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The Influence of Process Innovation and Operational Performance on the Relationship between Adoption of Reverse Logistics and Competitive Advantage: A Critical Review of Literature

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ABSTRACT

This paper examines the relationship between process innovation, operational performance, reverse logistics adoption and competitive advantage. According to the resource advantage theory of competition organizations gain competitive advantage through marshaling comparative advantage in resources. Empirical studies have shown that marshaling comparative advantage through the adoption of reverse logistics can lead to sustainable competitive advantage for firms. However, these studies have not demonstrated how various strategies to the adoption of reverse logistics impact on a firm's sustainable competitive creating capabilities. Further studies have shown that process innovations have the potential to reposition organizations' current assets in a manner that allows them to gain new capabilities that enable the achievement of higher operational efficiency and ultimately generate sustainability creating processes in the short and long-run. Studies have also revealed that firms gain comparative advantage when resources in their control facilitate them to generate and implement strategies that result in highly efficient and effective operations.

Keywords: Reverse Logistics, Competitive Advantage, Resource Advantage Theory

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Introduction

The concept of reverse logistics has been described as the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal (Rogers & Tibben-Lembke, 1999, Senthil and Sridharan 2014). Currently this is the most widely used definition in present reverse logistics literature and has been adopted by the Reverse Logistics Executive Council.

Organizations today are facing competitive, regulatory and social pressures within a dynamic business environment. This requires the pursuit of strategies to achieve both economic and environmental performance where trade-off decisions between economic and environmental performance requirements are to be made (Doern, Hill, Prince & Schultz, 1999). Growing environmental concerns, together with an accelerated increase in the introduction and use of new technology, has resulted to increased attention and focus on reverse logistics adoption (Blumberg, 1999). The barriers related to reverse logistics implementation within the manufacturing setup include considerable initial costs of adopting reverse logistics and the demanding and time-consuming nature of reverse logistics (Schultmann & Sunke, 2007); risks, uncertainties and liabilities associated with recovered items (Addis, 2012); lack of top management support in organizations (Gorgolewski, 2008); operational complications such as the need to provide onsite space and high labour costs (Chini & Bruening, 2003).

A number of strategies have been proposed to counter the impact of challenges to the adoption of reverse logistics. One of the strategies proposed is outsourcing product returns processes to third parties (He & Wang, 2005). The outsourcing approach allows a firm to concentrate on its core competences, achieve higher flexibility in reverse logistics operations and risk transfer to third party. A second approach, involves establishing collaborations or strategic alliances to integrate reverse logistics operations for firms within an industry. These can be pioneered by industry association or government (He & Ji, 2006). A third mechanism, involves adopting green strategies such as reuse, recycle and remanufacture. These are reverse logistics functions that also play the role of greening the supply chain (Rogers & Tibben-Lembke, 2001). Another strategy that can enable implementation of reverse logistics is having an internal self support system. This can be achieved by viewing the system from a closed-loop supply chain perspective or a product life cycle approach.

Reverse logistics has increased in importance and in today's competitive business environment has an important role in company's competitive advantage strategy formulation. As a function it therefore has a role in strategic decision making (Schwartz, 2000). It therefore, deserves considerable attention by researchers as it has potential to create sustainable competitive advantage. Only

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until recently have researchers began paying attention to reverse logistics (Scott, 2008).

Process Innovation and Reverse Logistics

Davenport, (2013) notes that process innovations involve the radical development of new services and products and new production systems in a creative manner. Creativity here includes significant improvements in equipment, production techniques or software. Keeley, Walters, Pikkel and Quinn, (2013), classified innovations as configuration, offering and experience related innovations. Configuration innovations include profit model, network, structure and process innovations. Offering innovations include product performance and product system innovations while experience innovations include service, channel, brand and customer engagement innovations. Process innovations consist of new production methods and new sources of raw materials, semi-finished products or components. The building blocks of process innovations are efficiency and product quality and can result in gaining competitive advantage (Grawe, 2009).

