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IDENTIFICATION AND CLASSIFICATION OF RISKS IN THE NEW ZEALAND PLYWOOD SUPPLY CHAIN

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ABSTRACT

Activities in the supply chain cover a wide-ranging area from upstream to downstream in order to deliver products and services to end customers. Because of the supply chain's width and scope, the activities in it consume a substantial portion of total costs to industries. Therefore, managing supply chain costs can be difficult and yet it is important for companies to have efficient and effective supply chains. Having a better supply chain performance is challenging but various strategies have been implemented in many companies. These strategies have proved capable of enhancing supply chain efficiencies and effectiveness. At the same time, the strategies have also stretched the supply chain's structure wider than before. The change of this structure has made the supply chain become more vulnerable and as a result, the supply chain faces greater risks. Previous studies have shown that risks in supply chain not only interrupt a single company but also terminate the whole organisation. The situation above infers the importance of supply chain risk management in companies.

Supply chain risk management enhances companies' performance to prevent, respond and recover if there are disruptions. Many disruptions can be found in various industries, including plywood sector in this country. New Zealand plywood in general is considered to be a high-value product that requires good quality logs, but for New Zealand plywood mills, obtaining good quality logs is costly. This is because log prices in New Zealand have been increasing due to strong demand of logs from overseas. Increasing log prices obviously delivers more benefits to the foresters as they can earn more profits, while plywood mills are grappling to overcome increasing log prices as input costs increase. This situation highlights the interactions and interdependencies between entities within plywood supply chain in New Zealand. The interdependencies risks and uncertainties too along with benefits. To meet these challenges, supply chains must work toward a unified system and coordinate with each other.

Given the current situation in New Zealand, this study aims to identify risks in the plywood supply chain by identifying and analysing the risks and

implications for customer value. The risk sources have been predicted and classified into supply, demand and operational. Furthermore, the methodology chosen is qualitative along with a case study approach. Therefore, information regarding risks in the plywood supply chain was gathered by interviewing experts from local plywood mills in New Zealand. The interviews were semi-structured to obtain a comprehensive understanding.

The results have been categorised according to a preliminary classification: supply, demand and operational risks. From supply risks there are log quality, log prices, continuity of raw material and transport and distribution. Secondly, demand risks consist of fluctuating demand and market competition. Lastly, operational risks are machine breakdown, inventory and people. All risks from various sources indicate causal relationships between risks in the same sources and across the sources. In addition to the main results, there are also findings from outside the classification: regulation, financial, environment and globalisation. These are considered to be external factors that either directly influence the risks or the relationships among them.

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