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SOCIAL CAPITAL IMPACT IN VIETNAM PEPPER SUPPLY CHAIN MANAGEMENT

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Zusammenfassung

This article develops a set of indicators to assess social capital of the Vietnamese pepper supply chain in the three main aspects, i.e. trust, norm, and network. Likert scale is used to quantify the magnitude of the social capital and to calculate the social capital index. Then, the research evaluates the impact of social capital on the performance of the Vietnamese pepper supply chain using the Structural Equation Modelling (SEM). Finally, implications of the influence of social capital in supply chain management are discussed. This study contributes to the literature of social capital and SEM methodology.

Keywords

social capital, supply chain, Structural Equation Modelling, pepper, Vietnam.

1 Introduction

The impact of social capital in supply chain network has been mentioned in recent research (Borgatti and Li, 2009; Bernardes, 2010; Yim and Leem, 2013), which provoke the concern about the relationship between social capital and supply chain management. An assumption is made that social capital of the supply network decides the quality of the linkages among its stakeholders, and hence its performance. The goal of this research is to analyze the relationship between social capital and supply chain management to address the following objectives (1) to estimate social capital of actors in the pepper supply chain network; (2) to estimate the impacts of social capital on the performance of the pepper supply chain; (3) implications of the relationship between social capital and supply chain network's performance.

This research contributes in two parts. First, it develops a set of indicators to evaluate the social capital of the Vietnamese pepper supply chain network. The set of indicators can be applied in other product supply chain. Second, the research evaluates the impact of social capital on the performance of the Vietnamese pepper supply chain using the Structural Equation Modelling (SEM). This is the very first study that applies SEM in quantifying the impact of social capital in a food supply chain of a developing country; therefore, it contributes to the literature of studies on social capital and SEM methodology.

2 Methodology

2.1 Development a set of criteria to assess social capital

Basing on social capital theory (Bourdieu, 1985; Coleman, 1988; Fukuyama, 2001; Putnam, 2001), a set of indicators of social capital are developed. The Likert scale is used to quantify the magnitude of social capital of stakeholders in the Vietnamese pepper supply chain. The set of indicators focuses on the criteria of social capital, i.e. trust, norm, and network.

In parallel, a set of indicators of the supply chain performance is developed. Currently, the Vietnamese pepper supply chain works under spoken contracts between farmers and traders and between traders with processing companies. The quality of pepper corn is not ensured by farmers, and neither is the price and demand quantity by traders and processing companies. The performance considered in this research consists of bargaining power, supply speed control, advanced technique adaptation, and contract involvement, whereas social capital is indicated by a social capital index which is derived from the set of indicators. Bargaining power means the capability to increase selling price and decrease buying price; supply speed control means the capability to delay or expedite a supply order; advanced technique adaptation refers to the likelihood that farmers switch to new technique to increase the quality of pepper corn or to reduce production costs, such as changing the planting habit, reducing pesticide use, or using genetic modified (GM) seeds when available; contract involvement means the likelihood that farmers and/or traders will join in a production and

supply contract with a processing company, which increases the efficiency of the supply chain network (Singh, 2007)

2.2 Research model

Base on Structural Equation Modeling to describe the variables and research hypotheses

Use exploratory factor analysis to identify factors that influence the components of social capital: trust, norm, and network; and factors that influence the components of supply chain performance. Depending on the factors, factor models are identified.

Factor models:

$$x_j = \alpha_{j0} + \sum_{j=1}^3 \sum_{m=1}^M \alpha_{jm} u_{jm} + \varsigma_j$$

$$x_4 = \alpha_{40} + \alpha_{41}x_1 + \alpha_{42}x_2 + \alpha_{43}x_3 + \varsigma_4$$

$$y_i = \beta_{i0} + \sum_{i=1}^4 \sum_{l=1}^L \beta_{il} v_{il} + \delta_i$$

in which, x_j ($j=1-3$) are components of social capital. x_4 is social capital. u_j ($j=1-M$) are factors that influenced social capital. y_i ($i=1-4$) are components of supply chain performance. v_l ($l=1-L$) are factors that influence supply chain performance. M and L are the number of factors found from factor analysis.

Basing on the social capital theory, structural models are defined to analyze the impact of social capital on the supply chain performance:

$$y_i = \eta_{i0} + \sum_{i=1}^4 \sum_{j=1}^3 \eta_{ij} x_j + \varepsilon_i$$

Research hypotheses:

H₁: $\alpha_{jm} \neq 0$ and significant; H₂: $\beta_{il} \neq 0$ and significant; H₃: $\eta_{ij} \neq 0$ and significant

3 Expected results

The set of indicators of social capital is expected to bring about a very first quantitative assessment of the social capital of the stakeholders of the Vietnam pepper supply chain. The regressions basing on Structural Equation Modelling are expected to have significant coefficients of factor variables and structural variables in the models and to prove the positive relationship between social capital and supply chain performance. Stakeholders with higher social capital are expected to have greater influence in all or at least one of the aspects of the Vietnam pepper supply chain performance, e.g. bargaining power, supply speed control, advanced technique adaptation and contract involvement

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