 95. A high score denotes a high degree of topic awareness. Following the scale's reliability examination, the first sub-dimension's Cronbach's alpha internal consistency coefficient was determined to be 0.877, the second sub-dimension to be 0.841, and the third sub-dimension to be 0.922. For every item on the earthquake knowledge scale, the internal reliability coefficient (Cronbach's alpha) was determined to be 0.868.

Sustainable earthquake awareness scale: The scale was developed by Genç and Sözen, (2021). It has been stated that the developed scale aims to increase individuals sustainable earthquake awareness levels. The scale was prepared as a 5-point Likert. The total number of items was determined as 22. The minimum score that can be obtained from the scale is 22, and the maximum score is 110. The Cronbach's alpha internal consistency coefficient of the scale was calculated separately for each dimension. In this context, the first sub-dimension is 0.752; the second subdimension is 0.838; The third sub-dimension was determined as 0.827. Cronbach's alpha for all items was determined as 0.884. Cronbach alpha values of our study are given in Table 1.

The scale and subscale scores we used in our study were determined to be at an acceptable-high level of reliability (Table 1). Please explain Table 1 very shortly.

Table 1.

Reliability Analysis of Scale Scores

	Cronbach's Alpha
Earthquake risk perception (Scale)	0.86
Affective earthquake risk perception	0.90
Cognitive earthquake risk perception	0.86
Sustainable earthquake awareness (Scale)	0.86
Earthquake structure relationship	0.68
Earthquake preparedness practice	0.85
Preparedness against earthquake	0.78
Earthquake knowledge level (Scale)	0.91
Distribution of earthquake region	0.90
Knowledge of earthquake effects	0.86
Earthquake training	0.93

Skewness and kurtosis coefficients were evaluated to examine the normality distribution of the data. Skewness and kurtosis values of ±2.0 indicate a normal data distribution (George & Mallery, 2010). In this context, the relevant values of our study are given in Table 2. Please also explain Table 2.

Table 2.

Results Regarding Normality Assumption

Scale and sub-dimensions	n	Minimum	Maximum	Mean	S.Deviation	Skewness	Kurtosis
Earthquake Structure Relationship	559	4	20	10.98	2.65	0.26	0.93
Earthquake Preparedness Practice	559	11	55	35.14	7.63	-0.09	0.27
Earthquake Preparedness	559	7	35	25.57	4.59	-0.05	-0.13
Sustainable Earthquake Awareness (Scale)	559	22	109	71.69	12.47	-0.09	0.42
Knowledge of the distribution of earthquake region	559	9	35	24.29	4.92	0.06	0.15
Knowledge of Earthquake Effects	559	12	35	27.55	4.69	-0.54	0.14

Earthquake Education	559	5	25	16.60	4.33	-0.18	0.19
Earthquake Knowledge Level (Scale)	559	28	95	68.43	10.68	-0.12	0.63
Affective Earthquake Risk Perception	559	4	20	13.89	3.98	-0.45	-0.16
Cognitive Earthquake Risk Perception	559	4	20	17.00	2.81	-1.05	1.57

2.4. Data Analysis

SPSS (Statistical Package for Social Sciences) for Windows 22 was used on the computer to gather and analyze the data. To choose which tests (parametric or nonparametric) to utilize in the data analysis process, the first step was to test the assumptions that needed to be satisfied. The distribution's normality was ascertained using skewness and kurtosis data. The t-test for independent samples was employed to compare two distinct groups. The link between the numerical variables was investigated using Pearson correlation analysis. The criteria utilized to determine whether the values obtained were significant was a significance level of 0.05.

2.5. Ethical Considerations

"Ethical committee approval (Approval Number: E-18457941-050.99-113115)" was obtained from The Ethics Committee of Artvin Çoruh University to evaluate the ethical appropriateness of the study.

3. Results

Of the study sample, 67.44% (n:377) were women, 97.50% (n:545) were single, and 53.31% (n:298) were individuals who had previously experienced a disaster. The mean age of the participants was 20.03±2.07 years (Table 3).

Table 3.

