



GSJ: Volume 11, Issue 2, February 2023, Online: ISSN 2320-9186
www.globalscientificjournal.com

**IMPACT OF RELATIONAL RESOURCES ON LOGISTICS PERFORMANCE OF
PAKISTAN'S 3PL COMPANIES: LOGISTICS INNOVATION CAPABILITY AS A
MODERATOR**

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ABSTRACT:

Drawing on the idea of the resource-based view, this paper examines the relationships between relational resources, innovation capability, and logistics performance in the third-party logistics (3PL) sector. Based on data collected from 3PL providers in Pakistan, this study adopts the approach of structural equation modeling to examine the hypothesized relationships among relational resources, innovation capability and Logistics performance.

This research adds to the existing body of literature by examining the influences of relational resources/ cooperative relationships on logistics service performance via the moderating mechanism of logistics innovation capability. This study aims to extend its scope in so many ways. In numerous respects, this research aimed to add to the body of existing literature.

Keywords: Logistics Innovation capability, Relational resources, Resource-based view, Third-party logistics, Pakistan.



CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY:

As logistics market becomes more competitive day-by-day because of the massive & tremendous expansion in logistics and transportation firms which attempt to provide the excellent logistics operations for enduring development in the long run (M. Wang et al., 2020). Because of the economy's explosive growth, market for logistical services have boomed. (C.-Y. Lin & Ho, 2011). In the current era, the supply chain complexity got higher along with that customer expectation also increases like thunder. (M. Wang et al., 2018). So, to become more competitive, the 3PL firms add values to the services provided to logistics users which enables them to gain customer satisfaction.

3PL providers are now considered as the rays of sun for the supply chain & for primary supply chain members & they will make logistical services much more customer driven (M. Wang et al., 2018). This theory used to determine the strategic resources includes, i.e., skills, technologies, capabilities and infrastructure, which a business could utilize to obtain an advantage over its rivals. (M. Wang et al., 2020). So, increase in logistics innovation capability improves overall logistics performance & thus has a positive effect on relational resources, which at last generates competitive edge and gain's a firm's market share (M. Wang et al., 2020). By being more agile and adapting to changes in the market smoothly, it cannot signify the speeding pace of innovation and is extremely user centric, leading to quicker design processes (M. Wang et al., 2018).

Relational resources contemplate the willingness to cooperate with others, managed for mutual economic benefit (X. Wang et al., 2020). Thus, 3PL strives hard to gain competitive advantages and achieve remarkable performance to maintain strong relational resources. However, relational resources itself acts as a competitive edge for 3PL providers, because this edge is hard to imitate for rivalries firms. Logistics innovation capability plays a major key role in better cooperative relationships which at the end have a great impact on logistics performance (Shou et al., 2017). Although it is widely understood that innovation in logistics boosts operational efficiency, remarkably little is understood as to how logistics innovation may impact other factors towards the betterment of logistics performance (Panayides, 2006).

The prime focus of logistics innovation capability is to achieve goals of logistics performance outcomes by cost efficiency, profitability, on-time delivery, social responsibility, low losses and destruction, maintaining reasonable pricing, flexibility, customers '

satisfaction, social responsibility & gain competitive edge at the same time (Sureeyatanapas et al., 2018).

As discussed earlier those relational resources have an impact on logistics performance strengthening logistics innovation capability as it required various levels of integrations i.e., innovation integration and strategy integration, as a result they generate transparent value co-creation process of sharing strategic information which helped in achieving common shared goals which improves performance of logistics services and ultimately yields in best class outcomes in logistics industry (X. Wang et al., 2020)

1.2 PROBLEM STATEMENT:

Rapidly changing business norms and uncertain environment proves logistics innovation capability and green logistics as a most important tool for the Pakistani 3PL providers as to be competitive in the marketplace (M. Wang et al., 2018). Greater technology advancement and innovation in logistics have become the most important and time challenging concern for 3PL providers while remaining budget conscious. It is seen quietly that most of the 3PL cooperative relationships collapse as a result of poor goal transparency and effective two-way communication.

To address these matters, this research article outlines an factual inquiry that explores the linkage among relational resources and improving quality of logistic service performances as a whole (Panayides, 2006). Moreover, in this study, we are going to tests how the function of Logistics innovation capability strengthen the relationships between cooperative relationship/ relational resources and logistical service performance (Shou et al., 2017a). More efforts are required to study and fill the research gap showing whether relational resources can affect logistics performance considering Logistics innovation capability as a moderator.

According to Shou et al. (2016), 3PL suppliers get their best innovation ideas through interacting with their clients. This suggests that relational resources help 3PL providers innovate. It has also been claimed that in order for logistics service providers to have a competitive edge, innovation is crucial. As a result, the ability to innovate might potentially connect relational resources to the logistics service performance of 3PL providers. (Shou et al., 2017a)

1.3 OBJECTIVE OF THE STUDY:

This study contributed to the existing of research by analyzing the impact of cooperative relationships/relational resources on logistical service performance via the moderating mechanism of logistics innovation capabilities.

Following are the target areas of the study:

- To investigate the influence of cooperative relationships/relational resources on 3PL providers' logistics service performance.
- To study the moderating role of logistics innovation capability in linkage between the relational resources/ cooperative relationship and logistics service performance of the 3PL providers firms.

1.4 RESEARCH QUESTION:

The following two research questions are what we're seeking to get solutions to:

RQ # 1: Do relational resources/ cooperative relationships have an influence on 3PL service providers' logistical performance?

RQ # 2: Does logistics innovation capabilities play a role in moderating the linkage between 3PL providers' relational resources/ cooperative relationships and logistics performances?