An attempt to provide the relationship between innovation and reverse logistics programme performance by Richey, Genchev & Daugherty, (2005) based on the resource advantage theory suggested that developing innovative competencies to handling product returns should be the strategy guiding resource utilization in the organization. The study also revealed that in both small and large organizations, innovation in reverse logistics programmes was related to operational service quality. Inauen & Schenker-Wicki, (2012) suggested that regular interaction with suppliers, customers and competitors together with establishment of innovation systems are characteristic of innovative organizations. Jayaraman & Luo, (2007) argued that organizations should adopt innovations in multiple dimensions such as, resource deployment, process reengineering, value chain restructuring, product redesign, information systems and new business creation. Such adoption if done simultaneously can improve operational performance. Grawe's (2009) model that is grounded in resource advantage theory suggested that innovation adoption directly results in an organization gaining competitive advantage.

Operational Performance

Operational performance involves the assessment of the extent to which predetermined goals and objectives are being achieved using a process oriented approach that measures productivity of resources and the quality of outputs and outcomes of products and services (Shaw, 2003). Operational performance identifies and measures attributes which relate outcomes of firm processes to performance such as reliability, production cycle time, and inventory turns. Operational performance measurement involves an on-going process of establishing, monitoring and pro-actively taking corrective action continuously towards achieving organizational goals, efficiently and effectively (Carter, Kale & Grimm, 2000).

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Studies (Carter et al., 2000 and; Brah & Lim, 2006) have shown that the major operational performance dimensions include; cost/productivity, time/speed, operations flexibility and quality. These operational performance constructs have been measured using different indices. For example, Voss, Åhlström & Blackmon (1997) constructed an index for operational performance consisting of seventeen questionnaire items that measured quality, productivity, and cycle time as performance indices. According to Slack, Chambers & Johnston, (2010) operational performance can be measured in terms of defects per unit, level of customer complaints, scrap level, mean time between failures, customer querry time, order lead time, throughput time and time to efficiency.

Reverse Logistics & Competitive Advantage

Competitive advantage is defined as a unique ability in a firm that enables it to have higher returns than its industry competitors (Kim & Hoskisson, 2015). Barney (1991) identified five resource properties that permit the attainment of sustainable competitive advantage by firms. These properties include the value of the resource, rarity of the resource, an imperfectly imitable resource, an imperfectly mobile resource and a non-substitutable resource.

Strategically managing reverse logistics, consolidates the market position of a firm and improves the firm's image leading to competitive advantage (Andel, 1997). Building the product returns process to generate new market opportunities creates competitive advantage as it attracts new clients and retains existing ones (Jayaraman & Luo, 2007). A firm that does not take cognizance of the importance of an effective reverse logistics programme, risks having damaged customer relations, poor brand image and a weak reputation. A well developed reverse logistics programme is a differentiator and leads to gaining sustainable market advantage. Therefore the reverse logistics domain has recently emerged as a source of gaining competitive advantage by influencing the purchasing behavior of customers based on how the product returns process is handled (Stock, Speh & Shear, 2006).

Theoretical Foundations

Resource Advantage Theory of Competition

The resource advantage theory of competition posits that organizations gain competitive advantage through marshaling comparative advantage in resources (Hunt & Morgan, 2005). Within the organization are the tangible and intangible resources capable of providing a market offering of value for a particular market segment in an efficient and effective manner (Hunt & Davis, 2008). Resources include knowledge, information, asset capabilities, organizational processes and a firm's attributes and are not just land, labor, and capital (Barney, 1991). Hunt & Madhavaram, (2012) categorized resources as informational, relational, physical, financial, legal, human and organizational.

