Training Workshop on Structural Equation Modelling (SEM) using R

Session 4: Case study

Journal article

- Access the article by clicking the DOI link.

- Fortunately, the author provided the data publicly.

- In this session we will replicate some of the analysis in the paper.

Young people's perceived service quality and environmental performance of hybrid electric bus service

Ziaul Haque Munim[a,*], Tehjeeb Noor[b]

[a] Faculty of Technology, Natural and Maritime Sciences, University of South-Eastern Norway, Norway
[b] Faculty of Medicine, University of Bergen, Norway
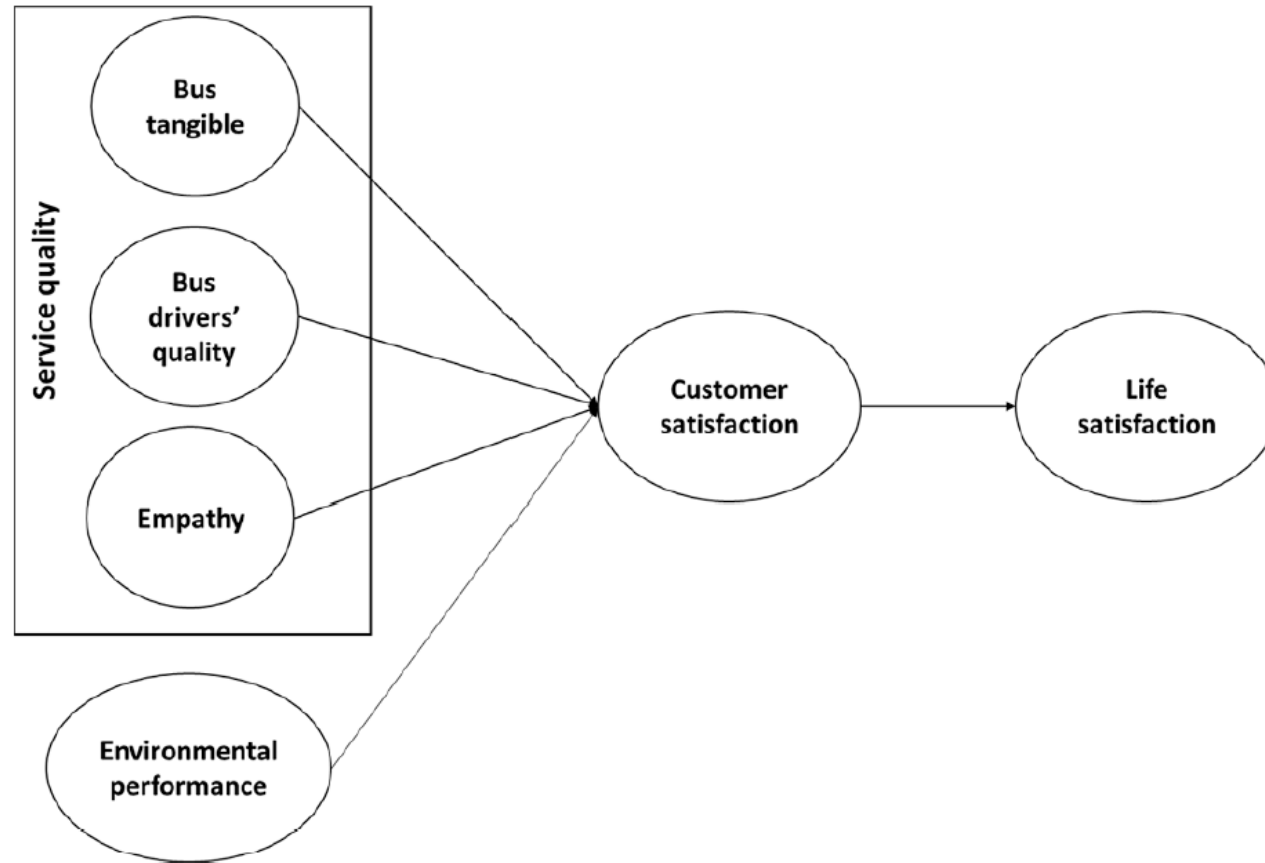
Conceptual model

Fig. 1. Conceptual model.

Measurement, validity and reliability results

Table 2
Measurement items and their reliability.

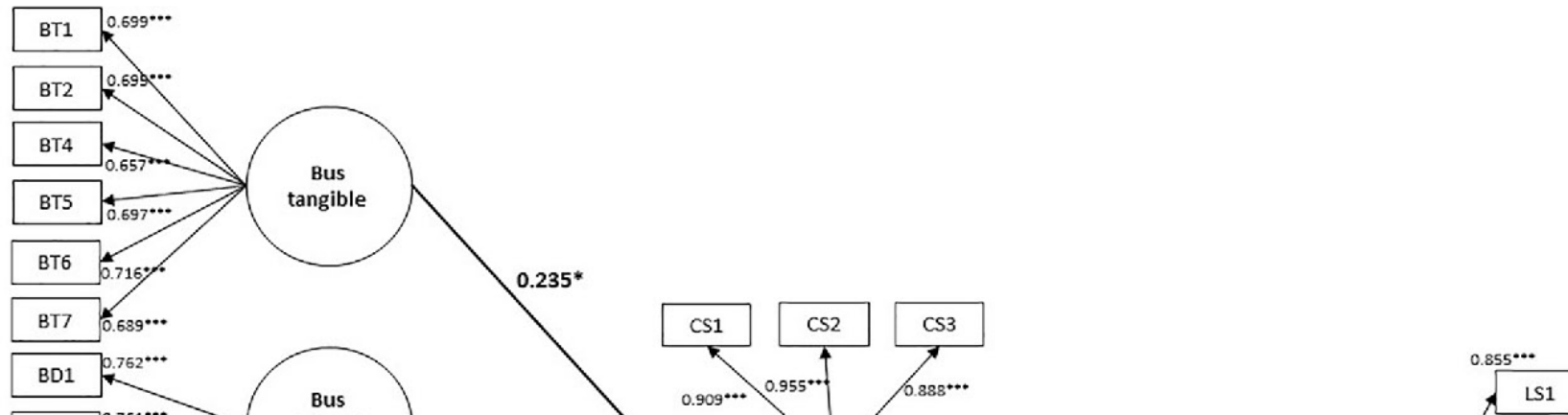| Constructs and their respective items	Factor loadings
Tangible features of the buses (BT, alpha: 0.85, CR: 0.85)	—
1. Physical facilities of a bus are modern looking	0.699
2. Neat and clean inside a bus	0.696
3. *No disturbing noise from engine when sitting inside a bus*	*Dropped*
4. Good condition of air cooling and heating system	0.655
5. Good working condition of bus audio system	0.691
6. Visibility of a complete set of safety equipment (i.e. glass breaking device, emergency door, etc.) with instruction signs	0.717 0.694

Table 3
Divergent validity analysis.

	BT	BD	EMP	CS	EP	LS
BT	1.00					
BD	0.48	1.00				
EMP	0.22	0.37	1.00			
CS	0.32	0.32	0.36	1.00		
EP	0.27	0.20	0.17	0.23	1.00	
LS	0.13	0.08	0.07	0.09	0.08	1.00
AVE	0.48	0.60	0.49	0.84	0.75	0.66

Structural model and indirect effects

Thank you!

Slides created via the R packages:

xaringan by Yihui

xaringanthemer and xaringanExtra by Garrick