

Current Trends in Service Quality: A Transportation Sector Review

Jeffrey Kennedy
Palm Beach Atlantic University

Studies have emphasized the influence a service employee has on customer perceptions of service quality. Results indicate that employees' positive and negative behaviors are highly correlated to customer overall satisfaction (Kattara, Weheba, & El-said, 2008). Moreover, research indicates that many service firms fail in delivering service quality to their customers; their frontline employees deliver inferior value to the end user, and this attitude and interaction performed during the service encounter influences customer perceptions of the service delivered. Although many studies have examined general quality management practices, industry-specific studies on quality management practices and factors that influence their success in the shipping industry are rather few (Cheng & Choy, 2007). This review hopes to add to the body of knowledge by positing that truck drivers acting as frontline service employees, play a fundamental role in a company's assessment of service quality as these drivers deliver cargo to the end user.

INTRODUCTION

Research indicates consumers often view service employees as the means by which an organization conveys components of service quality (Brady & Cronin, 2001). According to Parasuraman (1988), capable employees who are committed to providing service quality increase customer satisfaction and businesses lose customers because of poor or indifferent service. Firms remain challenged to deliver high quality service to their customers, largely because the thought process that consumers utilize to purchase and evaluate services is complex. Consequently, service quality remains a key area of interest to practitioners, and researchers alike who recognize the impact it has on business performance, customer satisfaction, purchase intentions, and financial outcomes. Although many studies have examined general quality management practices, industry-specific studies on quality management practices and factors that influence their success in the shipping industry are rather few (Cheng & Choy, 2007).

Although its growing importance in corporate strategy and the global economy, the logistics discipline does not have as rich a heritage in theory development and empirical research as older more established disciplines such as anthropology, philosophy, psychology, and sociology (Stock, 1997). In fact, much of logistics literature and research has been considered managerial in nature and lacking a rigorous orientation toward theory development, testing, and application (Mentzer, Bienstock, & Kahn, 1995). Moreover, competition among transportation companies has dramatically increased in recent years. The reasons contributing to additional competition include deregulation of the industry, growing demands among shippers for better levels of service, and the relatively recent trend in the creation of third party logistics carriers. As common carriers increasingly compete in each others' territories, more trucking firms are offering "higher quality service offerings to customers" (Kirkeby, 2008, p. 4).

Supply chain services have continued into the areas of distribution and warehousing. In the past, cargo had been simply shipped to a warehouse, stored for a period of time, and shipped out; today there is a demand for more complex, value-added services. A growing body of literature supports the notion that suppliers gain far more lifetime value from the retention of customers than from the acquisition of new ones. A primary goal of logistics managers, therefore, has been to enhance operational responsiveness to customers. In many cases truck drivers serve as front-line staff for the organization and are frequently the customer's only contact in the service encounter. These drivers impact customer perceptions of the service experience (Kimberley & Hartel, 2008).

NEED FOR RESEARCH

Providing the right level of service delivery to the right customer in the right market segment may serve as a comparative advantage for firms delivering cargo door to door. It is documented that mishandling cattle and livestock in transit forced the National Pork Board in Des Moines, Iowa to launch a quality assurance program. This action was taken because truckers were not handling animals to the satisfaction of the cattle industry. According to David Meisinger, the Pork Board's Trucker Quality Assurance Coordinator, mishandling of live cargo by truck drivers costs the industry approximately \$59 million in lost revenue per year (Vansickle, 2002). This example should lead other industries involved in shipping merchandise to consider the impact of truck driver contact and interaction with vendors in their respective industries.

LITERATURE REVIEW

Much of the logistics literature and research is considered largely anecdotal in nature and lacks a rigorous orientation toward theory development, testing, and application (Mentzer, Bienstock, & Kahn, 1995). Although progress has been made, Bowersox noted that establishing a link between functional logistics performance and overall firm performance in the logistics industry is the equivalent to the medical field's dilemma of finding a cure for cancer. In other words, there is much empirical research to be done (Bowersox, Closs, & Stank, 2000). Research already indicates that the attitude and actions of contact employees can affect customers' perceptions of the service. Other studies have emphasized the influence that a service employee has on customer perceptions of service quality. Other research indicates that employees' positive and negative behaviors are highly correlated to the customers' overall satisfaction (Kattara, Weheba, & El-said, 2008). Moreover, research indicates that many service firms fail to deliver service quality to their customers because their employees deliver inferior value to the end user.

