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Validity and Reliability Study of Social Media Sensitivity Scale in Disaster

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Abstract

In disasters that result in loss of life and property, social media plays a significant role in facilitating communication and mitigating the destructive impacts of such events. While fulfilling this role, it is essential that social media users demonstrate verbal and visual sensitivity in their engagement with cooperation, solidarity, and public discourse during disasters. To assess social media sensitivity during the earthquake process, which had a profound impact on a large segment of society, a 27-item draft scale was developed based on interviews with social media users and a review of the relevant literature. Expert opinions were sought from two specialists in the fields of disaster management and social media usage regarding the scale items. Following a pilot study, the items were administered to 279 individuals who actively used social media during the disaster. Exploratory factor analysis resulted in a refined scale comprising 15 items. These items were categorized under four factors: "Contribution to the Process", "Contribution to Management", "Awareness of Destructive Effects", and "Facilitation" of the "Process". A second round of implementation of the scale was conducted with a sample of 157 social media users to further validate the instrument. As a result of the confirmatory factor analysis, it was observed that the scale demonstrated optimal fit indices (CMIN/DF=1,146; RMSEA=,031; SRMR=,059; NFI=,89,88; IFI=,984; CFI=,984; GFI=,925; AGFI=,895). The Cronbach's Alpha coefficient of the scale was found to be α =.82. The AVE and CR values related to the reliability of the scale factors indicated a high level of convergent validity. Based on the findings, a valid and reliable measurement tool has been developed for assessing Social Media Sensitivity in Disasters (SMSSD).

Keywords: Social media sensivity in disaster, scale development, validity, reliability.

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Afette Sosyal Medya Duyarlık Ölçeği Geçerlik ve Güvenirlik Çalışması

Makale Türü	Başvuru Tarihi	Kabul Tarihi
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Öz

Can ve mal kaybının yaşandığı afetlerde, sosyal medya, iletişimi kolaylaştırmada ve afetlerin yıkıcı etkilerini azaltmada etkin rol oynamaktadır. Bu rolünü yerine getirirken sosyal medya kullanan bireylerin afetlerde sözel ve görsel, yardımlaşma, iş birliği ve tartışmalarda duyarlı davranmaları oldukça önemlidir. Toplumun büyük bir kesiminin etkilendiği deprem sürecinde sosyal medya duyarlılığını ölçmek amacıyla sosyal medyayı kullanan bireylerle yapılan görüşmeler ve mevcut literatür taramasına dayanarak 27 maddelik bir taslak ölçek geliştirilmiştir. Ölçek maddeleri ile ilgili afet ve sosyal medya kullanımı alanında iki uzmanın görüşüne başvurulmuştur. Ön uygulama sonrası ölçek maddeleri, afette sosyal medya kullanan 279 sosyal medya kullanıcısına uygulanmıştır. Açımlayıcı faktör analizi sonucunda 15 maddeden oluşan bir ölçek elde edilmiştir. Ölçek maddeleri, "Sürece katkı", "Yönetime katkı", "Yıkıcı etkiler farkındalığı", "Süreci kolaylaştırma" adı altında dört faktörde toplanmıştır. Ölçek için ikinci uygulama 157 sosyal medya kullanıcısına uygulanmıştır. Doğrulayıcı faktör analizi sonucu ölçeğin optimal uyumluluk değerleri gösterdiği (CMIN/DF=1,146; RMSEA=,031; SRMR=,059; NFI=,89,88; IFI=,984; CFI=,984; GFI=,925; AGFI=,895; CFI=,984) gözlenmiştir. Ölçeğin Cronbach Alpha katsayısı α=.82 olarak bulunmuştur. Ölçek faktörlerinin güvenirliği ile ilgili AVE ve CR değerlerinin benzeşme düzeyi belirlenmiştir. Elde edilen bulgulara göre Afetlerde Sosyal Medya Duyarlılığının (SMSSD) ölçümünde kullanılabilecek geçerli ve güvenilir bir ölçme aracı geliştirilmiştir.

Anahtar Sözcükler: Afetlerde sosyal medya duyarlılığı, ölçek geliştirme, geçerlilik, güvenilirlik.