Results on Demographic Characteristics

Variable	Group	n	%
Gender	Male	182	32.56
	Female	377	67.44
Marital Status	Single	545	97.50
	Married	14	2.50
Have you experienced any disasters?	Yes	298	53.31
	No	261	46.69

Age	$\bar{X}$±Sd	20.03±2.07

In the study, the earthquake structure connection scores exhibit significant gender differences (t: -4.01; p<0.05). Women (11.29±2.53) had higher earthquake structure connection scores (10.34±2.80) than males, according to an analysis of the mean scores. Gender differences in earthquake preparation practice ratings are statistically significant (t: 2.09; p<0.05). After examining the means, it was discovered that males (36.11±8.28) and women (34.67±7.26) had higher earthquake preparedness practice scores. Gender differences in the earthquake preparation ratings are statistically significant (t: -3.76; p<0.05). Upon analyzing the means, it was shown that women scored higher on preparation (26.07±4.43) than males did (24.53±4.75). Gender differences in knowledge of earthquake region distribution were statistically significant (t: 3.62; p<0,05). Upon analyzing the means, it was shown that women knew less about the distribution of seismic region scores (25.36±5.14) than did males (23.77±4.73). Gender differences in earthquake education scores are statistically significant (t: 2.28; p<0,05). Upon analyzing the means, it was shown that males (17.18±4.16) had higher seismic education scores than women (16.32±4.39). Earthquake knowledge scale scores show significant differences according to gender (t: -8.86; p<0.05). When mean scores were analyzed, it was found that women (67.72±10.55) had lower earthquake knowledge level scores than men (69.91±10.83). Earthquake risk perception scale scores show significant gender differences (t: -6.62; p<0.05). Looking at the mean scores, it was found that women (31.97±5.29) had higher earthquake risk perception scores (28.67±5.94) than men. Sustainable earthquake awareness scale, knowledge of earthquake effects, and cognitive earthquake risk perception scale scores did not show any statistically significant difference according to gender (p>0.05) (Table 4).

Table 4.

Results on Comparison of Scale Scores by Gender

Scale scores	Group	n	$\bar{X}$±Sd	t	sd	p
Earthquake structure relationship	Male	182	10.34±2.80	-4.01	557	0.01
	Female	377	11.29±2.53			
Earthquake preparedness practice	Male	182	36.11±8.28	2.09	557	0.04
	Female	377	34.67±7.26			
Earthquake Preparedness	Male	182	24.53±4.75	-3.76	557	0.01

	Female	377	26.07±4.43			
Sustainable Earthquake Awareness (Scale)	Male	182	70.98±13.23	-0.93	557	0.35
	Female	377	72.03±12.10			
Knowledge of the distribution of earthquake region	Male	182	25.36±5.14	3.62	557	0.01
	Female	377	23.77±4.73			
Knowledge of Earthquake Effects	Male	182	27.37±4.81	-0.60	557	0.55
	Female	377	27.63±4.64			
Earthquake Education	Male	182	17.18±4.16	2.20	557	0.03
	Female	377	16.32±4.39			
Earthquake Knowledge Level (Scale)	Male	182	69.91±10.83	2.28	557	0.02
	Female	377	67.72±10.55			
Affective Earthquake Risk Perception	Male	182	11.88±4.24	-8.86	557	0.01
	Female	377	14.86±3.46			
Cognitive Earthquake Risk Perception	Male	182	16.79±3.11	-1.23	557	0.22
	Female	377	17.10±2.65			
Earthquake risk perception (Scale)	Male	182	28.67±5.94	-6.62	557	0.01
	Female	377	31.97±5.29			

t: Independent sample t-test

It was determined that the cognitive earthquake risk perception subdimension score in the earthquake risk perception scale showed a significant difference according to marital status (t:3.01;p<0.05). In terms of average values, it was determined that single individuals (17.06±2.75) had higher earthquake risk perception scores (14.79±4.10) than married individuals (Table 5)

Table 5.

Results Regarding Comparison of Scale Scores by Marital Status

Scale scores	**Group**	**n**	$\bar{X}$**±Sd**	**t**	**sd**	**p**
Earthquake structure relationship	Single	545	10.97±2.63	-0.54	557	0.68
	Married	14	11.36±3.52			
Earthquake preparedness practice	Single	545	35.14±7.58	-0.07	557	0.96
	Married	14	35.29±9.75			