Quality improvement programs in manufacturing have received much attention by researchers, and the results achieved by these companies have been dramatic and well documented (Wisner & Lewis, 1997). Over time, efforts to improve performance and competitiveness have led transportation companies to implement formal quality improvement programs as well. Limited attention has been given to the quality improvement strategies of transportation companies, even though notable successes have been achieved (e.g., Federal Express won the Baldrige Quality Award in 1990). Little empirical research exists describing their quality assessment or improvement programs (Wisner, 1999).

The issue of quality within the transportation industry covers a number of different dimensions. Shippers tend to view quality primarily in terms of the level of service provided and transportation costs. Transportation companies view quality from a much broader perspective, by including the areas of customer service, administration, maintenance, storage, and information. Finally, government tends to view transportation quality from a safety, economic, and consumer welfare perspective (Manuele, 2007).

Several surveys have attempted to measure common practices relating to logistics excellence. Ernst and Whinney (1987) identified activities associated with logistics excellence among financially successful U.S. companies. These activities included linking logistics activities to corporate strategies, using information systems to gain a competitive advantage, forming strategic alliances or partnerships, recognizing people as the firm's most important resource, optimizing customer service levels in different

markets, managing the details through the promotion of quality improvement in all areas, and sustaining excellence through use of performance measurement systems and benchmarking (Coppet, 1988).

A case study of the Southern Pacific Lines' continuing quality improvement practices (Carman, 1990) presented a number of quality related activities. These activities included top management leadership and commitment with respect to quality improvement, an emphasis on labor training in TQM tools, the formation of cross-functional quality improvement teams, the use of key performance indicators, and paying individual performance improvement bonuses. Saylor (1990) presented a theoretical discussion of transportation logistics quality. Saccomano (1996) identified several logistics activities that would be consistent with TQM. These activities included involving all processes in quality improvement efforts; emphasizing partnership arrangements or strategic alliances; using training, maintenance, support equipment, labor, and computer resources to maintain customer relations; continuous improvement of the system; concentrating on failure prevention to reduce costs; and placing the customer first (Hopkins, Strasser, Willie, & Foster, 1993).

A large body of transportation quality research addressed the measurement or determination of customer service elements. Many of these papers used survey or case study data as the basis for their findings. Chow and Poist (1984) surveyed shippers to determine the transportation service-quality factors measured. These factors most often cited were related to rates, claims, transit time, equipment and operations. Hopkins, Strasser, Willie, and Foster (1993), surveyed both shippers and carriers to determine service-quality gaps between two groups. Using 19 service-quality items taken from SERVQUAL, the researchers found that carriers generally knew the level of service-quality expected by shippers, but were not providing it. The authors suggested that future research was needed to identify the causes of these internal failures.

Other researchers offered theoretical discussions of transportation of logistics service-quality for the transportation industry and the elements that should be used to measure it. Rhea and Shrock (1987) presented a framework for measuring physical distribution effectiveness. Rogers, Daugherty, and Stank (1993) took the 10-key service-quality determinants from Parasuraman, Zeithaml, and Berry (1988) and suggested potential logistics-related measures for each determinant. The authors argued that customer perception surveys used by logistics providers should be designed around these factors.

Lieb and Miller (1988) surveyed trucking companies and determined how operations and services differed for JIT and non-JIT customers. The respondents to their survey cited the requirement for more customized services, adherence to strict time schedules, closer long term working relationships, a greater extent and quality of communication, and higher operating costs associated with JIT customers. An exploratory study by Menon, McGinnis, and Ackerman (1998) examined the criteria used for selecting third-party logistics service providers and how the firm's competitiveness and external environment affect these criteria. Insights were gained regarding supplier perceived performance, perceived capabilities, and pricing as they affect the selection of third party logistics service providers. The results also provided guidance to those who specify, buy, and manage logistics services providers.

Using the SERVQUAL instrument, Hopkins, Strasser, Willie, and Foster's (1993) study attempted to analyze service quality within the transportation industry and determine potential areas of improvement within the carrier shipper relationship. Crosby and LeMay (1998) addressed three methods by which trucking managers may discover customer requirements because trucking managers must effectively elicit these quality dimensions and the value customers place on each one. The methods used are SERVQUAL, direct questioning, and policy capturing techniques. The authors note that each method has its strengths and limitations in helping managers in the trucking industry gather information that helps define and satisfy customer requirements. The SERVQUAL instrument permits the use of exploratory factor analysis to discover what service elements are valued by customers. The weakness in this instrument is that it does not force the respondents to choose a single factor.