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Introduction

"The concept of "disaster" typically evokes, in the minds of individuals, a situation that "requires urgent intervention, disrupts and devastates daily life, involves significant loss of life and property, overwhelms individual and local efforts, and necessitates regional or international support" (Erkal& Değerliyurt, 2009, p.149). Today, social media has become an indispensable platform for individuals to make their voices heard and to express their needs and demands during disaster situations. With its current functioning, social media "has surpassed traditional media thanks to features such as accessibility, availability, usability, innovation, and permanence" (Mayfield, 2024, p. 232). Moreover, social media facilitates the flow of information and is highly effective and cost-efficient in collecting real-time data (Kavanaugh et al., 2011). It offers individuals and groups the opportunity to instantly communicate with others on both national and global scales without restrictions. In this process, social media sharing networks have become one of the most defining elements of the digital age; applications attract attention from all segments of society, and the virtual world is increasingly taking precedence over real life (Kırık et al., 2015). The practice of sharing user-generated content online for the purpose of information exchange has led to widespread use of the internet. In situations that disrupt normal life, such as disasters, the use of social media requires a more controlled, realistic, and cautious approach. In this context, measuring individuals' social media sensitivity regarding disasters is anticipated to contribute significantly to the preventive strategies and societal preparedness efforts undertaken before the occurrence of such events.

During disasters, individuals' increasing needs for communication and solidarity have significantly heightened the importance of social media as a tool. This is particularly evident in areas such as "emergency awareness, communication, information sharing, discussion, and collaboration" (Çanakçı et al., 2022, p.883). Social media users bear a humanitarian responsibility that extends beyond their individual civic duties during such events. It is argued that the shared attitudes and behavioral patterns adopted by individuals in response to extraordinary events like disasters contribute substantially to the effective management of the process and the mitigation of potential damages. In this context, "being collectively prepared in a well-organized manner is essential to overcome the consequences of a disaster with minimal loss and maximum efficiency" (Şahin & Uyan, 2016, p.781).

In disaster situations, the ability to respond digitally is possible within the effective boundaries of social media (Tim, Ractham, Kaewkitipong, 2017). Fundamentally, social media serves multiple functions: facilitating public discourse among individuals, monitoring the current situation, responding to emergencies, coordinating resource utilization, promoting collaboration and social cohesion among the public, raising awareness about the causes of events, providing basic aid, and expanding the scope of research processes.

Disasters, by their nature, "create a high level of uncertainty" among individuals (Mitroff, 2004, p.46), which in turn "drives people to seek more information" (Boyle et al., 2004, p.156). Whether during normal times or disaster situations, this information-seeking behavior is a primary driving force behind social media use. Social media "serve as tools that enable people to interact both within and beyond their spatial boundaries" (Palen et al., 2009, p.468). In other words, social media functions as a support and communication mechanism by facilitating the dissemination of critical information and easing access to information during crises.

A comprehensive analysis of social media content reveals that it includes: 1) event-related news; 2) event updates; 3) personal experiences; 4) personal opinions; 5) jokes; 6) marketing and advertising activities; 7) spam and irrelevant information; 8) humor and sarcasm; 9) expressions of happiness; 10) risk reduction information; 11) anxiety, fear, and/or sadness; 12) despair and anger; 13) misinformation; and 14) questions related to the event or topic (Chew & Gunther, 2010).

While individuals primarily rely on social media as a dominant news source, they use it for purposes such as "volunteering, obtaining information, diverting victims' attention away from the disaster, gaining in-depth knowledge about rescue operations, identifying ways to assist family, friends, and the community, accessing up-to-date disaster information, and acquiring safety-related information" (Oral, 2018, p. 288). A social media sensitivity analysis related to disaster relief can identify emotional focal points based on quantitative data; such an analysis can also reveal attitudes, behaviors, and opinions concerning events and phenomena (Beigi et al., 2016). Publicly available data regarding users' emotions, concerns, and panics are collected and analyzed (Brynielsson et al., 2018; Woo et al., 2015). In the context of disaster, risk, and crisis communication, "social media serves as a tool to adhere to best practices and support organizations" (Veil et al., 2011, p.118).

The factors that limit users in the use of social media can be listed as follows: the presence of images frequently associated with disasters that may have harmful effects on individuals; individuals' reluctance to remember disasters and the discomfort caused by being remembered in this way; the desire to exercise the right to be forgotten; concerns about privacy; and children's rights, etc. Twitter is not just a social interaction platform, but also complements traditional media (Yates & Paquette, 2011).

