

The Influencing Factors of Relationship-specific Investment: A Literature Review

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Abstract: With the increasing cooperation between enterprises and the popularization of supply chain management ideas, how to improve the quality of cooperative relationships and achieve good cooperative performance is becoming the goal of more and more enterprises. Relationship-specific investment is an effective means to achieve this goal, which helps to reduce the total supply chain costs, reduce investment decision errors, and promote good cooperative relationships among supply chain members. However, its attributes can also inevitably make some partners behave opportunistically and affect the future revenue of the enterprise. Therefore, it is necessary to study relationship-specific investment and its influencing factors in depth. This paper can provide a reasonable reference for firms to make more effective relationship-specific investments in their future business decisions.

Keywords: Relationship-specific Investment; Supply chain management; Supplier-customer relationship

1. Introduction

Relationship-specific investment (RSI) refers to highly specialized and enduring investments made by cooperative members to strengthen the cooperative relationship between them. Pelton et al. (2002) classified relationship-specific investments into two categories, tangible relationship-specific investments and intangible relationship-specific investments, according to the attributes of assets invested by the cooperative parties [1]. Tangible relationship-specific investments mainly include investments in land, machinery and equipment, and other physical assets made by both partners. Intangible relationship-specific investments include investments in human capital, technology and other intangible assets made by both parties.

In the increasingly competitive market environment, relationship-specific investment has become an important factor for firms to improve their competitiveness. However, due to the dedicated nature of RSI, it may also bring high sunk costs, increase the dependence of partners, make the cooperation unequal, and easily generate opportunistic behavior and economic losses. Studying RSI and its influencing factors can help to understand the cooperation mechanism between suppliers, intermediaries and customers, and guide both parties to make more effective investments to improve the quality of the relationship and optimize the whole supply chain operation.

Prior studies have found that information disclosure, governance mechanism, geographic distance and institutional environment may significantly influence RSI.

In this paper, I aim to review the existing research on the influencing factors of RSI. I hope this review article may provide some implications to corporate managers for both supplier firms and customer firms, consumers, investors, and so on.

The following paper structures as follows: Section 2 reviews the relationship between information disclosure and RSI. Section 3 explains the impact of governance mechanisms on RSI. Section 4 reviews the relationship between geographic distance and RSI. Section 5 illustrates the impact of institutional environment on RSI. And section 6 concludes.

2. Information disclosure

Information disclosure is one of the most critical factors affecting RSI. The other three influencing factors summarized later also essentially promote relationship-specific investment by addressing the

information asymmetry between suppliers and customers. This section focuses on how the disclosure of financial information affects RSI.

Suppliers or customers typically make relationship-specific investments when they deal with a firm in the marketplace. Because such investments have firm-specific design features, their value to investors is determined by the cooperative relationship's future prospects. As a result, perceptions of a company's financial situation can either motivate or discourage suppliers and customers from making relationship-specific investments. A company's suppliers and customers use accounting performance to assess a company's future ability to meet long-term contractual obligations and the risk of making RSI in it [2]. Several studies have shown that the quality of internal control over financial reporting (ICOFR) affects the quality of accounting information, which in turn affects suppliers' and customers' perceptions of the potential benefits of making relationship-specific investments.

A study by Shucmiao Lai (2019) examined how the quality of ICOFR influences a firm's suppliers and customers to make relationship-specific investments [3]. The purpose of internal control is to ensure the reliability of accounting information. A decrease in the quality of ICOFR is associated with a decrease in expected future cash flows and an increase in the uncertainty of the firm's information. On the one hand, ineffective internal controls are linked to lower business performance. Poor business performance can reduce its suppliers' or customers' expected future cash flows, and it can also have an impact on the company's investment decisions, particularly its decision to invest in order to maintain its reputation for treating its suppliers honestly, providing high-quality products to its customers, and having overall integrity. Damaging a company's reputation and ultimately leading to a reduction in relationship-specific investments. These findings imply that when a company's business performance is poor, its suppliers or customers are less likely to make relationship-specific investments. On the other hand, other studies have shown that investors perceive internal control weaknesses as information uncertainty. Therefore, because suppliers and customers perceive companies that disclose material weaknesses (MW) as having high information uncertainty, they are less willing to make relationship-specific investments. Changes in relationship-specific investments by suppliers and customers are negatively associated with the disclosure of material weaknesses in ICOFR.

