

HOW SOCIAL CAPITAL, SUPPLY CHAIN INTEGRATION, AND CUSTOMER LOYALTY AFFECT PERFORMANCE

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Abstract

This study identifies a common variable from supplier to consumer within the firms and supply chains of the Northeastern United States. Social capital appears to be significant from supply chain all the way to the consumer. Retail firms and consumers within the Northeast were chosen as the diversity of cultures and population density were ideal to provide the 405-participant population in this study. The study argues that social capital mediates the relationship between supply chain integration and firm performance within the supply chain. Findings were similar to that of previous works in the manufacturing and service industries; however, the results of this study were unique as they directed the focus of the research instruments on the retail industry.

Keywords: Social capital, supply chain, customer loyalty, performance, retail industry.

INTRODUCTION

A lack of customer loyalty is detrimental to retail firms, as repeat business generates growth and influences overall firm performance (Sun & Kim, 2013). Many factors play into the success or failure of sustaining customer loyalty within firms including the customer experience (Smart, 2016). Factors such as customer engagement during the shopping experience, customer relationships built over time (Rao & Kumar, 2013), as well as situations that involve firm's logistics processes such as product availability and experiences with product returns (Bouzaabia, Allard, & Semeijn, 2013) influence the customer experience within firms.

The business community describes customer loyalty as being a dynamic and complex situation, by the broader, business-research community (Aksoy, 2013; Balaji, 2015; Watson, Beck, Henderson, & Palmatier, 2015). Customer satisfaction was once thought to be the overall determiner of customer loyalty, and while still an important factor, customer satisfaction is not the lone factor

when considering customer loyalty. Trust, satisfaction, and quality of service (Shpëtim, 2012) in addition to relationships (Merlo, Bell, Mengüç & Whitwell, 2006) that are built over time, generating social capital.

According to Jones and Taylor (2012), social capital is described as collaborative relationships that have a connection to financial results. These collaborative links are not only pivotal in the creation of customer loyalty, but also in the success of the supply chain. Social capital mediates logistics processes through the forward and reverse supply chain by aiding in the implementation of supply chain integration (Yim & Leem, 2013). Kim (2013) asserts that SCI allows for clear communication and the setting of common objectives between all members of the supply chain.

Retail stores face potential firm performance issues and monetary loss due to a lack of relationships with their customer base (Wagner, 2015) and superficial treatment of processes within omnichannel retail logistics processes (Jeszka, 2014). Factors involving retail firm logistics can be quite expensive (Bouzaabia et al., 2013). Reverse logistics costs, from the point of return alone, make up approximately \$100 billion-a-year, approximately 4% of the U.S. Global Domestic Product (GDP), in losses for manufacturers (Blanchard, 2012) and \$267 billion-a-year in lost sales for retailers (Penske 2014). Rouse (2016) asserts that omnichannel retailing is structured to provide the consumer with a seamless shopping experience online, over the phone, by app or in a brick-and-mortar location. Additionally, Rouse (2016) states that the advantage of the omnichannel structure is a true integration that can assist the customer just as efficiently in the store as they can by phone or internet chatbox.

Social capital and customer satisfaction are vital concerns in logistics processes and how these processes can affect customer loyalty in service firms, but it has yet to be tested in retail companies (Huscroft, Hazen, Hall, Skipper & Hanna, 2013). Therefore, this study will consider the following research questions: (1) What are the relationships between social capital, the implementation of supply chain integration, and firm performance; and (2) What is the relationship between social capital, customer loyalty, and firm performance.

BACKGROUND

Supply chain integration (SCI) was determined to be one of the most important factors when creating a competitive advantage through internal and external networks (He & Lai, 2012). Basnet (2013) asserts that communication, coordination and effective relationships are three factors within integration construction, and this has been examined in retail firms supply chains. Zhang, Gunasekaran and Wang (2015) brought forth a comprehensive listing of the components of SCI, which includes material integration. Material integration was defined on four levels: material handling, handling management, and delivery decision support. According Anand and Grover (2015), established material handling procedures is a large part of the success or failure of the returns

processes within retail firms. Improving these processes is crucial to for customer satisfaction and loyalty.

Supply Chain Integration and Firm Performance

Childerhouse and Towill (2011) identified a sub-par integration in some supply chains. Fawcett and Magnan (2002) attribute some of this less than exceptional integration practice on a short-term gain focus by procurement managers as they tend to overlook the long-term advantages of relationships and partnerships that harbor social capital within the supply chain. According to Kim (2013), internal integration is necessary and needs to be combined with external integration to enhance customer satisfaction and improve competitive advantage. Huo, Qi, Wang, and Zhao (2014) argued that competitive strategies put in place have a significant influence on the effectiveness of SCI, and that financial performance and operational performance must both be considered to understand the success of SCI entirely.