The management of social media during disasters and crises holds great importance for administrators and organizations. This is because of the significance and value that social media carries for company executives in analyzing data waves and strategically applying the insights obtained from these analyses. However, if not managed effectively, social media can become uncontrollable and may lead to more negative outcomes than benefits. The unconscious sharing of content after a disaster increases disappointment and despair among victims, potentially leading to tension and unrest among the public. In addition, "the spread of rumors and provocations on social media following a disaster can lead to secondary crises during the disaster" (Demiröz, 2020, p.298).

Administrators need to adopt a comprehensive and proactive approach to combat the negative effects of misinformation on disaster risk. They are expected to implement monitoring tools aimed at detecting the spread of misinformation in real time. Identifying potential misinformation campaigns before they gain momentum and analyzing trends and patterns can assist in detecting suspicious content and verifying information; in this process, artificial intelligence can be utilized (Diwanji et al., 2020). In disasters, measuring individuals' social media sensitivity and directing individuals toward educational programs becomes increasingly critical.

A review of the literature reveals that there is no existing scale specifically developed to measure social media sensitivity in the context of disasters. Therefore, the development of such a scale is intended to contribute to this field. In the literature, several scales related to social media have been developed or adapted within the fields of social sciences and education. Examples of adaptation studies include the "Social Media Marketing Activities Scale" (Yüksekbilgili, 2018), "the Selfitis Behavior Scale" (Kıraç et al., 2021), "the Social Media Use Disorder Scale" (Erzen & Odacı, 2021). However, a disaster is an extraordinary situation that poses a threat to society and leads to significant destruction.

Social media "consists of web-based applications that can be easily published and include discourses, visuals, messages, collaboration, and critiques" (Safko and Brake, 2009, p.6). When individuals use such social media applications within their communities, they are required to demonstrate awareness of the emotions, thoughts, and situations experienced by others in their society. It encompasses how individuals address social issues, highlight societal problems, and engage in efforts to raise public awareness through their use of social media channels. In extraordinary circumstances, social media emerges as the primary communication tool for individuals. Measuring social media sensitivity during disasters, along with the systematic management and use of social media, can contribute to the reduction of disaster-related damage. The strategic and effective use of social media in the context of disasters and disaster management facilitates timely and effective support and assistance to victims in affected areas. The aim of this study is to develop a scale to determine individuals' perceptions of social media sensitivity in disaster situations.

Method

This study is a scale development research aimed at creating a valid and reliable measurement tool to assess social media sensitivity in disaster contexts, following the appropriate scale development procedures.

Study Group

The study sample consists of 436 voluntary participants who use social media and reside in a third-degree earthquake zone. In preparing the scale items, a literature review on social media sensitivity during disasters was conducted, and interviews were held with individuals affected by disasters. The information obtained was used to draft the scale items. The prepared items were reviewed by three experts one specializing in Turkish language and semantics and two experts in the fields of media use and disaster studies and necessary revisions were made based on their recommendations. As a result of these revisions, a draft scale comprising 27 items measuring social media sensitivity in disaster contexts was developed. The scale consists of positively worded statements answered on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The minimum possible score on the scale is 15, and the maximum score is 75.

The first application of the draft 27-item scale for Exploratory Factor Analysis (EFA) was completed with 279 voluntary participants. Of these participants, 52.7% (147) were female, and 47.3% (132) were male. Regarding educational levels, 23.3% had secondary education, 60.6% held a bachelor's degree, and 19.8% had postgraduate education. In terms of age groups, 65.7% were between 18 and 22 years old, 25.7% between 23 and 25, and 0.8% between 26 and 31.

For the second application of the scale, conducted for Confirmatory Factor Analysis (CFA), 157 voluntary participants took part. Among them, 65.6% (103) were female, and 34.5% (54) were male. Regarding educational levels, 9% (14) had secondary education, 83% (130) held a bachelor's degree, and 8% (13) had postgraduate education. The age distribution was as follows: 49.5% (78) were between 18 and 22 years old, 41.5% (65) between 23 and 25, 08% (9) between 26 and 31, and 03% (5) were 32 years old or older.

