Construction and validation of a public bus passenger safety scale

**OBJECTIVE**
Develop and validate a public bus passenger safety scale

**INTRODUCTION**
• PT users make safety evaluations
• To date, no instrument exist to capture the content domain of PT users’ personal safety
• PT safety scale important to understand differences and similarities between bus safety needs globally

**DOMAIN SPECIFICATION AND ITEM GENERATION**
• No theoretical perspectives on PT users’ safety assessments
• Inductive scale development approach adopted
• 46 items generated from FGDs and IDIs (in a phenomenological constructivist study)

**CONTENT VALIDITY**
• Item review by traffic safety domain experts
• Item readability test
• 41 items retained

**QUESTIONNAIRE ADMINISTRATION AND SCALE PURIFICATION CONT’D**

**CONFIRMATORY FACTOR ANALYSIS**
- MLE: specified 3-factor, 23-item model with DRSI (10 items), TORSI (7 items) and VRSI (6 items)
- Retained 3-factor, 17-item model (DRSI-5 items; TORSI-6 items; VRSI-6 items)
  - Chi-Square= χ²/df = 167.0/116, p = .001
  - RMSEA = .043
  - SRMR = .051
  - CFI = .96
  - TLI = .95

**CONVERGENT/DISCRIMINANT VALIDITY**
- CV
  - Fornell & Larcker (1981) criterion: AVE = .5 & CR = .7
- DV
  - Fornell & Larcker criterion: AVE > MSV
  - Steenkamp & van Trijp (1991) criterion: ∆χ² of nested model and χ² of original model + ∆DF of two models
    - If constraint of perfect correlation does not result in a better model fit, then claim that dimensions are related is not justified and thus DV is established
    - Model fit of constrained model significantly hindered

**SCALE DIMENSIONS AND ITEM LOADINGS**

**DRSI**
- Appropriateness of footwear (0.58)
- Ability to handle vehicle based on physique (0.57)
- Outward emotional state at the time (0.62)
- Professionality: (Appearance- 0.72) (Behaviour- 0.72)

**TORSI**
- Operator reputation (public image) (0.71)
- Years of existence (0.71)
- Capital base and PT investments (0.68)
- Organisational structure (0.74)
- Prestige commuters accord operator (0.67)
- Frequency of fleet breakdowns on journeys (0.56)

**VRSI**
- Bus quality (0.56)
- Condition of exterior components (0.57)
- Bus suitability for the journey (0.72)
- Apparent load to carry/convey (0.69)
- Location of luggage/load on bus (0.61)
- Passenger overloading (0.61)

**CONCLUSION AND FUTURE STUDIES**
- Public bus passenger safety is a 3-dimensional concept
- Proposed scale is reliable and valid
- Test scale’s ability to predict future bus use intentions and operator choices