**Module 4: Exercise 4-Employee Satisfaction Survey, Conducting a discriminant validity assessment with WarpPLS**

Elizabeth Elizondo

MIS 5375 680

Dr. Vanessa Garza Clark

Texas A&M International University

September 19, 2021

**Summary**

This set up of this analysis was conducted to “improve the performance of its employees” by using a management technique vehicle called “Empathetic Management”. This vehicle would allow for empathetic management techniques to be utilized by managers in the workplace, thereby creating an environment where employees feel greater *job satisfaction, organizational commitment,* and would have the ability to be more *innovative*. The question that is to be addressed is; whether the effect of empathetic management on job performance is mediated, or in other words, has a relationship between the dependent variable (job performance) to the independent predictor variable (empathetic management technique) (2). The second question to be addressed, is, whether the data exhibits adequate validity and reliability. Both composite reliability and the convergent validity will be assessed, demonstrating the correlation between predictor and criterion variables.

**Hypothesis**

It is believed that the SEM model will reveal details to specific variables that are more correlated with one another thereby affecting overall job performance of the employees. Empathetic Management may reveal itself to be more directly correlated with how ‘satisfied’ or ‘committed’ employees feel rather than how ‘innovative’ they could potentially be. It will be assumed that job satisfaction will act as the moderator variable, by demonstrating a more predictive indicator to the overall criterion variable/job performance, but also the Empathetic Management (EmpMgt) technique will provide a more illustrative account of how the criterion and predictor variables are related overall despite there not being a “clear-cut” direct relation (2).

**Analysis**

Diagram

Description automatically generated

**Figure 1**. SEM Model for Empathetic Management Technique in the workplace

The breakdown of Figure 1. Provides the correlation between Empathetic Management (EmpMgt) as the driver of the latent variables: JobSatsf, JobInnov, and OrgComit all contribute to the overall increase in job performance (JobPerf) by way of the R2 value at 58%. This is indicative that there is a 58% variance the latent variables are hypothesized to affect it. Figure 1. also reveals that all p-values result in less than a .01 which is a clear indictor that only less than 1% is due to chance that the predictor and latent variables demonstrate discriminant validity, leaving 99% chance the criterion and predictor variables have convergent validity (4).

Table

Description automatically generated

**Figure 2.** SEM Model of Correlations among latent variables and errors: View correlations among latent variables with sq. rts of AVE

Good discriminant validity is observed by looking at the table in Figure 2. (top chart) Is that the numbers on the diagonal are larger than any numbers on the same column, this is “classic criteria for discriminant validity assessment” (1). Another more extensive set of coefficients for discriminant validity assessment can be proven where the correlations are expected as non-rotated, structure loadings and cross loadings, as seen in Figure 3. Here, it can be seen that the loadings are greater than .5 which is a criteria for conversion validity. For the latent variable EmpMgt (circled), the loadings should be >.5 and the cross-loadings; JobSatsf, JobInnov, OrgComit, and JobPerf to be <.5 which is the case for all the latent variables which is an indicator of discriminant validity (1).

Table

Description automatically generated

**Figure 3**. Structure Loading and Cross Loadings from SEM Model in Figure 1.



**Figure 4**. Full Collinerity VIF’s from SEM Model in Figure 1.

Table

Description automatically generated

**Figure 5**. HTMT Ratios and P Values from SEM Model in Figure 1.

Graphical user interface, application

Description automatically generated

**Figure 6**. Confidence Intervals for HTMT Ratios and P Values from SEM Model in Figure 1.

Figure 4. shows Full Collinearity VIF’s which should be lower than 3.3 to ensure proper discriminant validity. Figure 5. reveals HTMT ratios have good discriminant results if they demonstrate below .90 which are accurate, along with the P values being less than .05 whereas the results reveal all latent variables are <.001. Figure 6. continues to support the discriminant validity by excluding ‘1’ from the latent variable results shown (1).

**Conclusion**

The question states, “Is the effect of empathetic management on job performance mediated? If yes, is the mediation full or partial?” and “Does the data exhibit adequate validity and reliability?” Explain.

To conclude, the assessment of this analysis reveals that the effect of *empathetic management* (EmpMgt) on *job performance* (JobPerf) is partially mediated. The cause for this, is the independent variable *empathetic management* demonstrates it can produce changes on the dependent variable, *job performance* but only if the moderator variables/predictor variables: job satisfaction, job innovation, and organizational commitment have the support of convergent validity. Appendix A provides a visual support that these 3 predictor variables follow a positive trend with an increase in empathetic management techniques involved. However, the latent variable *job satisfaction* appears to have the most convergent validity as opposed to the other two variables that may have more discriminant validity. This is proved by figures 4-6, where discriminant validity is observed. Assessment of the data exhibits adequate validity and reliability of the variables presented demonstrating correlation or, convergent validity, between the empathetic management technique and overall job performance. However, the mediating variables (predictors) acted as just that, a mechanism which an independent variable (EmpMgt) can produce changes on the dependent variable (JobPerf), thereby affecting the validity of the assessment.

**Appendix A**

Figure A.

Chart, scatter chart

Description automatically generated

Figure B.

Chart, scatter chart

Description automatically generated

Figure C.

Chart, scatter chart

Description automatically generated

References

1. [scriptwarp]. (2020, Jan. 20). *Conduct a discriminant validity assessment with WarpPLS* [Video File]. Retrieved from <https://youtu.be/OZQEEDN6jzM>
2. *Tsang, T. (2015). Mediating and Moderating Variables Explained. Psychology in Action. Retrieved from:*<https://www.psychologyinaction.org/psychology-in-action-1/2015/02/06/mediating-and-moderating-variables-explained>
3. Glen, S. (2020, June 8). *Composite reliability: Definition*. Statistics How To. Retrieved September 20, 2021, from <https://www.statisticshowto.com/composite-reliability-definition/#:~:text=Composite%20reliability%20(sometimes%20called%20construct,Brunner%20%26%20S%C3%BC%C3%9F%2C%202005)>.
4. Shuttleworth, M. (2019, January 27). *What is convergent validity and discriminant validity?* ECWA USA. Retrieved September 19, 2021, from https://www.ecwausa.org/what-is-convergent-validity-and-discriminant-validity/.