To determine whether the scale is suitable for factor analysis, the Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity were conducted. Based on the assumption that the items in the scale are interrelated, the Promax oblique rotation method was preferred for the factor analysis After the Exploratory Factor Analysis (EFA), a second application of the scale was conducted on a different group of 157 volunteers for Confirmatory Factor Analysis (CFA), and CFA was performed on the obtained data. Özdamar states that EFA should be performed on pilot data, followed by collecting data from a different sample of at least 150 participants for CFA and reliability analyses, and that conducting EFA and CFA on different samples is ideal (Özdamar, 2016). According to Kline (1994), "the initial application of a scale should be conducted with a sample size ten times the number of items" (s.194). Thus, for both the EFA and CFA phases, the target sample size was ten times the number of items in the scale. For the second application to determine the validity of the scale, 157 voluntary participants responded to the scale items.

Evaluation of Scale Scores

The items on the scale were rated between 1 and 5 points, corresponding to "Strongly Disagree = 1," "Partly Agree = 2," "Undecided = 3," "Agree = 4," and "Strongly Agree = 5". Higher scores on the scale indicate higher sensitivity in social media use. In the initial application (EFA), the KMO value for the scale items was calculated, and factors with variances greater than 1 in each dimension were examined. It was found that the scale had a four-factor structure, with more than three items under each factor. Considering that the total variance explained by the items was sufficient to represent the scale variance, it was concluded that the scale items formed a coherent model. Based on the EFA results, a 15-item Likert-type scale with four factors was selected for confirmatory factor analysis.

Data analysis

Confirmatory Factor Analysis (CFA) utilizes multiple fit indices in structural equation modeling. In this analysis, commonly accepted fit indices recommended by (Hair et al., 2025) were used. The goal of Exploratory Factor Analysis is to reach "a meaningful structure defined by a small number of factors with sufficient factor loadings from a large number of variables (items) in the scale" (Büyüköztürk, 2015, p.133). Accordingly, the draft scale with 15 items having factor loadings above .400 was applied to a different sample group of 157 participants. CFA examines the degree to which the structure formed by the combination of items from different dimensions fits the actual data. The fit of the tested model in CFA was assessed using the Chi-square (χ^2) goodness-of-fit test. The Chi-square test evaluates the significance of the difference between observed and predicted values (Bagozzi & Heatherton, 1994). If the Chi-square ($\chi 2$) test is significant, it indicates no significant difference between observed and predicted values, implying that the model fits well.

In the second application of the model defined by EFA, "it is tested whether the results are confirmed by the collected data set" (Çokluk et al., 2010, p.275). Model fit is examined through various indices including "the Chi-square statistic (χ^2)", "Goodness of Fit Index (GFI)", "Tucker-Lewis Index (TLI)", "Root Mean Square Error of Approximation (RMSEA)", "Adjusted Goodness of Fit Index (AGFI)", and "Comparative Fit Index (CFI)" (Hooper et al., 2008). The fit indices obtained from CFA were checked to meet criteria of GFI, CFI, NFI, RFI, and IFI > .90 and RMSEA and RMR < .05. In addition to factor loadings, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability (CR) coefficients were calculated to assess the internal consistency and reliability of the scale. Data analyses for reliability and validity were conducted using SPSS 25.01 and AMOS software.

Ethical Procedures

Ethical permission was obtained for the study. Ethical permission was obtained with the decision of Kırşehir Ahi Evran University Social and Human Sciences Scientific Research and Publication Ethics Committee dated 14.06.2023 and numbered 2023 /05/12.

Findings

In the findings section, the demographic characteristics of the participants involved in both the first and second administrations of the scale are presented, followed by a detailed account of the exploratory factor analysis conducted on the data from the initial administration and the confirmatory factor analysis performed on the data obtained from the subsequent administration.

Table 1. *Demographic information regarding the distribution of participants in the first (EFA) and second (CFA) applications of the scale*

		First aplication (EFA)		Second aplication (CFA)	
		f	**%**	**f**	**%**
Gender	Female	147	.52,7	103	.65.6
	Male	132	.47,3	54	.34.4
Level of Education	Secondary education	66	.23,3	14	.09
	Bachelor's degree	158	.60.6	130	.83
	Postgraduate degree	55	.19,8	13	.08
Age	18-22 years old	183	.65,5	78	.49,5
	23-25 years old	71	.19,8	65	.41,5
	26-31 years old	22	.08	9	.06
	32 years and above	3	.01	5	.03

Table 1 presents the demographic distribution of the participants who took part in both the first and second administrations of the scale. Examination of Table 1 reveals that the distribution of participants is approximately balanced in terms of gender. Regarding age and education level, it is observed that the majority of participants belong to the 18–22 age group with a bachelor's degree.