Supply Chain Integration and Social Capital

According to Zhang and Huo (2013), dependence is a need to maintain relationships with business partners throughout the supply chain, and trust is viewed as a critical form of social capital that facilitate cooperation amongst supply chain partners. Using a structural equation model (SEM) modeling, they estimated relationships and determined that dependence and trust are positively associated, and that trust is a mediator between dependence and SCI. Similarly, Yim and Leem (2013) argue that social capital is a mediating factor between SCI and firm performance. Utilizing a partial least squares (PLS) and SEM, they examined the relationships between these variables. The three components presented that make up the structure of social capital are relational capital, structural capital and cognitive capital. Their work also noted that SCI was the intermediary between the relationship of social capital and firm performance and that relationships amongst members of the supply chain, in multiple industries, enabled higher levels of firm performance. Hammervoll (2011) suggests that relational capital (social capital) within the supply chain is a summation of goodwill, trust, and respect between members of the supply chain. Social and collaborative processes, improved through relationship interactions, are created through routines that are built over time.

Supply Chain Integration and Customer Loyalty

According to Jiang (2011), supply chains have been actively working on the formulation of the integrated business practices that are affixed to the cultivation of customer loyalty. Lam and Ip (2011) suggest that understanding customer satisfaction is understanding that they are influencing the performance capabilities in inventory management. Jiang (2011) asserts that the real value of the supply chain lies in its ability to provide the consumer with products and services that meet their demand and customer loyalty and satisfaction are the output of that effort. Furthermore, Eggert, Henseler, and Hollmann (2012) concluded that increasing levels of competition in the global market have caused

the focus of customer loyalty to be a primary concern of brand manufacturer's and was also spilling over onto distributors alike.

According to Fayezi and Zomorodi (2015), integration of relationships within the supply chain allows for a more flexible supply chain. Flexibility within the supply chain, helps firms to meet the needs of the consumer better. According to Kibbeling, van der Bij and van Weele (2013), end-user satisfaction was a culmination of consumer encounters, with a firm, over time. This end-user satisfaction determines the continuation of a firm as this was an indicator of customer loyalty. According to Li, Ragu-Nathan, Ragu-Nathan, and Rao (2006), an essential dimension in supply chain management practices (SCM) was customer relationship. This key dimension was defined as the entire set of practices that are utilized to manage customer concerns, grow relationships and improve customer experiences. Li et al. (2006) assert that loyal customers are a sustainable competitive advantage as they act as a barrier to potential competition.

Customer Loyalty and Social Capital

According to Villacé-Molinero, Reinares-Lara and Reinares-Lara (2016), excessive competition in the global market has created intense focus on acquiring and keeping customers. The cost of acquiring new customer is increasing rapidly, so keeping existing customer is becoming more and more important. Additionally, Anderson, Fornell and Lehmann (1994) suggest that profitability from customers increases as loyalty increases over time, so initial purchases are not what's truly driving the business. This makes newly acquired customers even less valuable. Villacé-Molinero et al. (2016) assert that these situations have made customer loyalty a necessity for a business to achieve profitability. Srivastava and Kaul (2016) assert that these two types of loyalty are behavioral loyalty and attitudinal loyalty. Villacé-Molinero et al. (2016) describe behavioral loyalty as loyalty expressed through choices, such as repeat purchases and attitudinal loyalty was described as the customer conviction or inclination toward a specific firm. Jones and Taylor (2012) argued that relationships with customers can be viewed as social capital and that the existence of these relationships is an important factor in the development of customer loyalty.

METHOD

This study utilized two five-point Likert scale questionnaires. A PLS-SEM instrument was used to determine significance of the data and to perform a non-iterative application of a partial least squares regression to obtain outer weights, loadings, and structure model relationships for the latent and the manifest variables within this study. Additionally, the study applied a bootstrap resampling procedure to evaluate the statistical significance of the path coefficients. PLS-SEM was chosen for several reasons. According to Chin (1998), PLS constructs can be measured by a single item and do not have the four-question per construct requirement of covariance-based approaches and within the questionnaires being utilized for this study, there were varying

numbers of questions relating to the various constructs. Hair, Ringle, and Sarstedt (2011) stated that PLS handles non-normal distributions very well. Additionally, Chin (1998) asserts that PLS accounts for measurement errors and is more accurate in its estimations of effects.

