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Current Measures of Supplier Relationship Management Performance: Implications of Organisation Theories

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Abstract

This conceptual review examines measures of supplier relationship performance through two main lenses: first, by exploring the current measures of supplier performance, and second, by assessing the impact of supply chain management (SCM) theories and total quality management (TQM) practices on this performance. The review suggests that strategic supplier relationship management (SRM) plays a crucial role in SCM by incorporating key elements such as supplier integration, information sharing, communication, and collaborative partnerships, all of which influence supplier performance quality. From a practical standpoint, the review stresses the importance of stakeholders in the SCM value chain fostering closer relationships with strategic suppliers. This approach encourages long-term, cooperative partnerships rather than purely transactional, arm's-length arrangements, which can enhance the capabilities and performance of suppliers. In its conclusion, the review highlights that supplier relationship performance is measured across three phases: supplier selection, development, and termination. Each phase carries distinct implications for relational performance. While many SCM theories complement each other, some older theories have diminished in relevance, while TQM theories hold significant potential to enrich SCM practices and theory. However, the review notes that TQM principles are underutilized in contemporary SCM literature.

Keywords - Plan-Do-Check-Action cycle, Total Quality Management, Supply Chain Management, Supplier Relationship Management, Resources-based View.

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I. INTRODUCTION

Managing supplier relationship is a fundamental strategy in supply chain management. This is largely because competitive advantage of a firm extends beyond its internal capabilities and resources to its strategic, inter-firm relationship along the supply chain (Gulati, 1999; Moeller, et al., 2006) in a value co-creating continuum. A firm that leverage strong supplier relationship tends to deliver superior quality to its customers both in the upstream and downstream with high financial performance (Al-abdallah, et al., 2014). Relationship between relevant stakeholders enhance co-creation of value and end-user satisfaction (Crosby et al., 1990) because marketplace success is no longer dependent on a single transaction by a SC partner but rather a collective actions of a network of cooperating partners along the entire value chain (Spekman et al., 1998; Moeller et al., 2006). Building a trustworthy relationship helps firms to easily share experiences, information and risk in SC. Despite these benefits, high reluctance among supplier chain partners continue to exist leaving the porous SC activities highly disconnected between firms in the critical value chains (Lambert and Schwieterman, 2012). Although, traditional "arms-length" could be best suitable for some suppliers, others should be treated as trustworthy partners based on collaborative partnership (Moeller, et al.,2006).

The value of strong SC partnership leads to improved customer satisfaction, minimize waste and ensure continuous quality improve. Researchers use plethora of measures to evaluate the supplier relationship performance. These measures range from strategic level activities and processes affecting supplier relational performance such as leadership commitment to SRM strategy, etc (Moeller et al., 2006) and operational sub-process and routines in supplier relationship performance (Kim, et al., 2010; Al-abdallah, et al., 2014). These supplier performance measure recognize relational, transaction and performance dimensions of suppliers. Consequently, the aim of this review is to discuss some of the current SRM measures, and implications of SCM theories and TQM practices in supplier performance.
The literature review first provides an overview of supplier relationship, followed by supplier relationship management measures. The last part of the review of some SCM theories and TQM practices.

II. LITERATURE REVIEW

1. Supplier Relationship Management

Firms pursue supplier relationship management (SRM) to achieve both short-term and long-term objectives. Long-term objectives include improving customer satisfaction, improving the efficiency of production operations, and increased market share, while short terms objectives include improved productivity, cycle time and reduced inventory (Al-abdallah, et al., 2014). Just like customers, suppliers are integral to manufacturer's business and the latter cannot achieve its goals without its committed, strategic suppliers. Managing this relationship is thus as important as the core business. supplier relationship management is therefore defined as "the process of engaging in activities of setting up, developing, stabilizing and dissolving relationships with in-suppliers as well as the observation of out-suppliers to create and enhance value within relationships." (Moeller et al., (2006).

At the strategic level, the goal of the firms must be to identify, select, and develop suppliers that are key to the company's success now and in the future in its value-creating efforts (Lambert and Schwieterman, 2012; Moeller et al., 2006). The right supplier is often more responsive to JIT delivery, improving performance quality (Al-abdallah et al., 2014) while minimizing cost and wastage in the supply chain (Grimm et al., 2014). Mutual commitment of supply chain partners further enhances trust and long-term collaboration and shared success. Strong supplier relationship allows managers collaborate with key suppliers by providing a more customized product and service agreements (PSAs). Lambert and Schwieterman (2012) found that joint development of PSAs with enables both partners address major performance drivers based on the level of trust and increase potentials for future business.

