# Business research discussion week 11

Business

Correlation Matrix The correlation matrix is a data presentation figure that provides information for comparison on two or more variables. It presents r-test and p-values to show the significance in correlations. In this case, the matrix consists of information of the year of study, price, p-value, mile, and the expenditure. The interpretation of this matrix is that r ranges from –1. 0 to +1. 0. The p-value compared to the price is a perfect positive, while the p-value compared to the mile it is a perfect negative (Crombrugghe, 1983).

The implication that the data has is that p-value is a reflection of price and mile. When p-value goes down, the price goes up; on the contrary, the price goes up whenever the p-value goes up. However, when the p-value goes up, the mile goes up and vice-versa. Therefore, an increase on p-value will automatically lower the price of purchasing the gas. Thus, the expenditure will go down as well. On the other hand, an increase in p-value lead to an increase in mile covered. Therefore, this means that a decrease in p-value will lead to a decrease in mile and hence reduce the expenditure. The determination of the coefficient significance is by what best measures the strength of the relationship and it is r2. The strength is expressed in the given levels of probability (Sonneveld, 2008).

The data can be used to make principal decision based on the implications. A decrease in p-value lead to a decrease in price of purchasing the gas, then the company can make a decision on how to reduce the p-value, hence reduce their expenditure as well. Consequently, the company can use the data to decide on how to lower the p-value hence lower the miles covered. Thus, this will in turn lower their annual expenditure and hence more profit to the company (Neudecker & Wesselman, 1990).

References

Crombrugghe, D. (1983). The correlation matrix of estimated coefficients. Louvain-la-Neuve.

Neudecker, H., & Wesselman, A. M. (1990). The asymptotic variance matrix of the sample correlation matrix. Rotterdam: Tinbergen Institute.

Sonneveld, P. (2008). Nonnegative matrix factorization of a correlation matrix. Delft: Delft University of Technology.