The questionnaire that was utilized, for the supply chain manager portion of the population, was pretested on supply chain managers. Feedback from these managers was utilized to identify unnecessary or repetitive questions that may have needed revision or removal to strengthen the readability and quality of the survey (Cronbach & Meehl, 1955; Straub, 1989). The questionnaire that was utilized for the retail consumer population was constructed from previous studies that presented psychometric properties relating to the variables being tested (Cote & Healy, 2001; Sharma & Patterson, 2000). This study examined the strength of the relationship between the three aforementioned variables, using information gathered from retail consumers as well as supply chain professionals within the retail industry supply chain of the Northeastern United States.

A total of 405 participants were chosen as the total population for this study. The population numbers were generated by Qualtrics to reach an acceptable number of valid responses. A sample of 315 participants was collected from the retail supply chain management sector (SCM) in the Northeastern United States of which there were 80 valid responses, yielding a usable response of 25%. SCM's within the retail sector was chosen as it met the parameters set forth by the study to determine the relationships between social capital and SCI within retail firm performance. The intent was to acquire a sampling of SCM professionals from the various retail industry supply chains offering groceries, apparel, and home goods. Additionally, a population of 90 participants was chosen within the Northeastern United States retail firm consumer base of which there were 80 valid responses, yielding a usable response of 88.89%. With an average of 345.5 people per square mile, the population density of the Northeast helped to guarantee a usable response size.

To choose a valid population size, comparable studies that used PLS-SEM were examined. Yim and Leem (2013) sent out 1,000 questionnaires, with a usable response of 420 or 42% and Jones and Taylor (2012) sent out 4,000 questionnaires, with a usable response of 337 or 8.4%. Considering these two studies, the usable average response was 378. Additionally, G-Power software was utilized to determine a suggested sample size. According to Mayr, Erdfelder, Buchner, and Faul (2007), G-Power is a free general power analysis program for prior, posthoc and compromise power analyses for t-tests, F-tests and χ^2 -tests. A sample size of 68 is the recommended sample size of G-Power, using Dattalo (2008) settings, with an effect size $f^2 = 0.15$, $\alpha = 0.05$, power = 0.8 and 2 predictors. Taking all of these factors into consideration, the chosen population size for this study was 405 participants or 315 participants for the Retail SCM survey and 90 participants from the Retail Consumer survey. A 22% participation rate would have provided the suggested 68 participant sample size for the Retail SCM survey of which a 25% usable rate, 80 participants, was acquired and a

75% participation rate would have provided the suggested 68 participant sample size for the Retail Consumer survey of which an 88.89% usable rate, 80 participants, was acquired.

The data were tested for normality and adjustments made depending on the deviation. A total of three variables were tested. The three dimensions of social capital (relational, structural and cognitive) were tested against SCI and customer loyalty. The researchers utilized PLS-SEM to identify correlation coefficients between the multiple sets of variables. One of the variable sets under examination was behavioral loyalty, attitudinal loyalty, service quality, alternative attractiveness, switching costs, cognitive social capital, and relational social capital. The other variable set under examination was supply chain relational capital, supply chain structural capital, supply chain cognitive capital, SCI and firm performance. The instruments came in the form of questionnaires from Jones and Taylor (2012), which was created from a culmination of various authors. Reliability of this study is demonstrated through all-composite reliabilities being > 0.8 ; all AVEs exceeded 0.5 demonstrating evidence of convergent validity. The instrument that was utilized for the SCM portion of the population is from the Yim and Leem (2013) study.

RESULTS

The response rate of the retail consumer survey was 90% as most of the respondents met the requirements set forth by the study, however of the 90 participants, four participants replied no in regard to the terms of the informed consent, two of which also responded no to the age requirement. Four participants responded no to meeting the age requirement of 18+ years of age. On the geographical portion, two participants responded they were from the Midwest and one participant responded that they were from the West. The remaining usable sample for the study was 80 participants. These 80 participants were comprised of retail consumers, 18+ years of age, who live in the Northeastern United States and shop at a retail firm location.

The response rate of the SCM survey was 25% as many of the respondents did not meet the specific criteria required for the study. Of the 315 participants, 12 participants replied no in regard to the terms of the informed consent, three of which also responded no to the age requirement. Six participants responded no to meeting the age requirement of 18+ years of age. On the geographical portion, 207 participants responded that they did not work in the retail supply chain industry in the Northeastern United States and 13 respondents stated that they did not work as a supply chain manager. The remaining usable sample for the study was 80 participants. These 80 participants were comprised of retail firm supply chain managers, 18+ years of age, who live and work as an SCM in the Northeastern United States.

