World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:17, No:08, 2023

Human Behaviour During an Earthquake: Descriptive Analysis on Indoor Video Recordings

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Abstract : The earthquake research literature generally examines emotional, cognitive, and behavioral responses after an earthquake. Studies concerning the behavioral responses to earthquakes reveal that after the earthquake, people either flee in a panic or do not act according to the stereotype that they act irrationally and anti-socially and sometimes give rational and adaptive reactions. However, the rareness of research dealing with human behavior experiencing the earthquake moment makes it necessary to pay particular attention to these behavior patterns. In this direction, this study aims to examine human behavior indoors in case of rising earthquake intensity. In Turkey, located on geography in the earthquake zone, devastating earthquakes took place, such as in "Istanbul" with a magnitude of 7.4 in 1999 and in "Elazığ" with a magnitude of 6.8 in 2020. Occurred recently, the "Kahramanmaraş" earthquake affected 11 provinces, with a magnitude of 7.7 and 7.6 in 2023. In addition, there is expected to be a devastating earthquake in Istanbul, experts warn. For this reason, it is essential to understand human behavior for disaster risk. Management and pre-disaster preparedness to be effective and efficient and to take realistic measures to protect human life. Mazlum Çelik, Burcu Gürkan Ercan, Ahmet Ayaz, Hilal Yakut İpekoğlu, Furkan Baltacı, Mustafa Kurtoğlu, Bilge Kalkavan, Sinem Küçükyılmaz, Hikmet Çağrı Yardımcı, Şeyma Sevgican, Cemile Gökçe Elkovan, Bilal Çayır, Mehmet Emin Düzcan. In this study, which is currently part of a project supported by The Scientific and Technological Council of Turkey (TUBITAK), the indoor recordings during the earthquakes in Elazig on January 24, 2020, and in İzmir on October 30, 2020, are examined, and the people's behavior during the earthquake is analyzed. In this direction, video recordings taken from the YouTube archives of İzmir and Elazığ Disaster and Emergency Management Presidency (AFAD) Directorates and metropolitan municipalities are examined. The researchers have created an observation form in line with the information in the relevant literature to classify people's behavior during an earthquake. It is intended to determine the behavioral patterns by classifying according to the form and video analysis of the people heading toward the door, remaining stable, taking protective measures, turning to people, and engaging in "other" behaviors outside of these behaviors during the earthquake. A total of 60 video analyzes are carried out from Elazığ and İzmir. The descriptive statistic has been used with the SPSS 23.0 package program in the data analysis. It is found that in the event of an increase in the severity of the earthquake, unlike Elazığ, in İzmir, protective action is preferred to the act of remaining stable. In addition, it is observed that with the increase in the earthquake's intensity, women attempt to take more protective action while men head toward the door. In contrast, a rise is observed in the behavior of young people heading toward the door and taking protective actions, while there is a decrease in their behavior directing to people. These findings, unlike the literature, reveal that human behavior during earthquakes cannot be reduced to a single behavior pattern, such as drop-cover-hold-on. The results show that it is necessary to understand the behaviors of individuals during the earthquake and to develop practical policy proposals for combating earthquakes by considering sociocultural, geographical, and demographic variables.

Keywords : descriptive analysis, earthquake, human behaviour, disaster policy.
Conference Title : ICHSBES 2023 : International Conference on Humanities, Social, Behavioral and Educational Sciences
Conference Location : Rome, Italy
Conference Dates : August 24-25, 2023