The direct questioning technique has high face validity, but many customers may answer direct questions with deliberate biases that serve their interests. Policy capturing, a simulation technique, has been used to study multiple criteria decision making in various management areas. Policy capturing requires participants to make decisions about situations defined by specific stimuli or cues. Crosby and

LeMay (1998) concluded that the direct questioning technique serves well and that its use should be continued. The policy capturing technique could be used periodically to confirm direct questioning. The authors conclude that SERVQUAL might serve best when price is not an issue.

Wisner and Lewis (1997) presented the findings of a comprehensive, exploratory survey concerning transportation quality improvement programs. The survey examined the firm's general focus on quality and customers, the use and design of formal quality improvement programs, and the success and current status of these programs. A number of significant quality program differences were found, including differences in top management support, benchmarking practices, customer interaction, and program design elements

Dedeke (2003) proposed a different approach to service quality. Service quality was framed as being dependent on composite results that a service provider and its systems offer a customer. He framed the concept as a fulfillment-oriented construct. He presented empirical support for nine related logistics service quality constructs; demonstrated their unidimensionality, validity, and reliability across four customer segments of a large logistics organization; and provided empirical support for a logistics service quality process. He found that the relative parameter estimates differ for each segment, suggesting that firms ought to customize their logistics services by customer segments.

LOGISTICS AND SERVICE QUALITY AND PERFORMANCE

While Parasuraman, Zeithaml, and Berry's (1988) original research considered the price or cost of service to be part of communication, Stank, Goldsby, and Vickery (1999) included cost as a key aspect of logistics operational performance in their fast food industry research. Cost is conceptualized as a unique, third dimension of logistics service performance, separate and distinct from the operational and relational components of service. Literature in manufacturing and service operations provides substantial support for treating price (or cost) as a separate dimension of service performance (Cleveland, Schroeder, & Anderson, 1989). Additional support for this approach is provided by Porter's (1985) generic strategies' scheme in which cost leadership (in contrast with quality differentiation, for example) appears as a distinct, yet viable, path for attaining competitive advantage.

Stank, Goldsby, and Vickery (1999) used the SERVQUAL dimensions as a starting point for producing a more generic conceptualization of logistics service performance, a unique example of industrial service. Their research identified operational performance and relational performance as the core dimensions of logistical service. Operational performance consisted of reliability (which captured the dependability and accuracy of a service following Parasuraman, Zeithaml, and Berry {1985}), and related to the consistent quality aspect of operational performance) and price. Parasuraman, Zeithaml, and Berry's (1988) responsiveness, assurance, and empathy attributes were encompassed in relational performance, the second dimension of service performance in their study.

Wisner (1999) surveyed firms that experienced market share increases and those that did not. The purpose of the study was to identify the characteristics differentiating successful from unsuccessful quality improvement techniques, by looking at competitors from one industry. The authors concluded that firms that experienced market share increases were more proactive and committed to the quality improvement process. They had top management support and benchmarked best industry practices more often. They also paid bonuses more often for quality improvements.

Flint and Mentzer (2000) conducted an exploratory research endeavor to gain a theoretical understanding from the customers' perspective on why business customers change what they value from their supplier relationships. Understanding what customers demand from their suppliers is critical to business success. The authors concluded that understanding customers' logistics needs over time is a key component to predicting what customers will value in the future.

Mentzer, Flint, and Hult (2001) acknowledged that logistics performance perceptions vary among market segments. Through a qualitative study between buyers and sellers of logistic services the authors nine potential components of logistics service quality (LSQ) that are relevant across different customer segments. The results of the focus group study indicated that customers were concerned with personnel

contact quality, order release quantities, information quality, ordering procedures, order accuracy, order condition, order quality, order discrepancy handling and timeliness. They concluded that logistics programs should be customized by customer segment. Even though all components are valued by end users, different customer segments place different weights on these components of logistics service quality. This segmentation strategy consequently would improve logistics efficiency and effectiveness.

The research of Stank, Goldsby, Vickery, and Savitskie (2003) examined the relationships among three dimensions of logistics service performance (operational, relational, and cost performance), customer satisfaction, customer loyalty, and market share. Their results indicated that of the three dimensions of service performance, relational performance is the single most important factor in creating customer satisfaction.