Trust remains the key predictor of supplier relational performance. Leuthesser and Kohli (1990) provide critical decisions of relational contract with suppliers as follows; (1) the type of information a supplier obtains from and provides to a buyer, (2) the frequency of interaction and the richness of the medium of that interaction, and (3) lateral and vertical involvement, i.e., the extent to which multiple functional areas and hierarchical levels within a supplier are involved in interactions with a buyer. Intensity in interaction allows for a coordination of specified workflow and information exchange in a manner that permits JIT delivery (Green et al., 2014), leading to seamless knowledge sharing and joint planning (Spekman, et al., 1998) and a strong supplier integration is a key predictor of supplier performance (Lambert and Schwieterman, 2012). Frequency and intensity of relationship offer partners mutual disclosure and intensive follow-up contacts (Crosby, et al., 1990) leading to stronger supplier relationship ties and performance. Therefore, supplier selection, managing supplier relationship and performance evaluation are fundamental sources of SRM quality. The following section discusses some of the common measures of SRM performance.

2. Supplier Relationship Management and Performance Measures

Despite the complexity of relationship and the level of analysis involving individuals at interpersonal levels, between

departments (at inter-departmental level) and between organizations (inter-organizational level), plethora of constructs have been used to measure the impact of strategic supplier relationship performance (e.g. Sodhi and Son, 2009; Forkmann et al., 2016; Prajogo et al., 2012; Oghazi et al., 2016; Giannakis, 2007, etc.). Supplier performance depends on several measures relating to firm's supplier relationship management capability, environmental performance resulting from supply chain partnership (Forkmann et al., 2016), investment in relational infrastructure (Youn et al., 2013), etc. It is evident that firm's performance quality extends beyond its boundaries to the rest of its supply chain partners. Commitment to supplier performance of all these stakeholders in the value chain has made supplier relational performance even more challenging to "manage" and "measure" from supplier relationship strategy to operational sub-processes (Prajogo et al., 2012).

At the strategic management level, SRM measures concerns a firms strategic orientation towards relations-based management style (Han et al., 2018), inter-organizational compatibility and leadership commitment (Youn et al., 2013; Giannakis, 2007; Forkmann et al., 2016) investment in relations-specific resources (Sodhi and Son, 2009), integration of SRM into strategic policies and operational programme (Akamp and Müller, 2013) and conflict resolutions (Grimm et al., 2014). Degree of leadership commitment symbolizes the firm's readiness to promote strong ties in the supply chains based on corporate trust (Grimm et al., 2014). This new form of inter-firm relationship in the supply chain requires firms to integrate internal and external processes and activities with key partners in the supplier network. This new organizational structure is accelerated by changing technological, demographic and economic factors confronting supplier relationship network (Akamp and Müller, 2013). These investments can be in the form of specialized equipment, knowledge sharing routines, and training of personnel on how to operate this equipment. Further, Sodhi and Son (2009) found that such investments have strong positive impact on supplier performance and (Sodhi and Son, 2009), and could foster effective leadership commitment. At the operational level, SRM processes are embedded in the relationship routines, mutual interdependence and coordination of activities. Supply chain processes measures effectiveness of supplier capability assessment, and selection (Prajogo et al., 2012; Forkmann et al., 2016), attracting, developing and ending of supplier relationships (Forkmann et al., 2016), management team preparation, identification of the opportunities with suppliers, and measuring and reporting of supply performance quality (Oghazi et al., 2016). Suppliers with great potential to add value to current and future needs of the company must be selected, develop, and integrate all relevant supply touch-points to achieve shared goals and minimize risks.

Environmental and social concerns among several stakeholders and special interest groups is critical to firms in their supplier selection performance (Akamp and Müller, 2013). Firms with similar environmental orientations and social concerns over human safety, community welfare arising from supply chain process are most likely to cooperate in effective value networks (Klassen and Vereecke, 2012). This form of partnership allows manufacturer and suppliers jointly involve in environmental knowledge awareness and risk control through rapid recovery and real-time information especially during environmental disruptions (Youn et al., 2013). Environmental SC partnership measures relate to the extent of corporate responsibility practices that are vital to firm's environmental awareness, monitoring and performance (Klassen and Vereecke, 2012; Gallear et al., 2012; Youn et al., 2013). Supply chain partners must be involved in effective flow of relevant information and knowledge in order to reduce information asymmetry about national and or culture differences affecting supplier performance (Sodhi and Son, 2009). In addition, the study of environmental supply chain partnership of Korean firms, Youn et al., (2013) note that while strategic information sharing is critical for planning purposes in strategic supply chain partnerships, the operational information sharing has more impact on supplier performance outcomes. However, a strong relational bond between partners must exist for effective information sharing, especially when sensitive environmental or innovation-based knowledge is transferred (Sodhi and Son, 2009; Youn et al., 2013).

