THE IMPACT OF BIG DATA ANALYTICS CAPABILITIES ON SUPPLY CHAIN PERFORMANCE IN MANUFACTURING SECTOR OF PAKISTAN

SHAHBAZ SULTAN

Registration No. 01-396191-010

A thesis submitted in fulfilment of the
requirements for the award of the degree of
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Dedicated to my late father who had always been very passionate about continuous pursuit of knowledge, beloved mother, spouse daughter; Fatima Shahbaz & son; Ibraheem Mohammad Bin Shahbaz for their endless love, support, encouragement & sacrifices

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Abstract

The big data is gaining great attention in the current day in age especially in the field of supply chain in the manufacturing organizations however, the collection of big data itself is not enough for the them to compete with other players in the marketplace. The big data can be greatly useful when an organization has a capability to convert it into a useable and important information for making informed decision instead of making decision on basis of gut feel or past experiences. The capabilities of transforming data into useful information are known as big data analytic capabilities. This study is focused on exploring the impact of big data analytic capabilities in the supply chain performance but big data analytic capabilities alone are not enough for making performance better unless the organizations have the required capabilities to leverage the huge volume of data which is available to them through different sources. Many other factors may also affect the organizational & supply chain performance therefore the moderating role of environmental dynamism and a mediating role of supply chain agility have also been accounted for truly understanding the impact of it on supply chain performance in particular. This study is made on the manufacturing industry of Pakistan with the data is collected from 398 firms through questionnaire to analyze the impact of big data analytic capabilities on the supply chain performance. It was found that, the capability of big data analytics greatly impacts the supply chain performance of an organization. The mediating impact of supply chain agility between big data analytic capabilities and supply chain performance and moderating role of environmental dynamism is also found positive which indicates that developing and maintaining the big data analytics capabilities can be very helpful to the managers who wish to improve their supply chain performance while being agile in a highly volatile business environment especially similar of Pakistan which is always faced up with highly volatile external environment in terms of competition, regulatory changes, social, economic & political volatility in addition to high degree of law & order uncertainty. This study is also helpful in understanding that it is equally important for Supply Chain professionals to focus on developing and sustaining the big data analytics capabilities in addition to investing in such expensive and complex technologies.

Keywords: Big data, big data analytics, big data analytic capabilities, supply chain agility, environmental dynamism, supply chain performance

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List of Abbreviations

BDAC	Big Data Analytic Capabilities
ED	Environmental Dynamism
SCP	Supply Chain Performance
RBV	Resource Based View
CFI	Comparative Fit Index
RMSEA	Root Mean Square of Error Approximation
CLF	Common Latent Factor
CMB	Common Method Bias
CV	Average Variance Extracted
DV	Discriminant validity
GFI	Goodness of Fit Index
IFI	Incremental Fit Index
SCP	Supply Chain Performance
SEM	Structural Equation Modeling
TLI	Trucker Lewis Index

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