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The resource advantage theory becomes important in explaining resource dependence relationships within organizations as they seek to gain comparative advantage. The theory establishes a framework for interrogating the impact of developing reverse logistics related capabilities and outcomes. According to Amit & Shoemaker, (1993) from a resource approach, accumulation of resources internal to the organization rather than the external environment should influence competitive strategy. This is by focusing on internal aspects of the organization. For resource advantage theory, both organizations' and resources are proposed as the heritable, durable units of selection, with competition for comparative advantages in resources constituting the selection process (Conner, 1991). Each organization will have at least some unique resources that become a source of comparative advantage leading to advantageous opportunities in the marketplace. Such resources are rare, imperfectly imitable, imperfectly mobile and non-substitutable and therefore, provide a source of long-term competitive advantage. The theory also recognizes the importance of innovation in gaining comparative advantage. It views innovation as endogenous to the organizational processes within a firm's competitive environment where competitive dynamics are disequilibrium-provoking as a key tenet. (Hunt & Madhavaram, 2012).

Transaction Cost Theory

Transaction cost theory is guided by certain key premises. First, the basic unit of analysis for firms is a transaction and transaction cost optimizing behaviour is key to studying firms (Williamson, 1991). Second, in optimizing transaction costs, the key is in balancing between transactions with different attributes and governance structures with different costs and competences (Clemons & Row, 1992). Third, transaction costs are classified into coordination costs which are costs of decision making while integrating economic processes and transaction risk costs referring to the exposure of exploitation in the economic relationship (Geyskens, Steenkamp & Kumar, 2006). Fourth, is the belief that the *risk* of opportunism is inherent in transactions. Opportunism refers to the disclosure of distorted or incomplete information with an aim to mislead, confuse or obscure others (Williamson, 1991). Fifth, the theory provides a framework for explaining why some tasks are performed in-house and others outsourced (Coase, 1937).

Transaction cost theory has certain limitations. First, although opportunism is inherent in many transactions, theorists of transaction cost have not explored the impact of market mechanisms on the risk of opportunism. Market mechanisms in the long run, eliminate actors with opportunistic behavior (Hill, 1990). Second, as much as the theory has had wide applicability, a lack of its full development has continued to limit its applicability in terms of functionality. Third, a lack of integration across disciplines where the theory has been applied such as sociology, law, economics, finance, accounting and operations management has had insignificant impact to the maturity and use of the theory (Geyskens et al., 2006).

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Despite these limitations, transaction cost theory provides the framework to analyze the implementation of reverse logistics from a strategic, tactical and operational level. At the strategic level the theory will provide a framework of how the scope of the overall organization structure will be established from a reverse logistics perspective and how operational systems will relate to each other. At a tactical level the theory will guide in determining activities to be performed in-house and those that need outsourcing and why? At the operational level, the theory provides guidance in the organization of the human asset such that internal governance structures are matched with team attributes (Williamson, 1991).

Diffusion of Innovation Theory

Diffusion of innovation theory suggests that in a social system, innovations are disseminated within a certain period to members using various channels (Rogers, 2003). Diffusion of innovation theory presumes diffusion occurs based on characteristics at several levels of influence such as influences at individual level, diffusion at networks level and innovations at the attributes level (Rogers, 2003). According to Wejnert, (2002) the diffusion process influencing variables can be grouped into three clusters. The first argues that innovation sharers in their capacity as opinion seekers or leaders have an effect on the diffusion rate and how the innovation will diffuse in the network system. (Shoham & Ruvio, 2008). According to Rogers (2003) the second cluster asserts that innovations are shared through information flows that are dependent on the characteristics of a communication network formed by the interconnection of individuals. The third consists of characteristics of the innovation such as its compatibility, relative advantage, complexity, observability and trialability. Individual behavior and attitudes are influenced by an innovations perceived attributes which in turn impact on the innovation diffusion rate (Rogers, 2003).

