

Chapter 6

Perceived Moderating Ability of Relational Interaction vs. Reciprocal Investments in Pursuing Exploitation vs. Exploration in RFID Supply Chains

Rebecca Angeles

University of New Brunswick, Canada

ABSTRACT

This study looks at the perceived ability of two variables, reciprocal investments and relational interaction, to moderate the relationship between the independent variables, components of IT infrastructure integration and supply chain process integration, and two dependent radio frequency identification (RFID) system variables, exploitation and exploration. Using the moderated regression procedure, this study seeks to test the ability of both reciprocal investments and relational interaction to moderate the relationship between the independent and dependent variables using data gathered from 87 firms using an online survey. Results show that relational interaction is an effective moderator between the dependent variable, exploitation, and the following independent variables: data consistency, cross-functional application integration, financial flow integration, physical flow integration, and information flow integration (Table 1). Neither reciprocal investments nor relational interaction effectively moderated the independent variables, IT infrastructure integration and supply chain process integration and the other dependent variable, exploration.

INTRODUCTION

This study looks at the perceived ability of two variables, reciprocal investments and relational

interaction, to moderate the relationship between the independent variables, components of information technology (IT) infrastructure integration and supply chain process integration, and two dependent radio frequency identification (RFID) supply chain system variables, exploitation and

DOI: 10.4018/978-1-61692-020-3.ch006

exploration. Though not at the expected speedy rate of diffusion, RFID system implementation initiatives are still a major consideration in improving supply chains across industries.

The IT infrastructure and business process support that should undergird RFID systems are a great concern considering how supply chains are getting more complex and more international in their geographic scope (Simchi-Levi, Kaminsky, & Simchi-Levi, 2004). Firms that will be using RFID systems to gain exploitation-related goals seek to improve operational efficiencies, streamline activities, and achieve greater control over process execution. On the other hand, those that seek exploration-related outcomes will use RFID systems to find innovative ways of solving problems and meeting challenges. The demands on supply chain partners that will be participating in these RFID initiatives will be significant enough for these firms to consider using either relational interaction routines or reciprocal investments in ensuring the attainment of their goals. Reciprocal investments are transaction-specific investments made by supply chain trading partners in a business exchange intended to cement the relationship beyond what is ordinarily delivered by contractual agreements. Relational interaction routines are a combination of formal and informal mechanisms used to facilitate the exchange of information and knowledge between a focal firm and its trading partners.

This study uses the moderated regression procedure to test the ability of both reciprocal investments and relational interaction to moderate the relationship between the independent and dependent variables using data gathered from 87 firms using an online survey.

BACKGROUND

Literature Review

IT Infrastructure Integration Capability

IT infrastructure integration is defined as the degree to which a focal firm has established IT capabilities for the consistent and high-velocity transfer of supply chain-related information within and across its boundaries. This study closely looks at the IT infrastructure integration requirements needed to support the use of RFID within a supply chain context. The formative construct introduced by Rai, Patnayakuni, and Seth (2006) was adopted in this study and used both conceptually and in the instrumentation as well. They define IT infrastructure integration in terms of two sub-constructs, data consistency and cross-functional SCM application systems integration.

The extent to which data has been commonly defined and stored in consistent form in databases linked by supply chain business processes is referred to as data consistency (Rai, Patnayakuni, & Seth, 2006). Data consistency is a key requirement in creating a data architecture that defines the structure of the data and the relationships among data entities that is fundamental in establishing interorganizational data sharing (Van Den Hoven, 2004). Simchi-Levi, Kaminsky, and Simchi-Levi (2004) note that recently, many suppliers and retailers observed that despite the lack of variation in customer demand for products, inventory and back-order levels vary, nevertheless, across many supply chains, oddly enough. This observed variability up and down the supply chain is called the "bullwhip effect" (Moyaux & Chaib-draa, 2007; Simchi-Levi, Kaminsky, & Simchi-Levi, 2004). Sharing consistent data upstream and downstream in the supply chain is one major solution to overcoming the bullwhip effect.

Data from legacy systems of supply chain trading partners need to be accessed to produce useful, integrated data, and to be able to transport

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/perceived-moderating-ability-relational-interaction/43351

Related Content

A Success Model for Enterprise Resource Planning Adoption to Improve Financial Performance in Vietnam's Equitized State Owned Enterprises

Long Pham and Jeffrey E. Teich (2013). *Competition, Strategy, and Modern Enterprise Information Systems* (pp. 81-97).

www.irma-international.org/chapter/success-model-enterprise-resource-planning/70320

Impact of Digital Marketing on Consumers' Impulsive Online Buying Tendencies With Intervening Effect of Gender and Education: B2C Emerging Promotional Tools

MD Sarwar-A Alam, Daoping Wang and Abdul Waheed (2019). *International Journal of Enterprise Information Systems* (pp. 44-59).

www.irma-international.org/article/impact-of-digital-marketing-on-consumers-impulsive-online-buying-tendencies-with-intervening-effect-of-gender-and-education/232164

Efficient Alternatives in the Adoption of Software for Public Companies

Carmen de Pablos Heredero and David López Berzosa (2012). *Organizational Integration of Enterprise Systems and Resources: Advancements and Applications* (pp. 318-331).

www.irma-international.org/chapter/efficient-alternatives-adoption-software-public/66986

An Extended LBWA Framework in Picture Fuzzy Environment Using Actual Score Measures Application in Social Enterprise Systems

Sanjib Biswas, Shuvendu Majumder, Dragan Pamucar and Suman Kumar Dawn (2021). *International Journal of Enterprise Information Systems* (pp. 37-68).

www.irma-international.org/article/an-extended-lbwa-framework-in-picture-fuzzy-environment-using-actual-score-measures-application-in-social-enterprise-systems/289844

Enterprise Architecture for Personalization of e-Government Services: Reflections from Turkey

Alpay Erdem, Ihsan Tolga Medeni and Tunç D. Medeni (2012). *Enterprise Architecture for Connected E-Government: Practices and Innovations* (pp. 389-411).

www.irma-international.org/chapter/enterprise-architecture-personalization-government-services/67032