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RELATIONSHIP BETWEEN PERCEIVED BUSINESS ENVIRONMENT UNCERTAINTY, SUPPLY CHAIN FLEXIBILITY AND FIRM PERFORMANCE: A CASE OF PAKISTAN'S TEXTILE INDUSTRY

Doctoral thesis in the field of management sciences, written under the supervision of dr. hab. Halina Brdulak, and assistant supervision of dr. Piotr Zaborek

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SUMMARY

Manufacturing flexibility has been one of core tools used by firms in the past to achieve competitive advantage. Growing complexity of markets and diminishing environment stability make it even more relevant nowadays for companies to introduce more flexibility in their business operations. The need for enhanced flexibility is a consequence of progressively more complex interactions among supply chain members, i.e. manufacturers, customers, suppliers and distributors, which contribute to business environment uncertainty. Therefore, academic research should shift its focus from manufacturing flexibility to overall supply chain flexibility. Yet, this stream of research is considerably underdeveloped, which constitutes the gap in the body of knowledge that this study attempts to address.

Hence, the main objective of this research is to investigate how supply chain flexibility impacts firm performance.

The dissertation offers an extensive literature review on supply chain management and supply chain flexibility, which provided a theoretical basis for developing an analytical model for investigated relationships between supply chain flexibility, environmental uncertainty and firm performance. Supply chain flexibility is operationalized to consist of four dimensions: new product flexibility, sourcing flexibility, machine flexibility and logistics flexibility. Perceived environmental uncertainty had three aspects: demand, technological and competition uncertainty. The model anticipates a positive association between all forms of flexibility and performance, moderated by business environment uncertainty. These associations and moderation effects constitute hypotheses to be tested empirically. The data for hypothesis testing were collected through a survey of executive managers working in Pakistan's textile industry. 800 questionnaires were distributed and 263 were returned with the complete set of answers for a response rate of 32%.

To analyze the data, the method of partial least squares structural equation modeling (PLS-SEM) is employed with the SMART PLS software. The PLS SEM method allows for estimating many regression equations with latent variables in a single analysis. Diagnostic metrics for validity and reliability of the PLS SEM model indicate good data fit, which makes the model suitable for hypothesis testing. The findings showed that two types of flexibility (logistics and manufacturing) were positively associated with firm performance, while supply flexibility has no meaningful links with performance. Also, perceived business environment uncertainty moderates the relationship between two dimensions of supply chain flexibility (logistic flexibility and new product flexibility) and firm performance significantly. Specifically, higher levels of perceived competition uncertainty increase the strength of the positive relationship between logistic flexibility and performance. Also, perceived demand uncertainty makes the association between new product flexibility and performance stronger to such an extent, that it becomes statistically significant for high levels of demand uncertainty. Overall, the model explains 57.6% of variance in operational firm performance and 12.9% in financial performance.

The study implies that supply chain flexibility indeed leads to enhanced firm performance, especially in terms of manufacturing systems and logistical solutions. New product flexibility can be beneficial to companies when demand uncertainty is high - in a low uncertainty environment it seems to have no effect. Also, the positive impact of logistics flexibility is stronger when competition uncertainty is higher.

These findings suggest that managers should selectively invest in flexibility, prioritizing logistics and manufacturing, and when demand uncertainty is high, also new product flexibility.

Keywords: supply chain flexibility, business environment uncertainty, firm performance, textile industry