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Multi-criteria assessment of partnership components

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ABSTRACT

Partnership with other organizations could improve companies' performance. However, partnerships have a high failure rate according to the literature. Therefore, monitoring the performance of a partnership and evaluating the components that affect its performance are essential. Joint decision-making, information sharing, risk/reward sharing, relationship-specific assets, trust and commitment are identified as the major components that affect the performance of an ongoing partnership. However, no previous study evaluated the components of an ongoing partnership over time. In this study, a multi-criteria decision support model is proposed to assess the components that influence the performance of an ongoing partnership. Multiple indicators are used to assess each component. The interdependency and importance of the components and their indicators are incorporated into the model using the Warshall's Algorithm and Analytic Network Process (ANP), respectively. The importance of each component and indicator, and a single number for the overall level of partnership components in each period, named as Partnership Component Index (PCI) here, are the outputs of the proposed model. PCI is a quantitative multi-dimensional index. A partnership between a forest company and a sawmill in British Columbia, Canada is used as a case study to test the model. The components of the partnership is assessed in three different periods using PCI. The results are validated by the managers and sensitivity analysis is also performed.

1. Introduction

During the past two decades, partnerships have become one of the main strategies for increasing companies' competitiveness (Kemppainen & Vepsäläinen, 2003). Partnership is a collaborative interfirm relationship between two or more independent companies. Partnerships could help companies remain competitive by increasing efficiencies (Ahuja, 2000), developing new products (Primo & Amundson, 2002), entering into new markets (Garcıá-Canal, Duarte, Criado, & Llaneza, 2002), and accessing new resources (Rothaermel & Boeker, 2008). A study by Kale, Singh, and Bell (2009) reported that over 80% of Fortune 1000 CEOs believed that partnerships were the main source of generating almost 26% of their companies' revenues in 2007–08. However, partnerships tend to have high failure rates (Dyer, Kale, & Singh, 2001). Studies have shown that between 30% and 70% of partnerships fail (Bamford, Gomes-Casseres, & Robinson, 2004). Therefore, it is essential to maintain and improve the partnerships by focusing on the components that affect its performance.

Joint decision-making, information sharing, risk/reward sharing, relationship-specific assets, trust and commitment are identified as the major components that affect the performance of an ongoing partnership (Brinkerhoff, 2002; Kim, Kumar, & Kumar, 2010; Lambert, Emmelhainz, & Gardner, 1996; Mohr & Spekman, 1994; Sodhi & Son, 2009; Spekman, Jr, & Myhr, 1998). Components are the joint processes and activities established by partners in order to maintain and improve partnerships (Lambert et al., 1996). Thus, assessing and adjusting partnership components would help in maintaining and improving an existing partnership (Arshinder, Kanda, & Deshmukh, 2008; Simatupang & Sridharan, 2005; Sodhi & Son, 2009).

Previous studies assessed the intensity of partnership components by either a single measure, often subjectively by asking the decision makers for the overall existence of the components (e.g. Glaister & Buckley, 1998; Johnston, McCutcheon, Stuart, & Kerwood, 2004; Wilson, 1995), or multiple indicators (e.g. Lambert et al., 1996; Simatupang & Sridharan, 2005; Vlosky et al., 1998). Single measure studies cannot capture all the components affecting a partnership. Therefore, some studies used multiple indicators to assess the intensity of each component (e.g. Lambert et al., 1996; Simatupang & Sridharan, 2005). Lambert et al. (1996) suggested a scoring index based on the drivers to identify the appropriate level and time horizon of a partnership (short or long term) and

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then determined the required level of the components according to the time horizon of the partnership. Simatupang and Sridharan (2005) proposed a multi-dimensional index, named as collaboration index, for estimating the level of partnership components. The multi-dimensional indices developed by Lambert et al. (1996) and Simatupang and Sridharan (2005) did not incorporate the importance and interdependencies of the measures. Recently, few studies considered the importance of the components (Arshinder et al., 2008; e.g. Chen & Wu, 2010; Verdecho, Alfaro-Saiz, Rodriguez-Rodriguez, & Ortiz-Bas, 2012), nevertheless, they did not use any methods to estimate the intensity of the components quantitatively at different time periods. To the best of our knowledge, there is no multi-criteria model to assess the components of an ongoing partnership in different time periods considering multiple components. In addition, there is no study to evaluate partnership components using multiple quantitative indicators.

The objective of this study is to fill the existing gap in the literature by developing a multi-criteria decision support model to assess the components of an existing partnership considering multiple indicators, their interdependencies, and their importance.

2. Literature review

The literature review section is divided into two parts: 1) partnership components, sub-components and some of their indicators, and 2) previous multi-criteria decision making models for partnership evaluation.

