

Using R to test transaction cost measurement for supply chain relationship: A structural equation model

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Transaction cost economics (TCE) has been widely used to explain the existence and boundary of the firm (Williamson, 2005). Recently, TCE has been extended to inter-firm relationship in supply chains (Hobbs, 1996). However, a measurement of the transaction cost has rarely been tested empirically. Grover and Malhotra (2005) attempted to do so but that measurement has limited to an industrial context and did not cover transaction costs related to the governance problem and the opportunity cost. Thus, we revisited the measurement of transaction cost using both industrial and service perspectives. Moreover, we also considered the transaction cost metric that associated with the governance and the opportunity cost. Then a revised transaction cost metric was tested with empirical data from the tourism supply chains in Thailand using a structural equation model (SEM).

In this study, we used packages in R, specifically **sem** (Fox, 2006) and **OpenMx** (Boker et al., 2011) to test the measurement model. Results from R were then compared to those from other popular SEM software i.e., AMOS (Arbuckle, 1995) and LISREL (Jöreskog and Sörbom, 1997). An evaluation of SEM using packages in R and other softwares is also discussed.

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