Limitations of the theory include lack of causality, pro-innovation bias and the psychological bias as a result of hetrophily (Rogers, 1976). A lack of process orientation means that almost all diffusion of innovation research is lack the ability to track variable changes over time periods. Pro-innovation bias implies an assumption that all innovations yield positive results and should wholesomely be adopted by everyone. Psychological bias of hetrophily argues that it is a complex process to separate the effect individual characteristics have on a system and the effect the system structure has on diffusion (Rogers, 2003).

Diffusion of innovation theory provides a foundation to describe and predict factors that accelerate or hinder the spread of innovations. Fundamentally for this paper, the theory becomes relevant in explaining factors that can hinder or facilitate the diffusion of process innovations as it influences the relationship between reverse logistics adoption and operational performance. For example, Grawe (2009) suggested that ubiquitous spread of innovation occurs when other firms discern the competitive gains made by firms that have embraced the new innovation such that

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they also become motivated to adopt the new innovation.

Institutional Theory

The new thinking among institutional theorists is that the structure of the formal organization is based on three building blocks which include imperatives in technology, dependencies in resources and institutional forces also known as "rule-like" frameworks (Scott, 2008). According to North, (1990) institutions define how interactions among humans take place through a process consisting of constraints at a formal (rules, laws and constitutions) and informal (norms of behavior, conventions, and self-imposed codes of conduct) level. Institutional structure and technologies used determine the transformational and transaction costs that impact on production costs.

A key pillar of the theory is that for firms to compete, increased organizational legitimacy should be as a result of organizational isomorphism (Kostova, Roth & Dacin, 2008). Isomorphism is a driving force on process types adopted by firms aiming at remaining competitive. Mechanisms for institutional isomorphism have been identified as coercive, mimetic and normative (DiMaggio & Powell, 2000).

This theoretical framework has been used to explain why organizations adopt policies, procedures and practices and what their reactions to environmental pressures should be (Meyer & Rowan, 1977). Similarly in this paper institutional theory has relevance in explaining institutional "forces" in the process of adoption of reverse logistics by organizations. The theory can further be of relevance in examining responses to environmental pressures in the process of adopting reverse logistics. Previously the theory has been considered as having valuable potential to research in the field of management for example studies in environmental related practices within the context of supply chain management (Sarkis, Zhu & Lai, 2011). Huang & Yang (2014) attempted to use the institutional theory to explain moderating effects of institutional pressures on reverse logistics innovation and performance. However, according to Scott, (2008) such research is largely non-existent in the reverse logistics literature. As a result, it is becoming a major research direction in reverse logistics.

Empirical Evidence Linking Key Study Variables

Adoption of Reverse Logistics and Operational Performance

Studies done on the adoption of reverse logistics have mainly focused on level of adoption, implementation barriers, or factors influencing adoption. Jim & Cheng, (2006) when comparing reverse logistics characteristics in the publishing industry concluded that reverse logistics among publishing firms in China is still at infancy stage and immature. Halim, Sabariah & Halim (2011) carried out a study on the adoption of reverse logistics among Malaysian manufacturers and concluded that although reverse logistics had been adopted, there was lower than average level of adoption. Ismail, Velioglu, Serifoglu, Büyüközkan, Aras, Çakar & Korugan, (2010) exploratory study of reverse logistics

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initiatives in several Turkish electronics and furniture firms shows that the reverse logistics initiatives were still in a very early stage.

Reverse logistics implementation barriers have been grouped into categories including management, financial, policy and infrastructure related in the Chinese context (Abdulrahman, Gunasekaran & Subramanian, 2014). Findings from the study showed that reverse logistics implementation barriers include insufficient knowledge and awareness of reverse logistics and a perception that reverse logistics require large capital commitment to implement. Ho, Choy, Lam & Wong (2012) examined factors influencing industries to implement reverse logistics. Results showed that key internal factors influencing implementation of reverse logistics were financial and human resources.

