DISASTER APPS: Usability factors affecting continued intention to use

Marion Tan, Raj Prasanna, Kristin Stock, Emma Hudson-Doyle,
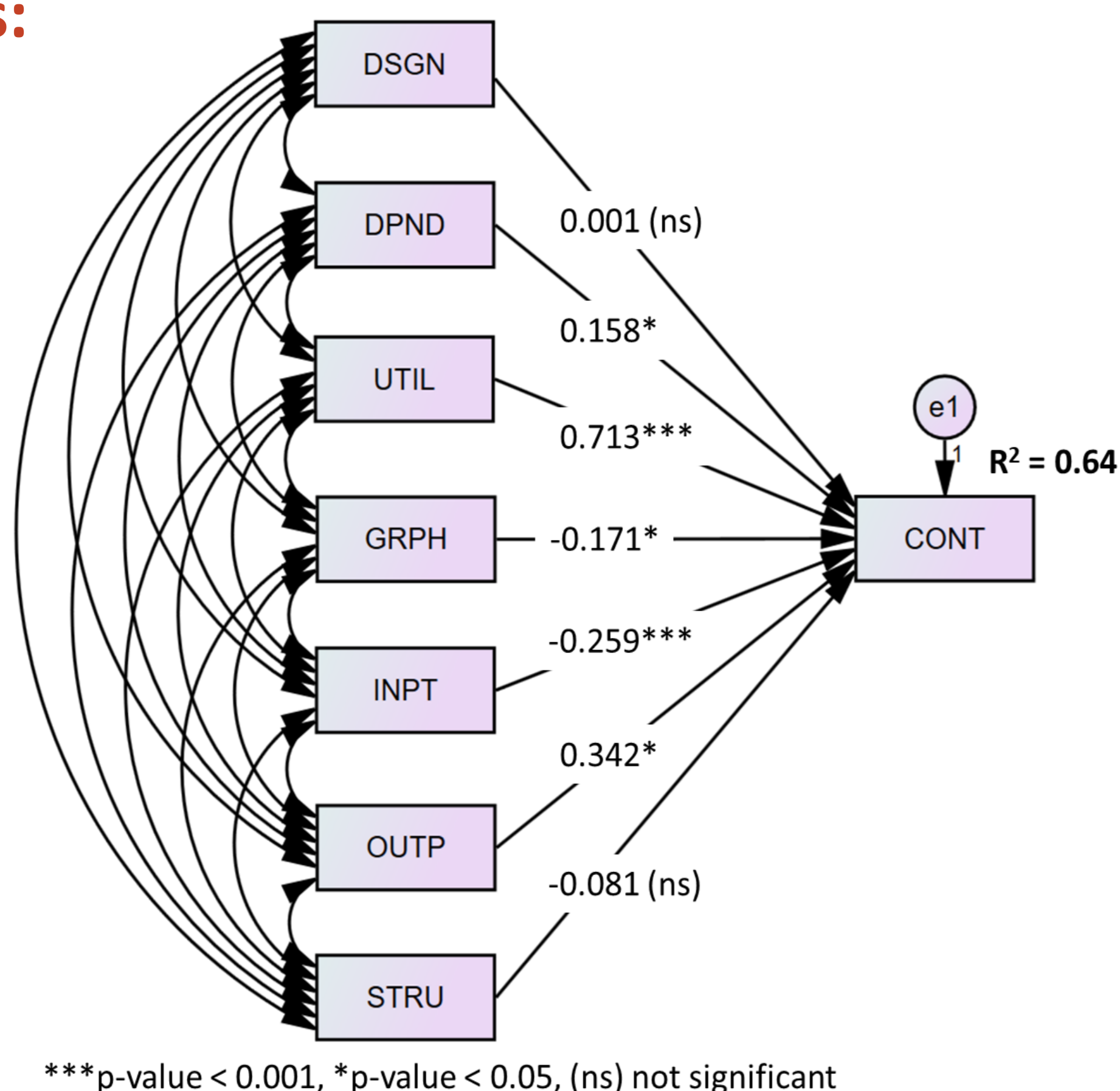Graham Leonard, & David Johnston

Multiple disaster apps already exist for public use. Poor usability may cause users to abandon apps. Limited research has explored whether disaster apps are usable and whether the apps' usability affects users' intent for continued use. This research project investigates usability factors and their relationship to users' intention to continue using apps.

Research Question: What usability factors affect users' intention to continue using disaster apps?

Method: An online survey asked disaster app users about their experience of usability and their intention to continue using the app. The survey received 270 responses.

Analysis: The analysis follows the standard two-stage process of structural equational modelling (Hair et al., 2014). First, we conducted a measurement model assessment through factor analysis. Second, we conducted structural model assessment; evaluating the causal relationships of the usability factors to the dependent variable continued intention to use.

Results:

DSGN — 0.001 (ns)
DPND — 0.158*
UTIL — 0.713***
GRPH — -0.171*
INPT — -0.259***
OUTP — 0.342*
STRU — -0.081 (ns)

e1 → CONT $R^2 = 0.64$

***p-value < 0.001, *p-value < 0.05, (ns) not significant

FACTORS OF USABILITY
adapted from Hoehle and Venkatesh (2015) mobile app usability conceptualization.

- **App Design (DSGN)** - The degree to which users perceive the app to be well designed

- **App Dependability (DPND)** - The degree to which users perceive the app can operate dependably during usage cycle

- **App Utility (UTIL)** - The degree to which users perceive the app delivers its purpose

- **Interface graphics (GRPH)** - The degree to which users perceive that the interface graphics is effective

- **Interface output (INPT)** - The degree to which users perceive that the app allows easy input for users

- **Interface output (OUTP)** - The degree to which users perceive that the app displays information effectively

- **Interface structure (STRU)** - The degree to which users perceive that the app is structured well

The initial results show that usability affects users' intention to continue using disaster apps; however, the factors' influences have different significance, weights and directions.

- Three usability factors (UTIL, DPND, OUTP) have a significant positive relationship with continuance intention.
- Two factors (GRPH, INPT) appear to have a significant negative relationship;
- Two factors (DSGN, STRU) do not have a significant relationship with continuance intention.

Conclusion: To improve continuance intention, the focus for disaster app usability should be on improving the perception of app utility, app dependability and UI output. Conversely, reducing the need for input and providing less focus on interface graphics may influence continuance intention positively.

References:
Hoehle, H., & Venkatesh, V. (2015). Mobile application usability: Conceptualization and instrument development. MIS Quarterly, 39(2), 1–12.
Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R.E. (2014). *Multivariate Data Analysis*. (7th ed). Essex: Pearson Education Limited.