Prajogo et al., (2012) study of manufacturing firms observed the effect of supplier management practices on firm operational performance. Results of the study show that supplier relationship practices such as strategic long-term relationship, supplier assessment and logistical integration are found to have a strong effect on operational performance measures such as quality, flexibility, and cost reduction (Prajogo et al., 2012). Therefore, Oghazi et al., (2016) found barriers to effective supplier integration between the manufacturer and its first upstream tier suppliers include the lack of goal congruence, management commitment, and mutual trust. Also, supplier capability to high delivery performance and low cost lies in its relational capability to exploit external resources and synergies in value chain (Forkmann, 2016). In the study of SRM dynamic capability, Forkmann (2016) uses three forms of supplier relationship capabilities measures, namely, initiation capability, development capability, and ending capability. Not all relationships are worth keeping or developing, hence "arm's length" relationship could be an alternative relational strategy. Akamp and Müller (2013) also found a that the supplier selection capability, monitoring, development, and integration contribute to not only continuous supplier performance but also end-user customer satisfaction. Although scholars continue to embrace supplier integration in in terms of

knowledge sharing, and supplies logistics, measures relating co-management mechanism is required to foster mutual interest and avoid partners' opportunistic behaviour (Tabaklar et al., 2015; Zu and Kaynak, 2012). Such relational contracts may be "tacit and explicit rules" (Sodhi and Son, 2009) in the monitoring and coordination of important factors of "best value" chains performance (Ketchen and Hult; 2007). Because joint resources and capabilities can be appealing, if these relationships are not managed properly, the actions of one stakeholder may increase the risk profile of the other SC partner such as reputational risk (Christopher and Gaudenzi, 2009).

3. SCM Theories

Global diversity has challenged the traditional leaner supply chain towards a more global supply network of different players. For this reason, we are seeing new forms of organizational structure to deal with complexities in supply network (Manzouri and Rahman, 2012). Because SCM suffers from "conceptual slack" the adoption of complementary theories have become important to the evaluation and coordination of SCM process and performance (Halldórsson et al., 2015), namely, resource-based theory, transaction cost economics, organizational learning theory, social capital theory (Hitt, 2011; Halldórsson et al., 2015; Touboulic and Walker, 2015; Grover and Malhotra, 2003; Barratt and Oke, 2007), network theory (Carter et al., 2007; Ketchen and Hult, 2007; Halldorsson et al., 2007), principal-agency theory (Tabaklar et al., 2015; Zu and Kaynak, 2012; Halldórsson, Hsuan and Kotzab, 2015) social theory (Hitt, 2011), etc. are on the increase in SCM literature.

This study categorizes these theories into three areas: internal, inter-organizational and relational categories. Resource-based theory, knowledge management theory, institutional theory and dynamic capabilities theory can be both internal and external to SC perspective that concern with processes in resource orchestration (Hitt, 2011), new product development (Halldorsson et al., 2007), fulfilling customer orders, inventory adjustment, minimizing cost (Manzouri and Rahman 2013). SCM scholars leverage these theories examples, third-party logistics, collaborative planning, and forecasting (transaction cost theory, chaos theory and social theory) by Stapleton et al., (2006), decisions of multiple agents affecting incentive pay-off in supply value chain (game theory and principal agency theory) by Cachon and Netessine (2015), sharing best practices, knowledge and information between partners in supply network (network theory and knowledge management theory) (Ketchen and Hult, 2007). Organizations that integrate their supply chains along the innovation-based partnership have leveraged the organizational learning theory (Hitt, 2011). The application of this learning theory in supply chains allows for knowledge exploration and exploitation between partners allowing for the creation and sharing of knowledge for innovation purpose (Gulati, 1999; Hitt, 2011).