Organizations view reverse logistics as a "necessary evil" instead of an opportunity for performance gains (Genchev, Richey & Gabler, 2011). Conventionally, reverse logistics processes are viewed as activities that impose costs, hinder growth in productivity slow and impede competitiveness. Therefore, the impact of reverse logistics is often ignored or, is not well acknowledged by many firms (Huang & Yang, 2014), although it is generally accepted that customer satisfaction levels can be raised by implementing reverse logistics (Olorunniwo & Li, 2010; Min, Roath, Daugherty, Genchev, Chen, Arndt & Richey, 2005). Reverse logistics can also generate cost savings (Jack, Powers & Skinner, 2010; Srivastava & Srivastava, 2006).

Reverse logistics has a potential pay-off in so far as achieving operational performance gains is concerned (Daugherty, Richey, Genchev & Chen, 2005). Yet studies have shown converse results about this association. Doherty, (1996) argued that implementation of reverse logistics is very complex as a result of challenges and uncertainties involved in the process. Hung Lau & Wang, (2009) undertook a research to investigate whether reverse logistics models and theories have applicability in developing countries like China. The study revealed that lack of economic support and absence of a preferential tax policy impeded the reduction of high investment costs associated with reverse logistics for manufacturers in the electronics industry. Jim & Cheng, (2006) concluded that the loss on material costs as a result of discarding returned goods, is less than the resources spent on reverse logistics processes. These studies have suggested a relationship between reverse logistics adoption and operational performance although with mixed results. In this study we propose the following hypothesis:

H1: There is a significant relationship between adoption of reverse logistics and a firm's operational performance.

Operational Performance and Competitive Advantage

Studies linking operational performance and competitive advantage are rare. However, Carter et al., (2000) argued that the objective of top management in any organization is to

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maximize their operational efficiency by all possible means in order to sustain their competitive advantage and survive in the market. Oral & Yolalan, (1990) observed that for firms to attain operational efficiency, minimizing redundancy and waste is a priority. This can be achieved through leveraging resources that are most instrumental to the success of the firm. Similarly the firm must also make use of the best business processes, human resources and technology.

Value chains have been argued to have potential as a source of competitive advantage (Porter, 1991). Value chains are a series of activities associated with creating higher value than competitors in the process of design, production, marketing, delivery and after sales service for both products and services. Such activities create comparable value to the firms competitors through either performing the activities more efficiently than industry competitors (lower cost), or performing these activities in a distinctive way thereby creating greater buyer value that secures a surcharge (differentiation). In addition these activities are performed by firms forming a value system of vertical activities that is both upstream and downstream in the supply chain. Voss et al., (1997) suggested that operational performance affects competitive advantage measures like market share and customer satisfaction.

Reverse logistics programmes can assist a firm's value system in identifying problem areas and defect patterns, hence creating a way to minimize returned products (Tibben-Lembke, 2002). Such a value system has either direct or indirect benefits (De Brito, Flapper & Dekker, 2002). The direct (financial) benefits include income from re-sold products, spare parts savings or savings realized from sourcing when raw materials are substituted with de-manufactured parts or recycled materials. The indirect benefit (non-financial) comes from improved corporate image due to recycling of wastes. On the basis of these arguements the researcher proposes the hypothesis below:

H2: There is a significant relationship between a firm's operational performance and competitive advantage.

Reverse Logistics, Process Innovation & Operational Performance

Firms need to reposition their current assets in a manner that allows them to gain new capabilities through innovation in order to achieve higher operational efficiency and generate sustainability creating processes in the short and long-run (Hart, 2005). According to Porter's (2008) fit strategy, innovations at a strategic level should be considered at the formation and diffusion stages. Porter, (1991) differentiated operational efficiency and strategy, and argued that they are both critical components for a firm's competitive advantage. Innovations affect operational performance with regard to flexibility, productivity, quality and lead times (Armbruster, Bikfalvi, Kinkel & Lay, 2008, Sun, 2016)

Only until recently have we seen explanatory research linking reverse logistics, process innovation and competitive advantage (Jack et al., 2010, Yu