Zacharia and Mentzer (2004) recognized the value, influence and changing role and importance of logistics relative to other functions within the firm. The authors labeled this term logistics salience (LS). Then they researched, developed and tested a model addressing the reasons that logistics has become more significant in the firm. The results imply that logistics has become more significant particularly within the framework of time-based competition, environmental uncertainty, the adoption of information technology, and internal factors such as cross-functional integration.

Logistics has developed into an integral part of the corporate strategy of many firms, and, as a result, more companies are increasingly outsourcing their logistics activities to logistics service providers in an effort to improve service quality. Lai, Cheng, and Yeung (2004) developed a taxonomy that highlights the service strategies used by different types of logistics service providers (LSP's). The authors suggest ways that firms can benefit from LSP- increased service performance.

Voss, Calantone, and Keller (2005) surveyed 18 logistics distribution centers in the U. S. and examined the relationship between front-line employee performance and interdepartmental customer orientation. The findings indicated that high levels of front-line employee performance and interdepartmental customer orientation have a positive effect on distribution center service and supply chain performance. This study added further credibility to the importance of front-line distribution personnel in the delivery of quality output.

Forslund (2006) focused on the interaction between the purchasing process of customers and the order-to-delivery process of suppliers by using a sample of Swedish firms from four of the largest industries. This order fulfillment process controls the material flow between companies, and performance is critical in order to create customer satisfaction and competitive advantage. However, most prior research studies investigated only the customer perceived gap. Parasuraman et al. (1985) chose to examine an inter-organizational gap between the customer and the supplier. Their results concluded that suppliers rate their own performance considerably lower than their objective on all nine variables tested. Only 11 percent of the suppliers perceived that they met their own goal. Not only do supplier-perceived performance gaps occur, but also, an even larger inter-organizational gap exists (between logistics performance as perceived by the customer and logistics performance as perceived by the supplier) on all the variables studied.

Seth, Deshmukh, and Vrat (2006) recognized the importance of service quality in the supply chain management process. They proposed a model for assessing the quality of service at various interfaces of the supply chain using third party logistics companies. 3PL's help organizations to concentrate on their core activities and thus may result in lower costs and better customer service. However, to achieve this, firms must have in place the correct means to measure, monitor, and manage the quality of service. A basic model is proposed on the service quality in the supply chain based on the gap analysis (Parasuraman et al., 1985). The authors concluded that several key gaps are likely to affect the service quality at different levels. The authors also note that these gaps may be interrelated, and an acceptable quality of service throughout the supply chain is recognized as a prerequisite for successful delivery to meet the customer's expectations.

Davis and Mentzer (2006) acknowledged the increasing importance placed on logistics services as a differentiating competitive tool. The research examined how loyal relationships between suppliers and customers affect the size of the gap between customer expectations and suppliers perceptions of these

expectations. The purpose of the research was to explore how perceptions of logistics service quality affect loyalty between suppliers and customers and build a theory about the relationships between dependence asymmetry, logistics service, and loyalty. The study revealed that logistics service quality has a positive effect on loyalty. When exploring the service gap (difference between customer expectations of service and company understanding those expectations) in the Parasuraman, Zeithaml, and Berry (1985) model, the data showed a close match between the supplier's perception of what the customer expects and actual customer expectations. This study confirmed that in loyal relationships, the gap in logistics service quality expectations is relatively small, which also signals the importance of logistics service in supplier-customer relationships.

Effective service logistics management lowers costs and increases service value which positively impacts customer satisfaction (Cheung, Chan, Kwok, Lee, & Wang, 2006). The authors argue that information driven service logistics is insufficient for today's complex logistics environment so they propose a knowledge-based automation system (KBSAS) to enhance the competitiveness for manufacturing enterprises in service logistics. Their findings offer a number of advantages over conventional service logistics that include streamlining the service logistics process, reduction of paperwork, and improvement of customer service quality.

Rahman (2006) examined the extent to which quality management methods are in use in manufacturing, retail and logistics services. The results of the study indicate the primary reasons that quality programs are not implemented. Employees are unwilling to take ownership of the quality process: they resist change and are insufficiently trained. The results also show that customers value most of all on-time delivery and complete customer support from their suppliers.

Realizing the importance that logistics service quality has on firms differentiating them from competitors, Davis and Mentzer (2006) conducted an exploratory research study on loyal relationships between customers and suppliers in an asymmetric association. The authors investigated the size of the "gap" between customer expectations and suppliers perceptions of those expectations. This study helped provide a better understanding of the interrelationships between customers and suppliers in a supply asymmetric supply chain context.