Earthquake Preparedness	Single	545	25.61±4.54	1.42	557	0.25
	Married	14	23.86±5.95			
Sustainable Earthquake Awareness (Scale)	Single	545	71.72±12.35	0.36	557	0.79
	Married	14	70.50±17.14			
Knowledge of the distribution of earthquake region	Single	545	24.34±4.90	1.38	557	0.20
	Married	14	22.50±5.43			
Knowledge of Earthquake Effects	Single	545	27.51±4.71	-1.12	557	0.18
	Married	14	28.93±3.95			
Earthquake Education	Single	545	16.57±4.33	-1.10	557	0.27
	Married	14	17.86±4.38			
Earthquake Knowledge Level (Scale)	Single	545	68.41±10.72	-0.30	557	0.71
	Married	14	69.29±9.32			
Affective Earthquake Risk Perception	Single	545	13.93±3.95	1.32	557	0.27
	Married	14	12.50±4.97			
Cognitive Earthquake Risk Perception	Single	545	17.06±2.75	3.01	557	0.03
	Married	14	14.79±4.10			
Earthquake risk perception (Scale)	Single	545	30.99±5.64	2.40	557	0.06
	Married	14	27.29±7.63			

t: Independent samples t-test Note: The bootstrap method was used because of the small number of married individuals.

The earthquake preparedness practice score, which is one of the sub-dimensions of the sustainable earthquake awareness scale, shows significant difference according to previous disaster experience (t: -2.29; $p<0.05$). When the mean scores were analyzed, it was found that the earthquake preparedness practice scores (35.93±7.34) of people who had experienced a disaster (34.45±7.82) were lower than those who had not experienced a disaster. According to whether a person has ever experienced a disaster, there is significant difference in their scores on the Sustainable Earthquake Awareness Scale (t: -2.33; $p<0.05$). Upon analyzing the mean scores, it was discovered that individuals who had gone through a disaster scored lower (70.55±12.85) than those who had not (73.00±11.92). Knowledge of the distribution of earthquake region scores shows significant differences according to previous disaster experience (t:3.57; $p<0.05$). When analyzing the mean scores, it was found that the scores of

people who had experienced a disaster (24.98±4.98) were higher than those who had not experienced a disaster (23.51±4.74). Knowledge of earthquake effects scores shows significant differences according to the previous disaster experience of individuals (t:3.85; p<0.05). Analyzing the mean scores, it was found that the knowledge of earthquake effects scores (26.74±4.70) of people who had experienced a disaster (28.25±4.57) was higher than those who had not. Based on an individuals prior experience with disasters, there is a significant difference in the earthquake knowledge level scale scores (t:3.98; p<0.05). Upon analyzing the mean values, it was discovered that individuals who had experienced a disaster had higher earthquake knowledge level scale scores (66.54±10.63) than those who had not (70.09±10.47). Cognitive earthquake risk perception scores showed significant difference according to whether individuals had experienced a disaster before (t:2.35; p<0.05). When the mean scores were analyzed, it was found that the cognitive earthquake risk perception scores of people who had experienced a disaster (17.26±2.64) were higher than those who had not (16.70±2.96). There was a significant difference in the earthquake risk perception scores based on the individuals prior experience of disasters (t:2.37; p<0.05). After analyzing the means, it was discovered that individuals who had gone through a disaster had higher earthquake risk perception scores (31.43±5.72) than those who had not (30.28±5.67). Other scale scores do not show significant difference according to previous disaster experience (p>0.05) (Table 6).

Table 6.

Results Regarding the Comparison of Scale Scores by Disaster Experience

Scale scores	Group	n	$\bar{X}$±Sd	t	sd	p
Earthquake structure relationship	Yes	298	10.82±2.66	-1.54	557	0.12
	No	261	11.16±2.63			
Earthquake preparedness practice	Yes	298	34.45±7.82	-2.29	557	0.02
	No	261	35.93±7.34			
Earthquake Preparedness	Yes	298	25.28±4.82	-1.63	557	0.10
	No	261	25.91±4.29			
Sustainable Earthquake Awareness (Scale)	Yes	298	70.55±12.85	-2.33	557	0.02
	No	261	73.00±11.92			
Knowledge of the distribution of earthquake region	Yes	298	24.98±4.98	3.57	557	0.01
	No	261	23.51±4.74			
Knowledge of Earthquake Effects	Yes	298	28.25±4.57	3.85	557	0.01

