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Mixed methods in logistics research: the use of case studies and content analysis

Logistics research has gone through a tremendous development in the past years. Not only have a number of important logistics journals been finally recognized by also the non-logistics scientific community but there is also a new emphasis on research in this area, leading to a larger variety of the types of research conducted.

The dominance of positivistic, deductive, and quantitative research has still been asserted up to the early 2000s (Mentzer and Kahn, 1995, Cox, 1996, Garver and Mentzer, 1999) but consequently all these denominators have been challenged and complementary approaches called for (Seaker *et al.*, 1993; Arlbjørn and Halldórsson, 2002; Näslund, 2002; Gammelgaard, 2004; Kovács and Spens, 2005). Since this discussion 10-20 years ago, more research has also combined various approaches and methods (e.g. Gammelgaard's, 2004 discussion on Arbnor and Bjerke's, 1997 different methodologies as schools in logistics research), leading to the use of mixed methods (Mangan *et al.*, 2004; Golicic and Davis, 2012), and recently, a very similar call for "multi-method" approaches (Sanders and Wagner, 2011). Interesting mixes of qualitative and quantitative methods include interpretive structural equation modeling (Zacharia and Mentzer, 2004; Pfohl *et al.*, 2011), factor analysis analyzing data from structured interviews (Moberg and Speh, 2003), and behavioral experiments (Knemeyer and Naylor, 2011). There is a renaissance of discussing methods, rigor and validation (Mentzer and Fling, 1997; Garver and Mentzer, 1999; Goldsby and Autry, 2011), and the need for both rigor and relevance (Mentzer, 2008; Thomas *et al.*, 2010; Fawcett and Waller, 2011).

One of the most discussed methods in logistics research is the case study approach, which also has the potential to include qualitative as well as quantitative methods (Hilmola *et al.*, 2005). Ever since Ellram (1996) introduced Yin (1984) to logistics management, the use of case studies has been scrutinized. Comparing the use of case studies in logistics management vs. operations management, Häkkinen and Hilmola (2005) find that case studies in operations management are used to produce normative results and follow an analytical methodology, whereas those in logistics managements are largely descriptive and adhere to Arbnor and Bjerke's (1997) systems

approach. Gammelgaard (1997) goes further when proposing that logistics management research adheres to a systems approach overall, which implies a need for a variety of methods, also qualitative ones, to be used. *IJPDLM*'s upcoming special issue on qualitative methods is expected to come with a valuable contribution to the debate of the rigor, relevance but also interest in qualitative methods in logistics research.

Yet already this issue has a number of case studies to offer. Two of the current papers use a multiple case study approach, and another follows the footsteps of Hilmola *et al.* (2005) and Häkkinen and Hilmola (2005) in conducting a content analysis of case studies in logistics research. Content analysis is also used in another article in the issue to identify components that should be considered in evaluating reverse logistics alternatives. Content analysis can be classified as a technique employing secondary data analysis (Rabinovich and Cheon, 2011). Generally, we expect secondary data analysis to be used more in logistics research in the future, as a component in mixed methods research (e.g. supplementing primary empirical data with longitudinal historical data), or as a stand-alone source where the feasibility of conducting an empirical study is low (e.g. due to access to an area or the sensitivity of the topic). What is more, like case studies, content analysis also offers the possibility to combine qualitative assessments (of latent content, searching for meanings) with quantifications (Kassarjian, 1977; Krippendorff, 2004) – and has been used in combining both in logistics as well (e.g. Pasukeviciute and Roe, 2005; Spens and Kovács, 2006).

This issue of *IJPDLM* is particularly interesting as all the articles use approaches with a potential to combine qualitative and quantitative methods: case studies, and content analysis. This goes to show that the calls for mixed methods and multi-method research are not utopia, the potential for such research has already arrived.

The papers in this issue

Yates, Ettouzani and Mena in their article “*Examining Retail on Shelf Availability: Promotional Impact and a Call for Research*” present a framework designed to provide a basis for further research into promotional On-Shelf-Availability (OSA) and to help

retail professionals to prioritize their actions towards improving promotional OSA. While OSA has been vastly researched, promotional OSA has not been widely investigated. This research therefore provides cutting edge information on causes of poor promotional OSA and expands the knowledge of the field by highlighting the similarities and differences between traditional OSA and promotional OSA. The research follows a multiple case study research design involving seven major retailers and four multinational food manufacturers operating in the UK. Although the number of cases does not allow statistical analysis, the size and scope of the organizations involved helps to underpin the generalizability of the findings. Given the increasing use of promotions as a competitive strategy, this area of research is both timely and important.

In the study “*Reverse Logistics Disposition Decision Making: Developing a Decision Framework via Content Analysis*”, **Hazen, Hall, and Hanna**, identify the critical components of the reverse logistics (RL) disposition decision-making process and suggest a decision framework that may guide future investigation and practice. The authors utilized a problem-driven content analysis methodology to identify components that should be considered when deciding which RL disposition alternative should be adopted. Congruent with recent assertions suggesting that RL research is evolving from an operational level focus to a holistic business process approach for maximizing value recovery, this study synthesizes operational level research to develop a practical framework for RL disposition decision-making. Supply chain professionals who refer to this framework during the decision process should gain from this study through more comprehensive analysis of potential RL disposition alternatives.

Content analysis is also used in the next paper by **da Mota Pedrosa, Naslund and Jasmand**. The authors assess the quality of the case study based research approach as documented in articles published during the past 13 years in six leading logistics and supply chain management (SCM) journals. A synthesis of indicators for the quality criteria truth value, transferability, and traceability is used as a basis for the evaluation of case study based articles. The paper called “*Logistics case study based research: Towards higher quality*” in doing so, verifies the validity of ongoing claims for more rigor in case study based research and identifies areas of improvement. The findings give guidance to authors and reviewers in developing articles with a

highquality case study based research approach and help reviewers and readers to evaluate the quality of the described approach.

Forslund in her paper “*Performance Management in Supply Chains; Logistics Service Providers’ Perspective*” explores the handling of the performance management process and its obstacles from the perspective of LSPs. A multiple case study is conducted with the three largest LSPs in Sweden. The literature that includes LSPs in studies of supply chain performance management is scant, in particular it is unusual to have the perspective of LSPs and to apply case-based methodology. The study contributes to performance management theory by providing exploratory knowledge of the supply chain performance management process and its obstacles from the perspective of LSPs.

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