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and Solvang, 2016). Yet process innovation according to Christmann, (2000) is key for reverse logistics because reverse logistical flows are distinct from standard forward logistics operations and need unique handling systems which require the organization to allocate additional resources. Huang & Yang, (2014), proposed that reverse logistics innovation positively influences firm performance. These studies have shown process innovation is an essential driver for the success of a firm. Process innovation is thus seen to have a mediating role between reverse logistics and operational performance. Based on these arguements the researcher posits the hypothesis below:

H3: Process innovation has a significant moderating influence on the relationship between adoption of reverse logistics and operational performance.

Reverse Logistics, Operational Performance and Competitive Advantage

Reverse logistics if strategically adopted by a firm becomes an opportunity to gain competitive advantage (Stock, 2001). According to the resource advantage theory of competition, harnessing unique resources in an innovative manner can assist a firm gain comparative advantage internally, which then leads to building competitive advantage at the marketplace. Firms gain comparative advantage when resources in their control facilitate them to generate and implement strategies that result in highly efficient and effective operations (Barney, 1991). Efficiency is an operational performance dimension which can in turn affect competitive advantage through measures such as employee satisfaction, customer satisfaction, waste reduction, revenue increase and market share and profitability (Voss et al., 1997; Awino, Muchara, Ogutu & Oeba, 2012). These studies demonstrate a relationship between operational performance and competitive advantage.

The need to initiate sustainability creating capabilities in reverse logistics in order to create competitive advantage is self evident for firms (Huang & Yang, 2014; Jack et al., 2010). According to Stock et al., (2006) a firm's customer satisfaction levels, cost reduction efforts, revenues and profits are directly and positively affected by how the firm manages product returns. A catalog retailers survey by Daugherty, Autry & Ellinger, (2001) found that, reverse logistics programme achievement was significantly influenced by how resources are committed by management. Reverse logistics practices have the potential to reduce customer's risk when purchasing products, and increase customer value (Russo & Cardinali, 2012; Rogers & Tibben-Lembke, 2001). Richey et al., (2005) argued that developing innovative reverse logistics capabilities using resources is important for improving organizational performance and gaining competitive advantage.

From the above, the studies suggest reverse logistics and competitive advantage have a relationship contingent on operational performance. However the strength of the relationship between reverse logistics and a firm's competitive advantage as dependent on operational performance is not known to

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have been investigated before. Huang & Yang (2014) arguing from an institutional theory perspective concluded that the presence of institutional pressures and how a firm reacts to these influence the relationship between capabilities in reverse logistics and external organizational performance. This conclusion suggests operational performance intervenes the relationship between reverse logistics and competitive advantage. Thus the researcher posits the following hypothesis:

H4: A firm's operational performance has a significant intervening influence on the relationship between reverse logistics and a firm's competitive advantage

Conclusion & Research Gaps

There is a general understanding that adoption of reverse logistics has the potential to create sustainable competitive advantage. This study established that studies relating to reverse logistics adoption have generally focused on the level of adoption, barriers to implementation or factors influencing the adoption process. Empirical studies have acknowledged the growing importance of reverse logistics, by investigating the association between reverse logistics and sustainable competitive creating capabilities. However, these studies have not demonstrated how various strategies to the adoption of reverse logistics impact on a firm's sustainable competitive creating capabilities. Such strategies are core in improving firms' competitiveness and provide an opportunity for investigation by supply chain and operations management researchers. Review of literature on reverse logistics and competitive advantage reveal a number of gaps as shown in Table 1. Similarly, although reverse logistics has been argued to have operational performance gains studies have revealed mixed results in different countries and in various manufacturing sectors.

Empirical studies have also demonstrated that the effect of reverse logistics adoption on competitive advantage is contingent on moderating and intervening variables such as process innovation and operational performance. Exploratory research has suggested that developing innovative competencies to handling product returns should be the strategy guiding resource utilization in the organization. This is because the adoption of reverse logistics is associated with gaining more efficient and effective internal capacities when process innovation is harnessed. However the impact of process innovation on the relationship between reverse logistics and operational performance has not been established.