Feng et al. (2015) propose a further inference that inventory-related MW in the ICOFR is more strongly negatively related to changes in a firm's supplier/customer relationship-specific investments [4]. They contend that inventory-related MW is a problem in a company's inventory management, resulting in a mismatch between inventory supply and demand, lowering operational performance. Their findings suggest that inventory-related MW has a direct impact on suppliers' (customers') input demand (output supply), which affects suppliers' (customers') relationship-specific investments in the firm. When a company has inventory-related MW in its ICOFR, it is more likely to have lower inventory turnover, which reduces future demand for products supplied by its suppliers, resulting in a reduction in the supplier's relationship-specific investment in the company. For customers, inventory-related MW may lead to inventory shortages, delaying the customer's purchase time and gradually reducing the customer's relationship-specific investment in the company.

In addition, researchers have found that the bargaining power of suppliers and customers affects firms' accounting disclosures and thus RSI. for example, Hui et al. (2012) find that strong suppliers/customers increase the accounting conservatism in firms' disclosures [2]. This is because strong suppliers and customers care a lot about the firm's accounting performance, which affects their perceptions of future expected revenues and the risks associated with business relationships. As a result, suppliers or customers with greater market power will think about whether to include deal terms and whether to make additional relationship-specific investments. So when suppliers/customers have greater bargaining power, the negative correlation between the MW disclosed in the ICOFR by firm and the change in the relationship-specific investment by the supplier or customer is more pronounced.

3. Governance mechanism

3.1 Relational governance

In terms of the relational governance of a firm, vertical relationships increase RSI. Richard Sansing (1999) finds that group members under vertically integrated control invest more in relationship-specific assets than independent firms [5]. This is because it is very difficult for both upstream and downstream firms to write a contract that specifies all possible future contingencies, which can lead to a hold-up problem and thus lower RSI, while causing independent firms to exhibit lower efficiency in their relationship-specific investments. In contrast, the hold-up problem does not exist in vertically integrated groups because the parent company is the residual claimant of its own and its subsidiaries' assets. For example, Joskow (1985) finds that when an electric utility is located immediately adjacent to a coal mine, the ownership of the coal mine generally belongs to a subsidiary of the electric utility and the owner of the coal mine has a vertical management relationship with the parent company [6]. In this case, the parent company is willing to make a relationship-specific investment next to the coal mine only if the subsidiary owns the coal mine, ensuring that the electric utility gets the benefit of transporting the coal at a lower cost.

Another typical example of vertical relationships is the keiretsu model within Japanese conglomerates. According to a study conducted by Barbara J. Spencer and Larry D. Qiu (2001), Japanese automakers such as Toyota and Nissan have long-term relationships with their keiretsu suppliers or subcontractors [7]. Subcontractors make relationship-specific investments tailored to the needs of the automakers in exchange for their long-term commitment to the automakers. This type of investment includes the costs of design modifications that improve fit and profitability with other components manufactured by the company but not with the production processes of other automakers. Such investments also involve supplier investments in just-in-time delivery, such as building a plant near the automaker's facility or working with other suppliers to coordinate deliveries. This leaves companies outside the vertical relationship facing invisible barriers when trying to enter the market. Japanese automakers, for example, have reduced their use of imported parts, making it more difficult for U.S. suppliers to enter the Japanese market, or even to potentially not import parts as a result. It even made the U.S. trade with Japan continue to run large deficits, reaching \$55.7 billion in 1997, leading to serious tensions in economic relations between the two countries. This is a good indication of how much the vertical relationship affects the RSI.