Lack of valuable, rare, inimitable, and non-substitutable (VRIN) internal resources limits firms ability to be reliable, and dependable in terms of customer expectations and volatility in markets (Barney, 1991). The implication for SC is that firms must procure relevant physical resources and develop employees' capabilities through effective recruitment and training on modern SCM tools and techniques. Also, because competitive advantage of a firm lies beyond its idiosyncratic assets and capabilities, potential external SC partners with good track record and prospects for high dependability and performance should be recruited in the supply network. In best value chains, partners share unique capabilities, experiences and information relevant to product innovation, delivery performance, and customer satisfaction (Ketchen and Hult; 2007).

Most SCM activities are natural fits to "make" or "buy" decisions, so transaction cost theory helps us understand the nature and costs of these transactions (Williamson, 1975). The three measures of TCE are; asset specificity, uncertainty, and governance mechanisms or structures (Williamson, 1975). If firms choose to procure materials from suppliers, there is a risk of "opportunistic behaviour" by one firm against the other (Grover and Manoj K Malhotra, 2003) because one firm may choose to cut quality of products in order to maximize its margins at the expense of the other partner (Ketchen and Hult, 2007). To curb this, formal contracts are used to persuade SC partners to deliver on the promise while mitigating risk of free-riding, minimizing the potentials of leakages in new knowledge and risk performance failure (Hitt, 2011; Ketchen and Hult, 2007). Although transaction cost of business, tend to supersede most market-based relationship, best value chains are not built on formal contracts alone, but a strong mutual trust-based relationship that opens-up new prospects for both (Ketchen and Hult, 2007). Implication for SCM is that cost of transaction and control mechanism between buyer and seller must be aligned with the potential SCM partners accordingly, (Hitt, 2011) that foster long-term relationship rather than short-termism (Ketchen and Hult, 2007).

Inter-organizational aspect relates to the synergistic efforts of SC partners to manage processes, solve problems and improve performance quality in supply network. Manufacturer must cooperate with on their suppliers because competitive advantage extends beyond its internal idiosyncratic resources and capabilities hence the synergistic performance of the rest of its upstream and downstream suppliers is required in the best value chain network (Hitt, 2011; Ketchen and Hult, 2007). Successful inter-firm collaboration is built on mutual trust between parties resulting to lowering cost and "contractual safeguards" (Halldórsson, Hsuan and Kotzab, 2015). In SCM development of modular components between

partners is a good example of interfirm collaboration where one is involved in architectural design and the other party performs configuration of parts for the final market. In such cases, success or failure depends on a cooperating membership of network partners and "safeguards" (Halldórsson, et al., 2015). Strong tries are also associated with high dependability and relaibility in delivery perofmance (Christopher and Gaudenzi, 2009). In line with network theory, relational theories emphasize reward system to build "win-win" cooperating and trustworthy relationship. This allows partners to achieve JIT delivery, TQM, and lean goals (Halldorsson, 2007). Bu building trustworthy relationship among supply chain partners, flow of information and tacit knowledge for innovation purpose, risk and rewards possible (Manzouri and Rahman 2013). These theories, therefore provide SC managers understanding of some the underlining issues confronting SCM.

4. TQM practices and SCM

The eight traditional TQM practices have remained highly predominant measures of TQM practices in organization namely, quality department, top management and quality policy, product/service design, employee training and education, quality data and reporting, continuous improvement and innovation, customer focus and supplier quality management (Gitlow, 1994; Forker et al., 1997; Talib et al., 2011). Further, Japanese TQM approach does not only include the firm's corporate-wide quality culture, but also the wider stakeholders through respect for humanity and use of participatory management (Gitlow, 1994). In the empirical study of electronic components, Forker et al., (1997) found that to some extent, all companies utilized these TQM practices to improve quality delivery performance, and the quality department was found to be the highest predictor of quality assurance (Forker et al., 1997). Just like a house with a strong foundation, Talib et al. (2011) describe three TQM practices that are considered as "the foundation of quality performance" in SCM namely, top-management commitment; customer focus; and supplier relationship management. It is imperative that firms have clear TQM practices that capture all relevant value-creating touch-points ranging from top management to employees, suppliers and other stakeholders in order to achieve its SCM goals.