Xing and Grant (2006) addressed the significance that electronic retailers (retailers that sell their products through the Internet only) and traditional retailers (multichannel retailers) place on physical distribution service quality (PDSQ). PDSQ helps retailers achieve a competitive advantage and offers better-quality customer service. Electronic home shopping through the Internet is primarily about speed, connectivity, information sharing, goods exchange and service (Javalgi & Ramsey, 2001). The authors conclude that both traditional retailers and Internet retailers try to increase their competitive advantage by improving customer service and PDSQ is an important criterion. The Internet retailer's ability to make accurate and timely deliveries is a key indicator against which it is judged and how it can differentiate itself in this highly competitive market. These Internet retailers are usually new entrants and have been found to provide reliable delivery as they rely more on PDSQ to build up their brands (Rabinovich, Bailey, & Carter, 2003).

TRANSPORTATION PERFORMANCE QUALITY

Many definitions and descriptions can be found of how logistics creates customer satisfaction. The most traditional are based on the creation of time and place utility (Clark 1922). Bienstock, Mentzer, Bird, and Murphy (1997) embarked on the development of a valid and reliable scale for measuring industrial customers (e.g., manufacturers, wholesalers, retailers, government organizations) perceptions of the physical distribution service quality they receive from their suppliers. Based on the results of the literature reviews and interviews, plus a two-step data-gathering process the authors developed and refined a valid and reliable measurement instrument for perceptions of PDSQ. The process used to produce the instrument measuring PDSQ followed Churchill's (1979) guidelines for developing better measures of marketing constructs as well as Gerbing and Anderson's, (1988) updated paradigm for the assessment of

unidimensionality. The model is based on the technical or outcome dimensions of timeliness, availability and condition.

The "Seven Rs" Mentzer, Gomes, and Krapfel (1989) describe the attributes of the company's product/service offering that lead to value creation through logistics performance quality. A firm's product offering is determined in part by the company's ability to deliver the right amount of the right product to the right place at the right time in the right condition at the right price with the right information. This prescription implies that part of the value of a product is created by logistics service. Examples of the value created by logistics service include the operational measures of logistics customer service as a percent of items in stock, percent of orders delivered on time, percent of delivered items undamaged and so on. These attributes are considered the "value" provided by the logistics service dimensions of availability, timeliness, and condition (Bowersox, Closs, & Stank, 2000).

Mentzer, Flint, and Hult (2001) expanded the service quality domain into logistics by focusing their research on one particular focal organization with multiple market segments in order to determine whether the general methodology used by Bienstock, Mentzer, Bird, and Murphy (1997) results in similarly valid, reliable scales of logistics service quality (LSQ). The researchers also focused on managerial and practical relevance required of managers of logistics firms.

Research frequently has sought to determine the relationship between service performance and perceptual factors such as customer satisfaction and repurchase intentions (Zeithaml, 2000). Customer satisfaction may be considered a cumulative evaluation based on the total purchase and consumption experience with goods or service over time (Fornell, 1992; Fournier & Mick, 1999). The evaluation is based upon post purchase confirmation or disconfirmation of the buyer's preconceived expectations of product or service standards. High customer satisfaction has been linked to improvements in a firm's economic returns, including market share and profitability (Anderson & Sullivan, 1993).

A number of findings strongly support the notion that logistics service quality improvements can increase customer satisfaction (Daugherty, Stank, & Ellinger 1998; Innis & La Londe, 1994). Operational elements of logistics service related to product availability, product condition, delivery reliability, and delivery speed, as well as relational elements such as communications and responsiveness have been shown to have a positive relationship with customer satisfaction (Daugherty, Stank, & Ellinger; Stank, Goldsby, & Vickery, 1999).

The literature also suggests a strong link between customer satisfaction and loyalty (Anderson & Sullivan,). Customer loyalty is conceptualized as having both behavioral and perceptual/psychological components (Anderson & Sullivan, 1993; Jacoby & Kyner, 1973). Repeat purchase behavior stemming from positive assessments of product or service offerings has often been used as a measure of customer loyalty (Leuthesser & Kohli 1995; Sharma & Lambert 1990).

Jacoby and Kyner (1973) assert that loyalty, in contrast to simple repurchase behavior, is the result of a psychological decision-making process that generates a nonrandom, behavioral purchase response with respect to one alternative out of a set of such alternatives expressed over time by a decision-making unit. Repeat industrial purchases representing increased resource expenditures between parties in industrial buyer-seller relationships are likely to result from an enduring desire on the part of the customer to maintain an important, valued relationship with a supplier (Cronin & Morris, 1989; Morgan & Hunt, 1994).