Similarly, firms need to reposition their current assets in a manner that allows them to gain new capabilities through innovation in order to achieve higher operational efficiency and generate sustainability creating processes in the short and long-run. Studies have also shown the association between reverse logistics and competitive advantage is dependent on operational performance but the strength of this relationship also needs investigation.

The study also concluded that the relationships between process innovation, operational performance, adoption of

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reverse logistics and competitive advantage can be explained from certain theoretical perspectives. These include resource advantage theory of competition, diffusion of innovations theory, transaction cost theory and institutional theory. The base theory in this study is resource advantage theory because it provides a framework in explaining resource dependence relationships within organizations as they seek to gain comparative advantage and ultimately gain competitive advantage. Each organization will have at least some unique resources that become a source of comparative advantage leading to advantageous opportunities in the marketplace. The theory also considers innovation as endogenous to the processes of the organization in the context of a firm's competitive environment.

Table 1: Summary of Knowledge Gaps

Researcher (s)	Focus	Methodology	Findings	Knowledge Gap
Hunt & Davis (2008)	Resource Advantage Theory Development	Review of literature on the resource advantage theory. The paper used a personal retrospective approach.	Key events by B.J. "Bud", Rob Morgan, Roy Howell, Randy Sparks, Kim Boal and Bob Phillips have contributed to the development of resource-advantage theory.	The resource advantage theory remains a work in progress and the development of the theory been informal which is consistent with the absence of a formal "logic" of scientific discovery.
Abdulrahman, M. D., Gunasekaran, A., & Subramanian, N. (2014)	Reverse Logistics Adoption	Based on a review of literature on the barriers to the implementation of reverse logistics in the context of Chinese manufacturing firms	Reverse logistics implementation barriers include insufficient knowledge and awareness of reverse logistics and a perception that reverse logistics require large capital commitment to implement	Lack of acknowledgement on the importance of reverse logistics and the perceptions that reverse logistics require considerable initial costs of adoption and are demanding and time-consuming are some of the barriers to the adoption of reverse logistics
Huang & Yang, (2014)	Reverse Logistics Innovation, Environmental Performance, Sustainable Development, Economic Performance,	Institutional theory to explain moderating effects of institutional pressures on reverse logistics innovation and performance. Hierarchical regression analysis is used.	Reverse logistics innovation is positively associated with environmental and economic performance. Moreover, institutional pressures positively moderate	Lack of understanding on the impact of reverse logistics on the future performance of the organization

	Institutional Pressures		the relationships between reverse logistics innovation and environmental performance.	
Jack, E. P., Powers, T. L., & Skinner, L. (2010)	Reverse scheduling, Contracts, Cost Reduction, Retailers	Based on a survey of 295 retailers, the paper evaluated the influence of customer and retailer related antecedents of reverse logistics capabilities and their subsequent impact on cost savings.	The need to initiate sustainability creating capabilities in reverse logistics in order to create competitive advantage is self evident for firms as it leads to cost savings. Opportunism has negative effect on reverse logistics capabilities.	Lack of explanatory research linking reverse logistics, process innovation and competitive advantage

Transaction cost theory becomes relevant in linking reverse logistics adoption strategies and operational performance. This is because it establishes a framework for explaining how the organization structure will be established from a reverse logistics point of view and how operational systems will relate to each other, in determining activities to be performed in-house and those to be outsourced and explaining how internal governance structures are matched with team attributes. Diffusion of innovations theory creates a platform for explaining factors that can hinder or facilitate the diffusion of process innovations as it influences the relationship between reverse logistics adoption and operational performance. Finally institutional theory becomes relevant in explaining effects of institutional pressures on reverse logistics innovation, operational performance and competitive advantage.

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