Item Analysis

The arithmetic mean of the items on the scale, the total variance of the items, the adjusted item correlation coefficients, and the adjusted Cronbach's alpha values of the items are presented in Table 2.

Table 2 shows that the corrected item-total correlation coefficients of the scale range between .202 and .562. The Cronbach's alpha values for the items exceed the threshold of α = .70'. To determine the factors of the scale, principal component analysis was conducted using the Promax oblique rotation method. The Kaiser-Meyer-Olkin (KMO) measure was found to be .855, and Bartlett's test of sphericity yielded χ^2 = 1140,179 (df = 105, p = 0,000). These results indicate that the sample size is adequate for factor analysis of the scale. According to Taş, a KMO value above 0,60 is expected for factorability (Taş, 2017). "KMO values between 0.00 and 0.49 are unacceptable, between 0.50 and 0.70 are moderate, between 0.70 and 0.80 are good, between 0.80 and 0.90 are excellent, and values greater than 0.90 are considered perfect" (Karaman, 2023, p.49). The obtained KMO value of .855 is thus classified as very good. The analysis further showed that the scale consists of four factors with eigenvalues greater than 1.00. The scree plot of eigenvalues supports this finding.

Table 2. *Total item statistical values*

Scale Item no	Scale item average	Total variance of items	Adjusted item correlation	Multiple item correlation	Adjusted item Croanbach alpha α
M1	51.489	57.129	.548	.478	.794
M2	51.429	58.002	.518	.436	.797
M3	51.595	58.006	.522	.417	.797
M4	51.348	59.529	.416	.405	.804
M5	51.182	57.954	.562	.470	.794
M6	51.368	57.990	.558	.435	.794
M7	51.506	58.097	.519	.407	.797
M8	50.599	60.827	.426	.312	.804
M9	51.036	59.921	.420	.340	.804
M10	50,825	59,559	.502	.398	.799
M11	51,202	59,024	.516	.338	.798
M12	52,076	61,559	.202	.361	.823
M13	51,732	61,823	.264	.338	.815
M14	51,619	61,773	.232	.307	.818
M15	51,951	59,990	.349	.291	.809

Scale Eigenvalue (Scree plot) Graph

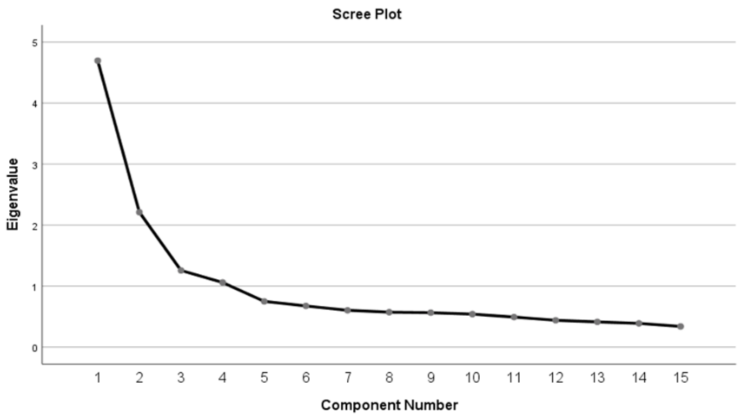

Figure 1. *Scale eigenvalue (scree plot) graph*

Based on the analyses, considering that the slope of the scree plot converges and flattens after the second inflection point, the number of factors for the scale was limited to four. "Sharp drops or breaks in the scree plot determine the number of factors" (Büyüköztürk et al., 2016, p. 179). It is observed that the slope of the scree plot levels off to a flat baseline after the fourth point.

Level of explanation of the total variance of scale items

Another piece of data obtained as a result of exploratory factor analysis is the percentage of variance explained by the factors and the total variance explained. The factor loadings explained by the scale items are given in Table 3.