Deming's "plan-do-check-action" (PDCA) cycle is a planning tool that has been in use for quality improvement and controls programs (Gitlow, 1994). Pan et al., (2015) have used this technique in the implementation of waste-to-energy supply chain – and in light of new information, adjustments are easily made with PDCA cycle. Because of its high flexibility, it is a quality tool used to plan and evaluate any change in performance against actual targets in a form of continuous cycle (Gitlow, 1994). Despite its simplicity of use, there is still a very little use in SCM research. As part of the daily quality improvement programs, PDCA cycle could help SC partners to jointly plan and execute SC activities and processing (Gitlow, 1994). Through PDCA, joint planning offers partners to share "best practices" in their continuous improvement programs. However, key challenges in the use of this PDCA is the lack of commitment from relevant stakeholders towards participatory daily management of quality improvements (Gitlow, 1994). To incentivise stakeholders towards quality improvement, Japanese TQC leverage Deming's awards. This prize increases organizations commitment to quality assurance and customer satisfaction through daily quality audit and quality control diagnosis process (Gitlow, 1994), thus PDCA is an ideal tool for daily improvements in supply performance quality.

Product defects can cause severe threat to customers and corporate reputation. Towards a more sustainable manufacturing, industry 4.0 allows for relevant and timely information flow between partners upstream and downstream in supply value-chain. Industry 4.0 has become a sophisticated mechanic for detecting 'zero product defect' throughout manufacturing (Ferreira et al., 2018). SC practitioners must develop an institutional culture around the zero defect philosophy in the form of "local solutions focused on each single production stages that are sequential in value creation creating continuum (Eger et al., 2018). Zero defect has potentials to supply chain partners in terms of lower costs of product defect, consumption of energy, improved lead times and deliveries performance, production system resilience, overall flexibility and reliability (Lindström et al., 2019). Again supplier-buyer integration is the hallmark of zero product defect through process flows, information services and manufacturing where various strategies are adopted such as "close cycle strategies such as advance data mining, acquisition, assessments, optimization and control" (Ferreira et al., 2018). Moreover, the study of zero defects manufacturing, Lindström et al. (2019) claim that this approach must combine and integrate all the relevant value-creating activities in a seamless fashion such as collaborative manufacturing system, continuous quality control improvement, [re]configuration of scheduling of manufacturing, and data analytics are in sync. Although a highly integrated concept, zero defect diagnostics could help manufacturers have access to real-time data on supplier performance and promote continued quality improvement.

Several researches confirmed that all elements of just-in-time (JIT) are embedded in a more comprehensive TQM campaign (Levy, 1997; Vuppalapati, et al., 1995; Zelbst et al., 2010). JIT is an improvement program aimed at eliminating all forms of waste from all organizational processes. JIT delivery shortened lead times to as little as few hours (Vuppalapati, et al., 1995) such that production lead time is greatly shortened by maintaining the conformity to changes and having "all processes produce the necessary parts, at the necessary time, and have on-hand only the minimum stock necessary, to hold

the processes together" (Sugimori et al., 1977). Rapid and accurate communication about the market is required to achieve the goals of JIT (Zelbst et al., 2010). JIT philosophy is based on improving manufacturing efficiencies (minimizing inventory, parts and components standardization, use of quality circles, etc.) (Vuppalapati et al., 1995). These JIT practices, however, require employees to be trained to perform multiple tasks and to be involved in the improvement efforts.
Almost synonymous to the concept of JIT, lean production allows for efficient coordination of all relevant activities in the SC such that JIT delivery is possible, minimizing product defect and efficiency in "design-for-manufacture" (DFM) (Levy, 1997). The frequent flow of goods and information between relevant members of the SC is necessary for lean to take place across markets and national boundaries. As a key concept in in lean, design-for-manufacture (DFM) is built on a close relationship between manufacturer and supplier to guarantee reliability, quality and ease of service in product design (Levy, 1997). However, global sourcing over long distances makes lean production and just-in-time delivery impossible because flow of information and goods over long distances are costly and difficult. Disruptions in any one point due to quality problems, delayed deliveries, and poor sales forecasts can cause long lead times (Levy, 1997) in several areas of the value chain. For firms to deliver on their JIT and lean promises, strong relationship, information flows, and integrated manufacturing system with key SC partners is fundamental. The implication TQM and SCM implication is that either JIT or lean is aimed at efficiency in production, and delivery time while improving performance quality.

