

A potential method bias is introduced when different data collection methods are used. Unfortunately, there are no universally accepted methods to prevent method bias yet there are ways to reduce it and statistical tests to measure its magnitude. It is recommended to run those tests before combining data collected via different methods.

In the Broken Hill Customer Satisfaction Survey (CSS) 2018 project, two data collection methods were used; telephone interviews and an online survey.

Telephone interviews were conducted with Broken Hill residents. In this method, phone calls were made randomly and the data was collected from residents who agreed to answer the 15-minute survey. This creates a 'popular' bias in market research. To reduce this internal bias, we refine the geographical and demographic representation of the data against the optimum sample size. As a result, the normally-distributed data yields the most representative results for the community (an effect sometimes described as the 'Wisdom of Crowds').

Online surveys were also conducted with Broken Hill residents. An online survey link was shared by Council through the media used to contact the community (i.e. social media, Council webpage). In this method, data was collected from residents who choose to answer the survey. Therefore, the data collected via this method contained more outliers, which are flat and inconsistent answers. To avoid this internal bias, we removed outliers from the data. The method prescribed by Podsakoff *et al* [2003]¹ was used to run outlier detection tests.

After reducing the internal bias, consideration was given to combining the data collected using the two different methods. However, this should be done very carefully to avoid introducing a new bias. Therefore, before integrating the two data sets comparison tests we performed to identify any significant differences. If the results were dramatically different from each other it would have been recommended not to combine the two data sets to avoid an unmeasurable bias.

In Broken Hill CSS 2018 case, the results obtained from telephone interviews and online survey were statistically different at 95% confidence level for almost all the measures included in the survey. In other words, combining the two data sets was going to impact the results significantly and there was no acceptable explanation to justify the differences. Therefore, it was recommended to not combine the two data sets.

Note that the recommendation was purely as a result of unexplained statistical differences and not motivated by the online results being negative. The recommendation would have been the same if the online results were significantly more positive. The research on online behaviour is evolving in Marketing Literature and IRIS Research closely follows the developments. Once there is a universally accepted explanation for the behaviour of online respondents it will be integrated into our methods.

¹ Podsakoff PM, MacKenzie SB, Lee J-Y & Podsakoff NP, 2003, 'Common method biases in behavioral research: A critical review of the literature and recommended remedies', *Journal of Applied Psychology*, vol. 88, no. 5, p. 879-903.