Table 3. *Total Variance Explained on the Scale*

Total	*Percentage variance*	*Cumulative percentage*	*Obtained load value*
4.696	31.304	31.304	3.549
2.211	14.740	46.044	3.322
1.257	8.377	54.421	2.340
1.059	7.063	61.484	3.165

As shown in Table 3, the total variance explained by the four factors with eigenvalues greater than 1 accounts for 61.484% of the total variance. The total explained variance exceeding 50% is an important criterion in factor analysis, indicating that the variance accounted for by these factors represents a large portion of the overall variance of the scale.

Factor Load Values of the Scale and Calculated AVE and CR Values

The AVE and CR values calculated based on the exploratory factor analysis load values of the scale are presented in Table 4.

Table 4 indicates that the Exploratory Factor Analysis (EFA) component analysis reveals a four-factor structure with eigenvalues greater than 1, consisting of 15 items, with factor loadings ranging from a minimum of .570 to a maximum of .826. Based on theoretical considerations and the content coverage of the items within each factor, the items in the first factor were labeled F1 “Facilitation,” those in the second factor F2 “Contribution to Management,” the third factor F3 “Awareness of Destructive Effects,” and the fourth factor F4 “Contribution to the Process”. The items included in the subscales are as follows: items 1, 2, and 3 in F1 “Facilitation”; items 4, 5, 6, and 7 in F2 “Contribution to Management”; items 8, 9, 10, and 11 in F3 “Contribution to the Process”; and items 12, 13, 14, and 15 in F4 “Awareness of Destructive Effects.”

Table 4. *Factors, item load values, AVE, and CR values of the social media usage sensitivity scale in disasters*

Item No	Factor	Fak Loa value	(∑ 𝜆𝑖𝑗)	(∑ 𝜆𝑖𝑗 𝑝 𝑖=1)2	ei= 1−(∑ 𝜆𝑖𝑗 𝑝 𝑖=1)2	AVE ve CR
M1 M2 M3	(F1) Fasicilition	.782 .766 .736	2.286	1.743	1.241	AVE= 0.58 CR= 0.76
M4 M5 M6 M7	(F2) Contribution to management	.826 .783 .675 .570	2.854	2.084	1.920	AVE= 0.52 CR= 0.71
M8 M9 M10 M11	(F3) Awareness of destructive effects	.815 .774 .668 .657	2.393	2.161	1.840	AVE=0.54 CR=0.74
M12 M13 M14 M15	(F4) Contribution to the process	.787 .761 .708 .678	2.931	2.158	1.768	AVE=0.54 CR=0.74

Example items related to the factors include M1 under “Social Media Facilitation”: “In disasters (earthquakes), individuals can tag and share content on social media bookmarking sites.” For the “Contribution to Management” factor, M4 states: “In unpredictable disasters, social media supports institutional practices.” In the “Destructive Effects of Social Media” factor, M14 reads: “Emotional messages related to disasters on social media often deviate from a logical basis.” For the “Disaster Process” factor, M8 states: “Provides analytical criticism and opinions aimed at achieving results in earthquakes.” The Composite Reliability (CR) value is used as an alternative or a complementary measure to Cronbach’s Alpha (CA). Similar to CA, the CR value is expected to be above 0.7. When examining the convergent validity based on the standardized factor loadings obtained from the exploratory factor analysis, the Average Variance Extracted (AVE) values are above .50, and CR values are above .70. These values indicate a high degree of convergent validity and composite reliability for the scale.

Confirmatory Factor Analysis of the Scale

Validity in a measurement tool is defined as “the degree to which the tool can measure the intended variable without confusing it with other variables” (Turgut, 1997, s.114). Regarding Tabachnick'e (2012) the structural validity and theoretical appropriateness of the scale, Tabachnick (2012) states that “confirmatory factor analysis (CFA) verifies the hypothesized theoretical structure of the scale and determines its validity” (s.1024). It is recommended that exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) be applied on different samples to establish validity. Within this framework, the second application of the 15-item scale was conducted on 157 participants who use social media.

Table 5. *CFA fit values of the Social Media Sensitivity Scale*

Suitability index	Value	Acceptable suitability indexes (Jöreskog & Sörbom, 1993)
X/sd	1.146	0-5
REMSEA	.031	<0.08
GFI	.925	0.85 ile 1 arası
AGFI	.895	0.85 ile 1 arası
CFI	,984	<0,95
NFI	.898	.90 ile 1 arası
TLI	.977	.90 ile 1 arası
RMR	.053	<0.08
SRMR	.052	<0.08
IFI	.984	.90 ile 1 arası

Examination of the path diagram of the Social Media Sensitivity Scale indicates that the scale has a four-factor structure. Therefore, it can be concluded that the scale possesses structural validity. The path diagram for confirmatory factor analysis is given in Figure 2.