Descriptive Analysis

Customer loyalty was measured by behavioral loyalty, attitudinal loyalty, service quality, alternative attractiveness, and switching costs. Social capital was measured by cognitive social capital, relational social capital, and structural social capital. Supply chain relational capital was measured by commitment, socialization, trust, and reciprocity. Supply chain structural capital was measured by network use and network appropriateness.

Supply chain cognitive capital was measured by shared value and common fate. Supply chain integration was measured by information sharing, resource sharing, and collaboration. Firm performance was measured by innovation-oriented, operation oriented, and growth-oriented.

Findings

The data from the questionnaire was plugged into Smart PLS 2.0 for a partial least squares test as demonstrated by Lowry and Gaskin (2014), and bootstrapping was utilized to test for a 95% confidence level. All three variables demonstrated a significant relationship between customer loyalty and social capital. These findings were similar to those found in the studies from which the instruments were taken.

The results of the partial least-squares test indicate a statistically significant relationship between SCI and firm performance. The partial least squares test also indicated a statistically significant relationship between supply chain structural capital (SCSC) and supply chain cognitive capital (SCCC). However, the partial least squares test indicated that there was not a significant relationship between supply chain relational capital (SCRC) and firm performance. Additionally, the Sobel test for mediation determined that all three constructs related to social capital (SCSC, SCCC, SCRC) partially mediated the relationship

TABLE 1. SCM Survey Results

Social Capital Construct	t-value
Supply Chain Structural Capital	2.375
Supply Chain Cognitive Capital	3.471
Supply Chain Relational Capital	0.914
Supply Chain Integration	31.568

Note: Significant to firm performance is greater than 1.96 between SCI and firm performance as all mediated effects were > 1.96. Therefore, social capital does mediate the relationship between SCI and firm performance.

Likewise, the results of the partial least-squares test indicate a statistically significant relationship between social capital and customer loyalty. The partial least squares test indicated a significant relationship between relation social capital and customer loyalty, a significant relationship between structural social

capital and customer loyalty, and a significant relationship between cognitive social capital and customer loyalty. Although the SCM portion of the study was inclusive of firm performance, this portion of the study did not test for the direct significance between social capital and firm performance or the direct significance on customer loyalty and firm performance, as firm performance was an untested variable within the confines of this research instrument.

TABLE 2. Retail Consumer Survey Results

Social Capital Construct	t-value
Relational Social Capital	6.409
Structural Social Capital	2.954
Cognitive Social Capital	2.383

Note: Significant to retail customer loyalty if greater than 1.96.

The SCM variables (commitment, socialization, trust, reciprocity, network use, network appropriateness, shared value, common fate, information sharing, resource sharing, and collaboration) were put through the Sobel test for mediation (Sobel, 1982; Soper, 2017). The Sobel test for mediation requires that you input several variables which are derived from the Smart PLS 2.0 system (Lowry and Gaskin, 2014). The values needed are the beta value of the independent variable to the mediator, the beta value from the mediator to the dependent variable, the standard error value from the independent variable to the mediator and the standard error value from the mediator to the dependent variable. The Sobel test variable that is derived from this should have an absolute value > 1.96 , and the two-tailed probability should have a value that is < 0.05 to demonstrate mediation. The T-statistic is then examined with and without the presence of the mediator to determine whether there is full or partial mediation. If the direct effect is > 1.96 without the mediator and in the presence of the mediator, then there is partial mediation. If the direct effect is < 1.96 in the presence of the mediator, then there is full mediation.

In regards to supply chain structural capital, when Sobel tested for mediation the Sobel Test Statistic came back at 2.695, which is > 1.96 and yielded a two tail probability value of 0.007 which is < 0.05 demonstrating a 95% level of confidence. These test results demonstrate that supply chain structural capital does mediate the relationship between supply chain integration and firm performance. Under the Smart PLS 2.0 test, the unmediated direct effect is 0.878 and when mediated is reduced to 0.586 and when bootstrapped the T-Statistic is 31.568 when unmediated and 5.469 when mediated, which demonstrates partial mediation. This is determined by the fact that when the variable is mediated and when not mediated the T-Statistic is still $>$ an absolute value of 1.96.