	No	261	26.74±4.70			
Earthquake Education	Yes	298	16.86±4.37	1.55	557	0.12
	No	261	16.30±4.28			
Earthquake Knowledge Level (Scale)	Yes	298	70.09±10.47	3.98	557	0.01
	No	261	66.54±10.63			
Affective Earthquake Risk Perception	Yes	298	14.16±4.09	1.74	557	0.08
	No	261	13.58±3.84			
Cognitive Earthquake Risk Perception	Yes	298	17.26±2.64	2.35	557	0.02
	No	261	16.70±2.96			
Earthquake risk perception (Scale)	Yes	298	31.43±5.72	2.37	557	0.02
	No	261	30.28±5.67			

t: Independent sample t-test

It was determined that the model established for predicting the sustainable earthquake awareness scale score was statistically significant [F (2,556) = 25.24 p<0.05]. Earthquake knowledge level and risk perception are significant predictors of sustainable earthquake awareness (p<0.05), 1 unit change in earthquake knowledge level scale dimension scores will cause a -0.27-fold sustainable earthquake shift awareness scale score, 1 unit change in earthquake risk perception scale dimension scores will cause a 0.42-fold change in sustainable earthquake awareness scale score. It is seen that the earthquake knowledge level scale and earthquake risk perception scale scores, which are significant in the established model, explain 8.3% of the change in sustainable earthquake awareness scale scores (R2:0.083) (Table 7).

Table 7.

Findings on the Prediction of Sustainable Earthquake Awareness Scale Score

Dependent variable: Sustainable Earthquake Awareness Scale

Independent variables	**B**	**SE**	**Beta**	**t**	**p**	**VIF**
Stable	77.37	4.06		19.04	0.01	
Earthquake knowledge level scale	-0.27	0.05	-0.24	-5.76	**0.01**	1.01
Earthquake risk perception scale	0.42	0.09	0.19	4.77	**0.01**	1.01
R=0.289 R^2 =0.083 F (2.556) = 25.24 p<0.05						

5. Discussion

This study discovered significant differences in the earthquake knowledge level scale scores based on gender. Females were found to have lower earthquake knowledge level scores than males. Budak and Kandil's research reported that the earthquake knowledge level of men was significantly higher than women's (Budak & Kandil, 2023). It was found that the knowledge level of men about the procedures to be followed an earthquake was significantly higher than that of women (Arslan & Kuyulu, 2023). Some studies (Çelebi & Uçku, 2017; Özgür, 2023) found no significant difference between gender and the level of awareness of earthquakes, which contrasts with earlier research. It was discovered that there were no gender differences in general earthquake knowledge in research done on university students (Özgür, 2023). The gender variable and the mean earthquake knowledge scores did not significantly differ in research done on pre-service teachers (Öcal, 2007). The study conducted on healthcare workers stated that the level of earthquake knowledge was not affected by the gender factor (Çelebi & Uçku, 2017). In a study conducted on students, it was determined that earthquake knowledge scores differed in terms of gender (Benzer & Arpalık, 2021). It can be said that it is important to develop gender-based education and awareness-raising strategies to increase earthquake awareness and ensure that society, in general, is better prepared.

This study's results indicated a significant gender difference in the earthquake risk perception scale scores. It was shown that women scored higher than males on the sense of earthquake danger. Özdemir (2018) found in his study that there was no difference between gender and disaster risk perception. Armaş (2006) reported that women's risk perception was higher than men's. Kung and Chen (2012) mentioned that gender affects earthquake risk perception. Mızrak et al. (2021) stated that some variables positively and significantly affect women's earthquake risk perception. Contrary to previous studies (Mızrak et al., 2021), Çınığı and Yazgan (2022) found that there was no relationship between gender and earthquake risk perception. It is important to encourage women leaders in building community resilience.

This study found that cognitive earthquake risk perception scores, one of the sub-dimensions of the earthquake risk perception scale, showed significant differences in marital status. It was found that single people had higher cognitive earthquake risk perception scores than married people. Tekeli-Yeşil et al. (2011) found no significant difference between marital status and gender variables in earthquake risk perception scores. Soffer et al. (2011) determined that there was no difference between disaster risk perception and marital status. In his research, Tercan (2023) determined that the marriage status variable affected the disaster risk perception

and that single individual had higher risk perception scores than married individuals. Although the specific effects of the marriage status variable on risk perception are important, they can guide policymakers in the preparation of disaster plans.

The study statistically determined that "Sustainable Earthquake Awareness Scale" scores were affected by disaster experiences. It has been determined that the scores of individuals who have experienced and experienced disasters from the "Sustainable Earthquake Awareness Scale" are lower than those who have not experienced disasters and have no experience. In a study, it was determined that individuals with disaster experience (experience) and gender variable (female) affected the risk perception (Kung & Chen, 2012). Another study found that individuals who have experienced disasters in the past have higher risk perceptions (Domingues et al., 2021). Disaster experience impacts disaster risk perception and people's preparedness for disasters (Lindell & Hwang, 2008). A study stated that individuals who have experienced disasters are more prepared for disasters than those who have not (Mishra & Suar, 2007). Contrary to these findings, it was stated that experiencing an earthquake did not affect individuals preparedness for earthquakes (Lindell et al., 2016).