3.2 Board Composition

The composition of the board likewise affects RSI. Kristina Minnick and Kartik Raman (2017) note that when suppliers or customers make significant relationship-specific investments, companies consider including them in their boards [8]. In turn, director interlocks between a company and its stakeholders lead suppliers and customers to further increase their relationship-specific investments in that company.

They use R&D intensity and advertising intensity to measure RSI. For the firm's customers, when the firm has stronger market power, customers invest significantly more in R&D in order to maintain their relationship with the firm, making them more likely to be included in the firm's board of directors. For suppliers, there is also a significant positive relationship between their likelihood of being placed on the board of directors of the firm and their R&D intensity. Kristina Minnick et al. found that when the R&D intensity of suppliers increased from twenty-five percent to seventy-five percent, the probability of suppliers being placed on the board of directors of the firm increased from 2.8 percent to 5.95 percent [8].

After supply chain partners are placed on a company's board of directors, they benefit from directorships that increase their relationship-specific investment in that company. This is because while serving on a company's board of directors, customers and suppliers can reduce the information asymmetry between them by gaining access to information about the company's future strategy and

outlook to a certain extent, allowing the partners to plan more rationally for relationship-specific investments and also allowing RSI to be more effective in reducing sunk costs.

In addition to access to information within the firm, another indication that supply chain partners can benefit from holding board positions is to strengthen their level of trust with the firm and their informal (relational) contract with the firm. Baker et al. (2002) found that because the outcomes of relationship contracts between firms are difficult to determine *ex ante*, the utility of relationship contracts is only more clear if they are observed and continuously revised after the parties to the contract have cooperated [9]. Board positions can enhance trust and relationships between suppliers and customers and the firm, resulting in effective relationship contracts, reducing the risk of asset forfeiture and seizure due to opportunistic behavior of the firm, and making suppliers and customers more willing to invest in assets with which they have a close relationship.

4. Geographic distance

The geographical proximity of suppliers to customers is also a non-negligible factor that affects relationship-specific investment. There are two different views on this factor in published papers.

Some researchers believe that RSI is inversely related to geographic proximity. They contend that RSI may be hampered by the hold-up issue [10-12]. Because contracts between suppliers and customers are typically incomplete, where the supplier makes a relationship-specific investment during trade, it is simple to induce opportunistic behavior in the customer once this investment is sunk. Due to geographic differences, the information environment between the two parties differs significantly resulting in a distant business relationship in which the supplier may be reluctant to engage in RSI, with less predictable expected benefits. This performance is more pronounced when suppliers have weaker bargaining power or face the risk of partnership breakup.

More scholars argue that distant suppliers are instead more willing to participate in RSI and view RSI as a commitment device [13]. Because geographical proximity is positively related to information acquisition costs (Giroud, 2013), it is difficult for customers to provide timely transactional information to suppliers or to monitor supplier behavior [14]. Kershen Huang et al. (2021) analyze the switching costs of customers switching suppliers and confirm this inference [15]. They used the supplier's industry size, the supplier's market competitiveness, and the supplier's product similarity to measure the customer's replacement cost to the supplier and found that in a long-distance relationship, customers tend to have more similar suppliers to choose from and the goods of a single supplier are not highly unique. The customer faces lower switching costs in this case, putting the supplier at greater risk of being replaced by its primary customer. As a result, suppliers may work harder to maintain business relationships in order to avoid losing partners, as they deeply understand the importance of their key partner customers. They can do so by demonstrating to their customers the importance they attach to the quality of the relationship and their willingness to engage in long-term cooperation (e.g., by offering the latest products and better additional services). In this case, contrary to the findings discussed above, a supplier who is far from its main customer may be willing to invest more in RSI to demonstrate that they value the transactional relationship and as a commitment to the customer.