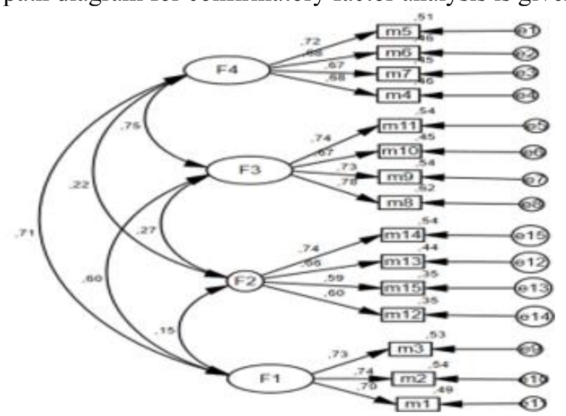

Figure 2. *Path diagram of the scale obtained according to CFA results*

Values Obtained from Confirmatory Factor Analysis of the Scale

The confirmatory factor analysis results of the scale were calculated as follows: CMIN/DF = 1,146; RMSEA = ,031; SRMR = ,059; NFI = ,89,88; IFI = ,984; CFI = ,984; GFI = ,925; AGFI = ,895; CFI = ,984. The χ2/df value (chi-square/degrees of freedom) obtained from CFA was 1,146, and the RMSEA value was 0,031, both below the threshold of 08, indicating an acceptable model fit. "CMIN/DF is used to assess whether there is a significant difference between the sample covariance matrix and the model-implied (modeled) covariance matrix" (Hu and Bentler, 1999, s.2). While some sources accept values as high as χ2/df = 5 (Wheaton et al., 1977), others consider "much lower values such as χ2/df = 2 as acceptable" (Tabachnick and Fidell, 2007, p.285).

RMSEA is a statistic that "provides information about how well the optimally specified parameters fit the population covariance matrix" (Byrne, 2011, p. 664). RMSEA values below 0.05 indicate good fit, while values below 0.08 are considered reasonable and acceptable.

The model test statistics indicate that the researcher's model is sufficiently close to the implied covariance matrix of the sample (Hair et al., 2025). The model's Goodness of Fit Index (GFI) value is 0,93, and the Root Mean Square Residual (RMR) value is 0,05; specifically, the GFI value is 0,925. A GFI value above 0.90 indicates a good model fit. According to Hooper, values above 0,85 are also considered acceptable fit indices. According to (Hooper et al., 2008), values above 0,85 are also considered acceptable fit indices. The GFI is an absolute fit index that indicates the proportion of covariances in the sample data matrix explained by the model. Values above 0,95 indicate excellent fit, while values above 0,90 indicate good fit. The standardized RMR value is 0,053. An RMR value below 0,050 indicates excellent fit, below 0,080 indicates good fit, and below 1,00 indicates poor fit. In this context, the RMR value of 0,053, being below 0,06, indicates excellent fit. The Adjusted Goodness of Fit Index (AGFI) is 0.895.; The Normed Fit Index (NFI) compares the null model to the sample covariance matrix, taking values between 0 and 1, with values closer to 1 indicating better model fit. The NFI is 0.898; the Comparative Fit Index (CFI) is 0.982; and the Incremental Fit Index (IFI) is 0,984. When examining these fit indices, values above 0.90 indicate good model fit (Bentler and Bonnet, 1980). The NFI value of 0.898 indicates good fit.

The analysis results show adequacy across all fit indices. It can be concluded that the 15-item, four-factor structure of the Social Media Sensitivity in Disasters Scale (SMSSD) is confirmed according to the fit statistics obtained from the Confirmatory Factor Analysis (CFA).

Findings Related to Scale Reliability

Reliability refers to the consistency and stability of measurement results. The Cronbach's alpha reliability coefficient is calculated for measurement instruments, with a value of α = 0,70 or higher being expected (Eymen, 2007). The alpha coefficient provides an unbiased estimate of reliability when the measurements are unidimensional and equivalent(tau-equivalent). McDonald (1999) developed a reliability coefficient based on a factor-analytic framework as part of structural equation modeling. The reliability of the overall Social Media Sensitivity in Disasters Scale is presented in a table with Cronbach's alpha coefficients.