Daugherty, Stank, and Ellinger (1998) concluded that logistics operational elements related to product availability, product condition, delivery reliability, and delivery speed. Relational elements such as communications and responsiveness were found to influence customer satisfaction positively and also purchasing patterns that contribute to market share growth (Stank, Goldsby, Vickery, & Savitskie, 2003).

Mentzer and Williams (2001) noted that traditional marketing strategies emphasizing changes in price, promotion and product improvements are quickly duplicated by competitors. The authors suggest that when marketed effectively, improvements in ancillary services such as logistics can provide the firm with a sustainable competitive advantage.

EMPLOYEE SELECTION AND TRAINING

A major cause of poor service quality is employing the wrong people. Gronroos, (1999), reported that perceived quality of service was a function of both outcome measures and process measures. How tasks were performed is as important as the tasks, themselves. The six delivery criteria identified by Gronroos (1999) were professionalism and skills, attitudes and behaviors, accessibility and flexibility, reliability and trustworthiness, recovery, and reputation.

Managers often do not have a well defined profile of people to hire. They do not base hiring standards on service standards, which contributes to a mismatch between the type of people the company actually hires and the type of people the company needs to hire to deliver excellent service (Browning, 2008). Managers have to select their people well, provide them with a strong foundation culture in which to work, offer them strategic direction and give them the company specific training and education they need to perform their roles (Mayfield & Mayfield, 2006). Managers should learn the dangers of over-management. Service personnel need to be marketers as well as functionaries (Kattara, Weheba, & El-said, 2008). Personnel contact quality refers to the customer orientation of the supplier's logistics contact people. Specifically, customers care about whether customer service personnel are knowledgeable, empathize with their situation, and help them resolve their problems (Bitner, Boons, & Mohr, 1994). Similarly, Surprenant and Solomon (1987) suggest that service quality perceptions are tied more to the service process that involves personnel contact, than to the resulting service outcome.

Perceived quality in labor intensive services, such as trucking, occurs during service delivery, usually in an interaction between the client and contact person from the service firm (Durvasula, Lobo, Lysonski, & Mehta, 2006). Here, the consumers input (description of symptoms) becomes critical to the quality of service performance. Moreover, if employees are unsure of how to deliver excellent service, if they think they know how but are wrong, or if they believe management does not really care about service, they are unlikely to deliver excellent service (Parasuraman, 1998).

As with perceptions of service quality, perceptions of service delivery are based on the gap between expected and experienced delivery of that service. Parasuraman et al. (1985) addressed just these issues in their 1985 research and then narrowed them down in their 1988 SERVQUAL instrument: tangibles, reliability, responsiveness, assurance, and empathy. For the purposes of this review, these terms are defined as follows:

Tangibles	Special service equipment, age and condition of truck and personal appearance of the driver.
Reliability	Meeting expectations regarding delivery time, location, and condition of delivery.
Responsiveness	Willingness to help customers and provide prompt service.
Assurance	Knowledge and courtesy of drivers and their ability to inspire trust and confidence.
Empathy	Caring, individualized attention that the driver provides to his or her customers.

DISCUSSION AND NEED FOR ADDITIONAL RESEARCH

In conclusion, while a review of the literature shows that many researchers addressed numerous aspects of transportation performance quality, more empirical research needs to be conducted. In spite of its growing importance in corporate strategy and the global economy, the logistics discipline does not have as rich a heritage in theory development and empirical research as older more established disciplines such as anthropology, philosophy, psychology, and sociology (Stock, 1997). Moreover, much of logistics literature and research has been considered managerial in nature and lacking a rigorous orientation toward theory development, testing, and application (Mentzer, Bienstock, & Kahn, 1995). Future research may include a focus on managing the frontline personnel (truck drivers) who interact with customers on a daily basis.

In addition, since trucking firms play such a fundamental role in connecting supply chain elements in many U.S. markets, and firms of all kinds depend on trucks to pick up and deliver goods, additional

research should examine the impact these drivers have on delivering service quality to the end user. It may be surmised that although many products move almost entirely by way of ship, train or airplane, almost everything is carried by a truck at some point during the delivery process. Because of this, it is critical that managers in trucking firms continually strive to meet or exceed customer service requirements and expectations. Recognizing that a truck driver may be the only point of physical contact between the firm and its vendors may imply that drivers play a significant role in customer perceptions of service quality delivered.

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