In this study, significant difference was found between individuals' previous disaster experiences and earthquake knowledge level scale scores. In our study, individuals with last disaster experience were found to have higher earthquake knowledge level scale scores than individuals who did not. Öcal (2011) stated in his study that there is a significant relationship between the experience of experiencing an earthquake and the level of earthquake knowledge. However, there is evidence in the literature indicating the opposite (Tekin & Dikmenli, 2021; Demirci, 2021; Yayla & Şahinöz, 2020; Çelebi & Uçku, 2017; Taghizadeh et al., 2012; Öcal, 2007). Therefore, it can be said that carrying out community-based disaster education studies by benefiting from the experiences of individuals who have experienced disasters can be effective in creating a disaster-resistant society.

This study determined that earthquake knowledge level and risk perception scores affected the sustainable earthquake awareness score and were significant predictors. Sözen and Genç say that there is a substantial relationship between the level of earthquake knowledge and sustainable earthquake awareness (Sözen & Genç, 2023). Increasing earthquake knowledge and risk perception to improve individual capacity can affect sustainable earthquake awareness in terms of strengthening social capacity. Personal and social preparation is important in preparing for disasters or minimizing the negative effects of a possible catastrophe. In this context, it can

be said that organizing disaster awareness training and providing regular information will contribute to increasing disaster resilience.

This study, it was his study concluded that individuals past disaster experiences affect their disaster risk perception. In a study supporting the findings of our research, it was determined that individuals who experienced an earthquake had higher earthquake awareness perceptions than individuals who did not experience an earthquake (Han et al., 2021). Similarly, in the study conducted (Çelik, 2020), it was stated that people with disaster experience have high disaster risk perceptions. According to Özdemir's (2018) study, people's risk perception levels are influenced and differentiated based on their prior disaster experiences. In a similar vein, Chaturvedi and Dutt (2015) discovered that experiences influence perceptions of catastrophe risk. In his research, Tercan (2023) found that the catastrophe experience variable influences people's perceptions of disaster risk. Liu et al. (2018) supports previous findings and stated that having disaster experience affects disaster risk perception. Although disaster experience is seen to be an important variable, it is seen that it affects individuals risk perception and reveals statistical significance. Individuals with disaster experience can be an important resource and actor to support social capacity. In addition, it is believed that it is important for individuals with disaster experience to interact with other individuals to create social awareness. Therefore, planning and awareness-raising activities based on the experiences of people who have experienced disasters can be an important step in increasing social resilience. This study found that the earthquake preparedness practice scores and Sustainable Earthquake Awareness Scale scores of people who had experienced a disaster were lower than those of people who had not experienced a disaster. It is thought that this situation is due to the desensitization or psychological inability of individuals experiencing disasters due to their negative experiences.

6. Limitations and Strengths

There are many restrictions on this study. An optional online Google poll was used to get the data. Consequently, while extrapolating the results, it is important to remember that participant reporting bias can exist. Social acceptability flaws may exist in the data because it is based only on participant claims. It is suggested that future research involve those who have been affected by catastrophes. Even with the study's admitted shortcomings, there are some advantages. The investigation of many factors about sustainable earthquake awareness has the potential to augment both personal and collective resilience.

7. Conclusions

Women were found to have lower earthquake knowledge scores than men. Women were found to have higher earthquake risk perception scores than men. Single people had higher cognitive earthquake risk perception scores than married people. It was found that disaster survivors had lower sustained earthquake awareness scale application scores than non-disaster survivors and disaster survivors had higher earthquake knowledge level scale scores than non-disaster survivors. It was found that the earthquake risk perception scores of the disaster survivors were higher than those of the non-survivors. More comprehensive studies may be needed to understand the interaction of gender, marital status, and disaster experience on earthquake knowledge level and risk perception. These studies can contribute to developing more effective education and awareness strategies for the general earthquake preparedness of society. The result that women have lower earthquake knowledge than men reveal the importance of gender-based education strategies. Developing more effective, accessible and participatory earthquake education programs for women can contribute to increasing earthquake knowledge levels.

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Data and code availability. "Personal information form", "Earthquake risk perception scale", "Earthquake knowledge level scale" and "Sustainable earthquake awareness scale" were used as data collection tools. The data are included in the research. No other data is available other than this data.

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