2.1. Partnership components

Studies show that the main components influencing partnership performance are similar in all partnerships, however, their intensity and potential indicators could vary among different types of partnership (Arshinder et al., 2008; Lambert et al., 1996; Simatupang & Sridharan, 2005). Information sharing, join decision-making, relationship-specific assets, risk/reward sharing, trust and commitment have been identified as the major components of ongoing partnerships (Arshinder et al., 2008; Lambert et al., 1996; Simatupang & Sridharan, 2005). The intensity of the components directly affect the performance of partnerships. Simatupang and Sridharan (2005) found a positive correlation between collaboration performance and partnership components in a survey of 73 companies in New Zealand. Similarly, Piltan, Sowlati, Cohen, Kozak, and Gaston (2015) reported a strong positive correlation between partnership components and partnership performance based on survey of 46 forest companies in British Columbia, Canada. In the following, each component is explained in detail.

Information sharing is defined as the formal and informal sharing of relevant, reliable and timely information between partners (Ramanathan, 2013) and is characterized by content, reliability, accuracy and frequency of information (Neumann & Segev, 1979). Information sharing helps partners to coordinate and adjust accordingly (Sodhi & Son, 2009). Information shared between partners can be related to operational, tactical and strategic plans and decisions (Huang, Lau, & Mak, 2003; Lambert et al., 1996). The type of information shared depends on the type of partnership. In a supplier-buyer partnership, sharing timely information about customer orders and demand forecasts helped companies in reducing their inventory and stock-out costs and lead time (Bourland, Powell, & Pyke, 1996; Reddy & Rajendran, 2005). In another study, Yu, Ting, and Chen (2010) found the effects of sharing capacity, demand and inventory information on the inventory level, stock-out costs, production and transportation lead times, and customers demand in partnerships between retailers and manufacturers.

Joint decision-making refers to joint planning that ranges from operational to strategic planning (Arshinder et al., 2008; Lambert et al., 1996; Simatupang & Sridharan, 2005). Decisions about pricing, promotion policies, scheduling, inventory, etc. could be done jointly by partners. Joint decision-making improves partnership performance by reducing information asymmetry (Saxton, 1997) and increasing organizational learning and knowledge transfer (Kogut and Zander, 1996). Joint decision-making is an indication of the companies' capacity to work in a collaborative environment by sharing the power (Sheth & Parvatiyar, 1992). Primo and Amundson (2002) found positive influence of suppliers' involvement in decision making on product quality, project development time and project cost in developing a new product in 38 joint projects in the electronics industry.

Risk/reward sharing refers to the mechanisms for aligning partners' incentives by sharing costs, risks, and rewards in the forms of contracts and agreements. Risk/reward sharing in partnership is identified as a critical factor influencing partnership performance (Lambert et al., 1996; Simatupang & Sridharan, 2005; Sodhi & Son, 2009). Risks can be classified into four main categories: 1) external risks caused by change in the respective market or financial system, 2) operational risks associated with the operational and administrative procedures of the particular business, 3) legal risks associated with the change in the rules and regulations, and 4) other risks such as natural disasters (floods or fire) (Jolly, 2003). The lack of agreement on the mechanisms of sharing risk/reward was one of the main reasons for non-collaborative relationships with other companies in supply chains (Narayanan & Raman, 2004). Not all the risks/rewards shared between partners are equally sharable such as the time saved in partnership in transportation or measurable such as the reputation gained from a partnership in marketing, thus the sociological indicator of "tolerance for unequal short-term losses/gains in favor of long-term mutual benefits" was suggested by Lambert et al. (1996) to capture this dimension.

Relationship-specific assets are assets dedicated to a specific relationship and their redeployment entails considerable switching costs (Geyskens, Steenkamp, benedicte, & Kumar, 2006). Different studies found that physical, IT and human assets tailored to a partnership positively affect partnership performance by increasing trust, commitment and switching cost (Dyer, 1996; Handfield & Bechtel, 2002; Sodhi & Son, 2009). Dyer (1996) investigated the extent to which performance variations in supplier-customer relationships were explained by the differences in relationship-specific assets using case studies of Japanese and U.S automakers. His finding indicated a positive influence of relationship-specific assets (human, IT and site assets) on the performance (quality, inventory costs, and the time required to develop new products).

In this paper, trust and commitment will not be considered for evaluation for two reasons. First, they are difficult to define and operationalize in the context of partnerships (Laeequddin, Sahay, Sahay, & Waheed, 2010; McEvily & Tortoriello, 2011; Seppänen, Blomqvist, & Sundqvist, 2007). Second, they are mostly mediators between other components and partnership performance (Kwon & Suh, 2005; Chen, Yen, Rajkumar, & Tomochko, 2011; Piltan et al., 2015). In a survey of 47 companies in the forest industry, Piltan et al. (2015) found that commitment was a mediator between trust and partnership performance, and trust itself was a mediator between partnership performance and three other components, namely information sharing, joint decision-making and relationship-specific assets. Table 1 summarizes the components, sub-components and the indicators used in previous studies.

2.2. Decision models

Previous empirical studies assessed the partnership components using subjective respondents by asking managers about the intensity of each component in the surveyed companies