

DEVELOPMENT AND ACCEPTABILITY OF AN AIRBAG-EQUIPPED TABLE FOR EARTHQUAKE PROTECTION

ABSTRACT

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DISCIPLINE

Engineering

KEYWORDS

*airbag-equipped table,
earthquake protection, safety
furniture, prototype
acceptability, structural
testing*

ARTICLE ID

AASGBCPJMRA-AB04272

This study developed an airbag-equipped table intended to provide additional protection during earthquakes in educational institutions and workplaces. The prototype was designed to reduce exposure to falling-object hazards and potential injury. The study used a quantitative descriptive method with purposive sampling. A survey questionnaire assessed prototype acceptability in terms of materials, durability, ease of use, functionality, and presentation. A t-test compared the assessments of design engineers and mechanical engineers. Design engineers provided an overall weighted mean of 3.43 with a variance of 0.06, while mechanical engineers provided an overall weighted mean of 3.46 with a variance of 0.15. The reported comparison yielded $t = 0.312$ with 8 degrees of freedom. Values of 0.762 and 0.381 were also reported, and the study concluded that there was no significant difference between the two groups' assessments. The prototype was rated "Highly Acceptable." Respondents recommended further testing under different loads and environmental conditions to assess long-term performance. The acceptability ratings support continued development but do not demonstrate that the table protects occupants during an earthquake or reduces injuries. Structural, deployment, load, impact, entrapment, fire-safety, and failure-mode tests are necessary before safety claims can be evaluated.

RECOMMENDED CITATION

Cabagtong, E., Daria, M. N., Depiedra, C., Marcos, M. A., Sanchez, M. F., & Sarsale, Y. (2026). Development and Acceptability of an Airbag-Equipped Table for Earthquake Protection. *Ascendens Asia Singapore – Bestlink College of the Philippines Journal of Multidisciplinary Research Abstracts*, 8(6), 47.