III. DISCUSSION

This review found that related literature on SCM theories a focus on identifying SCM implication such as JIT, zero defect, and trustworthy supplier relationships are categorised as fundamental issues in SCM theories. TQM is integral part of SCM goals. Top management and leadership commitment to this strategy is fundamental to firms' competitive advantage. Outside the strategic level, supply chain integration with key suppliers is a necessary condition for firms to deliver services to meet marketplace needs and requirements. Supplier selection is however important to this process to understand priori the right supplier capability to deliver quality performance in value chains. There are two main themes in TQM: management system and tools and techniques. Management system deals with the leadership, planning HR, etc. while technical systems relates to TQM tools and techniques that guide the quality improvement process (Tarí and Sabater, 2004). Despite the wide usage of traditional TQM practices, very limited studies utilized technical systems of quality improvement process, particularly in supply chains. These technical tools include PDCA, cause-and-effect diagram, statistical control charts, etc. that facilitate decision making or analysis of data (Hellsten and Klefsjö, 2000). Manufacturers cannot deliver on their TQM promise unless they recognize suppliers and all its trading partners (third party vendors, institutional clients, etc.) as integral part of the value chain (Lin et al., 2005).

SCM requires series of decisions 'to make or buy' each resource by minimizing cost, product defect or service failure which can lead to significant damage to corporate reputation and loss of business (Huo et al., 2019). To achieve this, firms must build on partnerships rather than a traditional market-based relationship to promote the development of quality management practices (Flynn and Flynn, 2005). Because transaction relationship fuels on a 'trade-off' orientation that creates adversarial relationships between buying and selling firms, SC partners must adopt horizontal perspective on the that recognizes the symbiotic relationship between partners which also promote the adoption of quality management practices (Halldórsson et al., 2015; Grover and Malhotra, 2003; Flynn and Flynn, 2005). A well-managed supplier relationship can be the panacea to service performance failures. Firms must invest in relationship. Deeping relationship provides trust where relevant information can be shared between partners. Because of high level of distrust in the supply chain, SC performance remain to suffer from a rising lack of information sharing, high cost of transaction, product delay, defects, and conflict between parties etc leading to poor customer satisfaction, and competitive disadvantage.
Resourced-based theory of a firm acknowledges employees as critical VRIN resources, hence firms that leverage these resources reap competitive advantage against those that failed to do so Barney (1991). Employees educations, training and participation can stimulate employees' performance quality. Sadikoglu and Zehir (2010) find that motivated and experienced employees may possess historical knowledge of customers and insights into their future needs. Such employees are key sources of new product innovation to satisfy customers. Supply chain quality integration between the focal manufacturer and its upstream suppliers and downstream customers will enhance high customer satisfaction, lower cost of product quality and high flexibility - leading to improved delivery performance in SC.

IV. CONCLUSION

This review highlights the critical role that both Supply Chain Management (SCM) and Total Quality Management (TQM) play in enhancing supplier relationships and overall performance within the value chain. It emphasizes that fundamental organizational theories and implications of SCM practices, such as Just-in-Time (JIT), zero defects, and trustworthy supplier relationships, are foundational concepts that drive competitive advantage. TQM, being an integral component of SCM, requires top management's commitment and a strategic focus on quality improvement across the entire

supply chain. This strategy hinges on the integration of key suppliers and the careful selection of suppliers capable of delivering quality, thus ensuring the alignment of supply chain capabilities with market demands.

The review underscores two primary themes within TQM: management systems (focused on leadership, planning, and human resources) and technical systems (focused on tools and techniques for quality improvement). However, despite the widespread use of traditional TQM practices, the application of technical systems, such as PDCA, cause-and-effect diagrams, and statistical control charts, remains underutilized in the context of supply chains. This represents a gap in the literature, where further exploration of these technical tools could enhance decision-making and improve data analysis in SCM settings.

Additionally, the review emphasizes the importance of viewing suppliers and trading partners as integral components of the value chain. Without recognition of their role, manufacturers cannot fully realize the benefits of TQM. As firms increasingly adopt partnership models rather than transactional relationships, the development of quality management practices becomes more pronounced. This collaborative approach fosters mutual trust, enabling the sharing of relevant information and reducing inefficiencies such as high transaction costs, delays, product defects, and conflicts.

The resource-based theory further strengthens the argument that leveraging human resources—through employee training, motivation, and participation—can significantly contribute to improved performance and innovation. Employees, possessing historical knowledge and insights into customer needs, become a key source of competitive advantage. Finally, the integration of supply chain quality management across all stages—upstream suppliers and downstream customers—results in high customer satisfaction, reduced product quality costs, and improved flexibility, ultimately enhancing overall supply chain performance.

In conclusion, this review stresses the need for firms to adopt a holistic and integrated approach to SCM and TQM, recognizing the symbiotic relationships within the supply chain, investing in supplier relationships, and utilizing both management and technical systems for quality improvement. Only through this collaborative, strategic approach can companies achieve sustained competitive advantage, mitigate supply chain risks, and ensure high performance across the entire value chain.

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