In regards to supply chain cognitive capital, when Sobel tested for mediation the Sobel Test Statistic came back at 5.323, which is > 1.96 and yielded a two tail probability value of 0.0000001 which is < 0.05 demonstrating a 95% level of confidence. This demonstrates that supply chain cognitive capital does mediate

the relationship between supply chain integration and firm performance. Under the Smart PLS 2.0 test, the unmediated direct effect is 0.878 and when mediated is reduced to 0.268 and when bootstrapped the T-Statistic is 31.568 when unmediated and 2.266 when mediated, which demonstrates partial mediation. This is determined by the fact that when the variable is mediated and when not mediated the T-Statistic is still $>$ an absolute value of 1.96.

In regards to supply chain relational capital, when Sobel tested for mediation the Sobel Test Statistic came back at 3.585, which is $>$ 1.96 and yielded a two tail probability value of 0.0003 which is $<$ 0.05 demonstrating a 95% level of confidence. This demonstrates that supply chain relational capital does mediate the relationship between supply chain integration and firm performance. Under the Smart PLS 2.0 test, the unmediated direct effect is 0.878 and when mediated is reduced to 0.420 and when bootstrapped the T-Statistic is 31.568 when unmediated and 3.107 when mediated, which demonstrates partial mediation. This is determined by the fact that when the variable is mediated and when not mediated the T-Statistic is still $>$ an absolute value of 1.96.

Analysis of Hypotheses

The results answered the research questions resulting in the null hypotheses being rejected. The implications of this research are substantial as social capital has been identified as an important factor throughout the retail supply chain and within customer loyalty of the brick-and-mortar retail firm consumer base. Social capital has been identified as a significant element from the beginning of the supply chain to the consumer, retail firms should respond by creating logistics policies, within their stores, which are inclusive of behaviors that support social capital. As brick-and-mortar retail continues to adapt to meet the substantial changes in the consumer base and compete with e-commerce retail, elements such as social capital, are becoming more and more important.

One can conclude from the findings of this study that the three constructs of social capital (relational capital, cognitive capital and structural capital) have a mediating effect on the relationship between SCI and firm performance, and a significant relationship to customer loyalty. The results of the study also indicate that structural capital and cognitive capital have a significant direct effect on firm performance. This demonstrates that social capital has a significant direct and mediating effect on firm performance.

SUMMARY

This study examined social capital and how it relates to supply chain processes and customer loyalty in retail firms. Previous studies have examined social capital in the supply chain of manufacturing firms (Yim and Leem, 2013) and social capital in the customer loyalty of service firms (Jones and Taylor, 2012). Both studies found significant results. However, these studies were not focused on retail firms or retail firm logistics. This study recruited participants from a population of retail firm consumers and retail supply chain managers in the

Northeastern United States (CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VT). The results of this study provided insight into a global problem effecting retail by focusing on firms within a small section of the United States.

The business problem addressed in this study is that retail stores face potential firm performance issues and monetary loss due to a lack of relationships with their customer base (Wagner, 2015) and superficial treatment of processes within omnichannel retail logistics processes (Jeszka, 2014). This problem results in large monetary losses to retail firms on an annual basis (Blanchard, 2012; Penske, 2014). Through two questionnaires, and the subsequent PLS path modeling in Smart PLS 2.0 and Sobel test for mediation, this study validates how social capital attributes to the performance of retail firm supply chains while also demonstrating its importance to customer loyalty.

In validating social capital's role in the retail firm supply chain and retail firm locations, the study examined the three constructs that make up social capital (structural capital, cognitive capital and relational capital). The results demonstrate a significant, positive relationship between these three constructs and customer loyalty. The results also demonstrate a significant positive relationship between structural capital and firm performance and cognitive capital and firm performance in retail firm supply chains. Additionally, the results indicate that social capital mediates the relationship between SCI and firm performance in retail firm supply chains.

This study's contribution is presented as a potential solution to help offset the losses being incurred by brick-and-mortar retail firms, by identifying social capital as a significant factor from the retail firm supply chain all the way to customer loyalty within retail firm locations. On a practitioner level, understanding social capital's role in the retail industry helps to understand its importance in the development of retail staffing/development and factors that promote the customer relationship as a factor in the financial losses currently being experienced in brick-and-mortar retail. Further research is needed to examine if social capital is a mediating factor between customer loyalty and retail firm performance. Further investigation could focus on a comparative study of different areas. Understanding this relationship could further strengthen the results of this study as well as the necessity for social capital within retail firm strategy. The results of this study indicate that social capital is a key factor in the success of retail firm operational/logistics processes as well as the existence of customer loyalty within retail firms stores.

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