Supply Chain and Risk Management: An empirical approach in food chain businesses

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Abstract

Departing on our limited understanding of how risks give rise to management controls and performance, this paper aims to better understand the role of Performance Measurement Systems (PMS) and Risk Management Systems (RMS) in food chain businesses. To do so, both case-based research and survey methods are used to develop a comprehensive inventory of the main risks that food supply food managers face, and to provide insight regarding the management control mechanisms they use for enhancing relational performance. Results show a trend toward a higher management control in food supply relationship, with positive effects on partners’ organisational fit and performance. However some risk sources are still under-managed, as those related to technical uncertainties (transportation problems, long-distance, uncertain technology) and second-tier problems, which represent upcoming challenges in food supply networks.

Keywords: Performance Measurement Systems; Risk Management Systems; Risk Sources; Food Supply Chain.

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Introduction

Increasing globalization has changed the scenario facing companies involved in international channels, causing them to be exposed to increasing risks and danger firm performance; since 2000, international food channels began to rely on closer relationships between companies, which require openness in the exchange of management accounting information using adapted performance and risk management systems. Associated benefits would include access to new resources and capabilities, flexibility to changes in demand, product quality and innovation, or market penetration. However, more collaborative international relationships could also involve increased inefficiencies, which might be mitigated if partners’ organisational structures are complementary and compatible. Risk sources related to individual supplier failures and market characteristics are forcing food supply chain managers to develop more effective management control systems that extend beyond firm boundaries.

However, while there is a significant literature on the effectiveness of buyer-supplier relationships across the management disciplines, much less is known on the characteristics and use of management controls across complex supply networks in presence of multiple sources of risk.

Departing on our limited understanding of how risks give rise to management controls and performance, this paper aims to better understand the role of Performance Measurement Systems (PMS) and Risk Management Systems (RMS) in food chain businesses. To do so, both case-based research and survey methods are used to develop a comprehensive inventory of the main risks that food supply food managers face, and to provide insight regarding the management control mechanisms they use for enhancing relational performance.
Case-study data were obtained from forty-three interviews been carried out with food companies in Spain and United Kingdom, including key managers, secondary company, auxiliary industries, independents broker and dealers as key informants. Results show a need of research on advanced MCS focused on risk analysis and control. These tools should facilitate the integration of partners’ individual resources to develop joint capabilities as a means to guarantee the financial, strategic and perceived performance of supply food relationships. Findings show that the problem with material price fluctuations for food commodities is that this risk is largely outside the control of either buyer or supplier. This would indicate that having multiple suppliers or trading on open markets might help to maintain prices paid for commodities. We found some evidence that where long-term collaborative relationships were fostered, information and expertise were shared.

In addition, a survey was administrated to food industry firms in the U.K. and Ireland to identify causal relationships between risk sources, management controls (PMS, RMS), and performance in food chain businesses. Responses were obtained from a further 45 supply and purchasing managers with significant responsibility for risk and supply chain management. We used Partial Least Square (PLS) based on SmartPLS 2.0 M3 software for testing our theoretical hypotheses.

Survey results identify four main risk sources, with a prevalence of performance risks based on product characteristics (price instability, quality) and demand uncertainties (inability to supply demand, lack of alternative suppliers). The problem with material price fluctuations for food commodities is that risk is largely outside the control of either buyer or supplier; this would indicate that having multiple suppliers or trading on open markets might help to maintain prices paid for commodities. However, other risks are not addressed by this approach with requires the use of multiple, simultaneous RMS practices.

In this line, we identified four RMS that represent different attitudes toward supply chain risk; from them risk anticipation and risk reporting tools, which rely on certification programmes, long-term relationships, and shared information to deal with supply chain uncertainties, are preferred to more defensive strategies based on formal instruments as fixed-price contracts, sanctions, escalator prices, certification programs or penalty clauses, among others.

Results also support a positive effect of management control practices (PMS and RMS) on organisational fit and relational performance, even if some difference emerge between defensive and collaborative risk management practices; this finding is particularly significant and support the use of management control tools in food supply chain relationships. Besides, we observe that companies having significant concerns on risk sources are able to leverage this to enable more intense RMS and PMS, which in turn enable a higher relationship performance.

Conclusions

In conclusion, we observe a trend toward a higher management control in food supply relationship, with positive effects on partners’ organisational fit and performance. However some risk sources are still under-managed, as those related to technical uncertainties (transportation problems, long-distance, uncertain technology) and second-tier problems, which represent upcoming challenges in food supply networks.

References