Chu et al. (2019), however, find through their investigation that geographic proximity has a positive driving effect on firm innovation, and that investments in innovation are intangible relationship-specific investments [16]. Their findings may seem contradictory to the above, but actually offer a more rigorous explanation of the relationship between geographic distance and RSI. Chu et al. use the number of patents and citations to measure innovation outcomes, focusing on the investment in innovation that achieves benefits, and not reflecting the portion of investment that does not yield outputs [16]. When geographic proximity is greater, the ability to innovate is greatly enhanced and more results are achieved due to greater information sharing and the ability of suppliers and customers to create clustering effects and even share certain technologies and equipment. Thus the relationship between geographic proximity and RSI can be more rigorously corrected as

geographic proximity does increase the supplier's RSI, but these investments are inefficient and a large portion of them do not translate into output, but the supplier has to do so as a commitment to maintain customer relationships.

5. Institutional environment

Williamson (2000) states that transaction costs and the economic institutional environment are closely related [17]. In order to reduce transaction costs, firms or organizations that are more competitive in the market tend to adopt specific transaction and governance models that match the transaction costs. Thus, firm-customer contracts are always concluded in a certain institutional context, and different institutional environments have an impact on firms' investment decisions, as well as on the form of contract adopted for specific transactions, and thus on RSI.

The degree of market development is a direct reflection of the intensity of the actors in the market, which in turn affects the costs of business activities such as finding suppliers, determining purchase prices and determining product quality. Firstly, the slower the marketization process, the more lagging the development of factor markets compared to faster marketized regions, increasing the cost of access to factors of production such as capital, labor and trading partners, and hence the higher transaction costs of relying on external markets. Secondly, in China's domestic market, for example, because market segmentation is an important feature of China's market economy reform process, local trade protectionism prevails in regions with slower marketization, thus limiting the free flow of products and other factors between different regions, resulting in firms having to take the region as the first consideration when choosing to select suppliers or customers [18]. Under such circumstances, it is a natural choice for firms to reduce transaction costs by using the relatively narrow private trust system of their network of contacts [19]. As a result, firms make higher levels of relationship-specific investments in regions where marketization is slower.

Since a poor legal environment tends to coincide with a low marketization process, local governments in slow-marketing regions may intervene more in the economy and the judiciary, and there is less trust in the formal legal system in transactions, forcing firms to limit their transactions to a small number of more connected customers and to invest more intensively in these customers. Woodruff (1999) find that in countries with poor legal protection, firms are more likely to contract with firms that have already done business rather than risk doing business with unfamiliar firms [20]. It can therefore be concluded that in regions with slower marketization and poorer legal environments, firms are more willing to make relationship-specific investments in suppliers to reduce transaction costs and that the institutional environment is an important influence on RSI.

6. Conclusions

In this paper, we review the research on relationship-specific investment over the past decades and summarize the four most important influencing factors. Disclosure of material weaknesses (MW) in the ICOFR is negatively related with changes in supplier and customer relationship-specific investment; vertical relationships between companies promote relationship-specific investment; RSI increases when customers or suppliers join the board of directors of a company; geographical proximity of suppliers and customers is negatively associated with RSI; and the relationship-specific investment increases when the market is slower and the legal environment is more restrictive. proximity is negatively related to RSI; in regions with slower marketization and poorer legal environment, firms will increase relationship-specific investment in suppliers. These influencing factors will be of particular interest to companies when making business decisions. However, there are still many shortcomings in the research on RSI influencing factors. First, scholars mostly base their research on transaction cost theory and social transaction theory, which is relatively single in terms of the choice of theoretical basis. Second, many articles only focus on the RSI of suppliers or customers, but ignore the correlation between the RSI of both. Third, there is a lack of unified

quantitative standards for RSI measurement indicators. These shortcomings provide a new direction for future research. RSI can be studied from a broader dimension and expand the theoretical basis, such as resource dependence, social network, game theory and enterprise core competitiveness theory. The complexity and importance of RSI make it a worthy area of in-depth research in the future.

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