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Logistics-Centric Supply Chain Approach for Pakistan Mango Export to Europe Market: Discrete Choice Analysis

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Abstract

Pakistan with mango as its 2nd major export fruit and 4th largest producer in the world is still facing serious constraints in its export marketing. Having said all about the issues and challenges related with the production and domestic infrastructure, perishable nature of the product like mango makes its exporters more sensitive to have improved supply chain to access distant but high value markets like Europe.

This study based on the fact that international freight charges account for almost 70% of total export cost, is hypothesised that improved transport in terms of cost and value can be a commercially attractive proposition for the traders. Logistics oriented supply chain derived from transaction cost theory is supposed as the theoretical foundation of the research. Primary data of the 100 grower cum exporters, sole exporters and 30 shipping companies like air and sea lines collected during a field survey in 2014 has been employed for the analysis. Sea-freighting has been compared with the current mode of transportation (air) as a future alternative mode. Discrete choice modelling technique is used as a methodological tool after identifying attributes of transaction cost, travel time, loss & damage, frequency and compensation during the focus group discussions.

In the results, findings of different mixed logit models of mode choice reveal that air transport is costly but more safe. Though sea-freighting is found 3 to 4 times cheaper than air but yet it's highly sensitive as it takes around 27 days for shipment from Pakistan to Europe. Factors like transport cost, travel time, loss & damage and compensation are found significantly affecting overall shippers' mode choice behaviour. For future, exporters perceive that if somehow high percentage of loss and damage in sea-shipping is reduced with the provision of high-tech containers; they will be willing to adopt sea transport on regular basis.

The authors conclude that along with the provision of domestic facilities like processing plants and certification procedures; logistics oriented supply chain policies introduced by public and private sector can equally enhance export of perishable commodities to far-reaching markets.

Keywords: Discrete choice modelling, Europe, logistics, mango, mixed logit, Pakistan