Table 6. *Cronbach's alpha coefficients of the social media sensitivity scale in disasters*

Scaling factors	Number of items	Cronbach Alpha
Facilitation	3	.834
Contribution to management	4	.801
Awareness of disruptive impact	4	.746
Contribution to the process	4	.743
For the scale as a whole	15	.845

As seen in Table 6, the Cronbach's alpha values for the entire scale and its subdimensions are high, with Facilitation α = 0.834, Contribution to Management α = 0,801, Awareness of Destructive Impact α = .746, and Contribution to the Process α = 0,743. The overall Cronbach's alpha reliability for the scale is α = 0,845. It is recommended that each factor of a scale contains at least three items (MacCallum et al., 1999). It is considered that participants' response levels to the items may be influenced by their experience of having lived through a disaster, which in turn could affect the reliability values of the items.

Table 7. Cronbach alpha values between the sub-dimensions of the social media sensitivity scale and the scale total scores

Contribution to the process	.680**				
Contribution to management	.746**	.645**			
Awareness of disruptive impact	.367*	.591*	.357*		
Facilitation	.485**	.449**	.400*	.360*	
Total score	.792**	.750**	.714**	.602	.693**

Note =* Significant at the 0.05 level

As shown in Table 7, the correlation values between the overall total score of the scale and its subdimensions were found to be quite high. "The high correlation values among the factors indicate that the items are consistent with each other and measure the relevant construct" (Yıldız and Uzunsakal, 2018, p.19). The Cronbach's alpha coefficients were calculated as α = .84 for the entire scale, α = .83 for the "Contribution to the Process" dimension, α = .803 for the "Contribution to Management" dimension, α = .074 for the "Awareness of Destructive Impact" dimension, and α = .74 for the "Facilitation" dimension. In the statistical analysis, the correlations between the total score and the factors ranged from .35,7 to .74,6. When the AVE and CR values, which were calculated to verify the results of Cronbach's alpha, are compared, the AVE values were found to be above .50, and the CR values above .70, indicating a high level of convergence.

Discussion and Conclusion

One of the primary responsibilities of social media users is to use social media effectively and efficiently before a disaster, to develop disaster awareness, to support well-organized relief efforts, and to ensure that the voice of the public is heard within disaster management organizations.

Relevant literature reveals that during disasters, individuals tend to become more emotional, making deep thinking and rational decision-making processes more complex and challenging, while increasing panic and impulsive behaviors. Given the critical nature of information sharing and coordination particularly for organizations developing and supporting accurate information flow during disasters necessitates a comprehensive social media communication strategy (Yates and Paquette, 2011). An effective disaster communication strategy has been shown to reduce the negative impact of disasters on victims (Haddow and Haddow, 2014). Establishing an effective communication network among community members has also been shown to decrease disaster risk (Wardyaningrum, 2019). In this context, the effective use of social media depends largely on user awareness.

It is essential for social media users, disaster victims, disaster management organizations, and professionals to follow ongoing developments (Valenzuela et al., 2017). Social media activities have the potential to contribute to the creation of a disaster-resilient society, to enable researchers to focus on more significant and meaningful disaster-related issues, and to ensure that institutions take necessary precautions in disaster management planning and response solely through data-based assessment. The developed scale is expected to contribute to measuring the sensitivity of social media users in disaster process management, supporting decision-makers, facilitating the disaster process, and taking into account the destructive impacts of disasters.

As the scores obtained from the overall scale increase, it can be said that the individual's sensitivity level in the related dimension also increases, whereas lower scores indicate a decrease in sensitivity. The research findings are limited to the data obtained. The group on which the scale study was conducted consists of well-educated young volunteers who use social media but do not have sufficient experience or knowledge about disasters. The external validity of the scale can be verified and improved by comparing it with the results of other scales on the same topic. It is recommended that the Disaster Social Media Sensitivity Scale be tested with data obtained from participants in disaster-affected regions in forthcoming research. Despite the aforementioned limitations, the factor analysis and CFA results of the Disaster Social Media Sensitivity Scale are considered to be at a satisfactory level.

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