



Review

Collaboration behavioural factors for sustainable agri-food supply chains: A systematic review

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ABSTRACT

3 Meaningful collaboration among heterogeneous stakeholders is essential for achieving sustainability in agri-food supply chains. A substantial amount of research has been focused on examining factors that are critical in shaping characteristics and effectiveness of collaboration in sustainable supply chains from various perspectives. The divergence of such studies and their findings, however, has led to a great proliferation of collaboration behavioural factors proposed. As much as contributing to understanding, different terms and definitions of similar concepts or nature introduced in the literature often also add too much confusion of agri-food supply chain stakeholders in interpreting, evaluating and improving collaboration behaviour. So far, there is lack of a structured analysis on commonalities among those behavioural factors to cluster or consolidate for enhanced clarity and efficiency in assessing and managing collaboration performance toward sustainable agri-food supply chains. Aimed to address such a limitation, this paper applies a systematic review to investigate the landscape of extant literature via the lenses of Resource Dependency Theory and Content Analysis. As a result, 10 key behavioural factors to enable an effective collaboration system for sustainable agri-food supply chain management are identified, which are Joint Efforts, Sharing Activities, Collaboration Value, Adaptation, Trust, Commitment, Power, Continuous Improvement, Coordination and Stability. The findings from this study can be used as a guideline for future research in agri-food supply chain collaboration and help to model and measure collaboration performance more effectively and efficiently.

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1. Introduction

Agri-food supply chains commonly face significant and complex challenges in achieving sustainable development, including economic, environmental, and social aspects. For example, the contributions of the food industry to the increase of waste and greenhouse gas (GHG) emissions are in line with the patterns of growth in consumption in the developed world as well as low-income countries (Li et al., 2014). A study on cocoa production in Columbia and Mexico shows that farmers often face problems in keeping the competitive price of their produces due to the pressure from industries and consumers (Fluck, 2014). In Indonesia, other challenges that need solutions besides the price stability are the insufficient sugar supply in the market due to the inefficiency farm usage, affordability, disintegration sugar policy and goal among stakeholders (Jati and Premaratne, 2015). According to Golini et al. (2017), the meat supply chain in Italy has critical issues related to low margin, dependence on imports, waste management, animal well-being, food safety and traceability, worker skills and satisfaction, and social reputation. Meanwhile, social issues such as health and safety, wages, gender equality and less social protection are also considered serious problems in the agri-food sectors, especially those of developing nations (FAO, 2016; Nemarumane and Mbohwa, 2013). Also, the public awareness of having healthy and environmental friendly food products becomes increasing concerns as well as incentives for most agri-food companies to focus on improving the sustainability performance of their supply chains (Matopoulos et al., 2007).

To deal with complex sustainability requirements in agri-food supply chains, collaboration among heterogeneous stakeholders is essential to collectively achieve a competitive advantage for a better environmental, business and societal outcomes. Stakeholders have opportunities to enhance market share, market growth and margins within a collaborative system (Fearne et al., 2001). Collaboration also can help to reduce conflicts and to foster the responsibility of each stakeholder in maintaining the sustainability (Pomeroy et al., 2007). Essentially, collaboration is a key pathway to achieve equilibrium among all sustainability targets by abating individualistic and opportunistic behaviour of supply chain stakeholders (Lozano, 2007).

Collaboration is vital for empowering farmers, particularly those in low social-economic status communities. As a key stakeholder in agri-food supply chain, farmers typically experience limitations in business skills, aspirations and system thinking, and thus often largely focus on their own operations rather than forming an integrated collaboration system (Serra and Poli, 2015). An effective and high-quality collaboration for sustainable agri-food supply chains can facilitate the farmers to access resources, opportunities and benefits equal to those of other supply chain stakeholders. For

example, collaborations among farmers in Africa help to improve the quality of soil which impact the development of the whole agricultural system (Pretty et al., 2003). Moreover, evidence has shown that business-to-business collaborations in the food industries lead to improving economic, environmental, and social standards through effective communications among the farmers and traders (Hamprecht et al., 2005).

Having synergetic and concerted interactions among heterogeneous stakeholders is important in achieving sustainability in agri-food supply chains. To achieve so, key factors that shape the characteristics and the performance of collaboration, i.e. collaboration behavioural factors, must be first identified, which can help supply chain stakeholders to examine and manage the collaboration system for improvements. Collaboration behavioural factors are organisation characteristics comprising a set of features that are important to meet the desires of stakeholders in proposing good collaboration quality in a supply chain system (Fischer and Reynolds, 2010). Conflicts and misunderstandings can be minimised by understanding and managing collaboration behaviours in the supply chain partnership.

To date, there has been a substantial amount of research on collaboration in agri-food supply chains from various perspectives and industries. However, research that investigates critical collaboration behavioural factors in agri-food supply chain is still much limited (Bezuidenhout et al., 2012; Kottila and Rönni, 2008; Odongo et al., 2016; Palmer, 1996). In order to better inform the review, studies on collaboration behaviour and related factors in other types of supply chains are also included to broaden the basis of investigation for comprehensiveness. Collaboration behavioural factors identified from the review can then be further analysed in relation to their potential applications in the agri-food supply chain context.

The divergence of such studies and their findings, however, has led to a great proliferation of collaboration behavioural factors proposed. As much as contributing to understanding, different terms and definitions of similar concepts or phenomena introduced in the literature often also add too much confusion of agri-food supply chain stakeholders in interpreting, evaluating and improving collaboration behaviour. The lack of consistency and convergence in defining collaboration behavioural factors becomes increasingly problematic when the quality of supply chain collaboration needs to be modelled and assessed for decision support. When too many variables exist, they become too convoluted for applications and can lead to bias, reduced accuracy of results and inappropriate solutions (Ghuri, 2004; Hardt et al., 2012).

Despite extensive research interests in supply chain collaboration, so far little attention has been given to a methodical analysis on similarities and correlations among those behavioural factors to cluster or consolidate for enhanced clarity and efficiency in

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