1.5 SIGNIFICANCE OF STUDY:

This research add to the existing corpus of literature by examining the influences of relational resources/ cooperative relationships on logistics service performance via the moderating mechanism of logistics innovation capability. This study aims to extend its scope in so many ways. In numerous respects, this research aimed to add to the body of existing literature. First, we extend our analysis to look at the moderating mechanisms throughout which relational resources influencing logistics service performance because earlier studies focused only on the direct effect of relational' resources on firm performances. Secondly that study contributes to the existing logistics research on Pakistan by gathering and evaluating data from 3PL providers in that country. Our study offers valuable insight for the advancement and progression of logistics research on emerging economies, because Pakistan is a representative example of an emerging economy & to add more, we collect and analyze the data of 3PL providers in Pakistan which gives more clear insight to Pakistan's logistics

provides. Since, Pakistan's logistics market is emerging day-by-day which has a great scope around the globe.

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CHAPTER 2: LITERATURE REVIEW

2.1. RESOURCE-BASED-VIEW THEORY:

The resource based perspective, pioneered by Wernerfelt in 1984, states that companies can acquire and sustain long-term competitiveness by creating and exploiting significant resources and capabilities. (Wernerfelt, 1984; Yang et al., 2009).

The concepts of physical, intangible, and capability resources, all of which have an influence on a company's excellent performance, is another essential rational justification adopted from the RBV literature (Karia & Wong, 2013). Resources are physical/ tactile (for example, plants, facilities, instruments, apparatus and technologies) and intangible or non-physical (for example, data information, knowledge and expertise, brand, relational resources and human capital) assets which the firm owns or controls. The firm deploys resources through internal operating procedures and routines for achieving core business objectives. The potential of a firm to exploit its resources is to attain desired results at the end & is referred to as its capability. They allow the company to acquire and sustain a competitive advantage over its competitors (Shou et al., 2017b). From the previous studies, Logistics capabilities were found to be closely related to firm excellent performance. (Yang et al., 2009). In the 3PL sector, some researchers used the RBV-perspective to experimentally assess the influence of resources' expertise and competencies on performance of the company.

Lai et al. (2008) investigated how 3PLs' service providers use Information Technology skills to gain long-term comparative edge. (Shou et al., 2017b).

2.2. RELATIONAL RESOURCES':

Relational resources, according to Morgan and Hunt (1999), are “resources gained via relationships”, they further stated that these relationships exist both within the company and outside of it (Morgan & Hunt, 1999). Relational resources refers to proactive approach for the development and sustainability of relationships with cooperative partners that would result them in great benefits and/ or profits (Panayides, 2006). Companies must consider technical skill, market understanding, and managerial experience when choosing relational relations (Panayides, 2006).

The notion of relationship orientation has been conceived by the several writers to cover extra facets, encompassing non-economic and social dimensions as well as communication, trust, and bonding. (Panayides, 2006).

The key to achieving resource synergy among strategic partners is to build relationships stronger and it can only be possible via transparency in end-to-end connectivity. (Yew Wong & Karia, 2010). Relational resources make it possible for clients and LSPs to cooperatively plan, carry out, and coordinate logistical operations, which may result in lower costs and more client satisfaction. (Karia & Wong, 2013). Long-term relationship is genuinely based on mutual trust and commitment, and has long been established that they lead to excellent performance (Shou et al., 2017b; Yew Wong & Karia, 2010).

Relationships, according to the strategic literature, are essential to a company's ability to perform well economically. (Karia & Wong, 2013)

In summary, it highlights the significance of the company's collaboration with external parties like suppliers and clients. However, the methodology by which relational-resources impact company performance, on the other hand, has gained little attention. This research examines how relational resources impact logistical service performance via the mediation role of green logistics & moderating role of logistics innovation capability, and it contributes more in 3PL industry. (Shou et al., 2017b).

2.3. LOGISTICS INNOVATION CAPABILITY:

The resource-based views perspective was usable in order to develop innovation capabilities, which also has a long history of studies. Logistics can increase efficiency by technology which has left no sphere in our environment to lurk into, has created new bounties in business as well (Panayides, 2006). Supply chain-4.0, which is the reformation of previous supply chain processes, layout and planning, manufacturing, distribution, consuming, and logistical operations, is one of these advantages. This is using technologies viz industry 4.0 (Holubčík et al., 2021).

The capability of a company to adopt or execute groundbreaking ideas, procedures, technologies, or services is referred to as innovation capability. A new product launch or newer service, a newer manufacturing procedure, a newer proposal or administrative framework, or a newer strategy programme involving firm's personnel's can all be considered innovation. Innovation may take place in a variety of areas inside a business (Shou et al., 2017).

The collaboration along the chain allows for lower inventories through swapping up well-grounded planning data, change in lead time depletion through immediate information provision throughout the chain, and an early warning system and the ability to react swiftly to disruptions anywhere (Shou et al., 2017b)

Some of the applications used at various levels in logistics innovation capability are IoT & block chain technology which also helped in supporting the green initiatives. The core elements of operational excellence in automated industry is the pursuit of perfection (Wang et al., 2020).

Logistics innovation via green logistics means incorporating environmental considerations into logistics operations, the implementation of digitalization (innovation capability) will enhance Logistics service performance in terms of integration, strong collaboration and sustainability is the concept of adopting particular procedures that are both environmentally friendly and efficient & effective in nature. (Lin & Ho, 2011). Emerging technologies have the potential to make overall Logistics service performance more successful. (Trivellas et al., 2020).

This concept is classified into four classes after doing several surveys for logistics capability for physical distribution of providers of Logistical services: (1) Internal initiative and capability (logistics capability took on & self-coordinated by the providers of Logistical services), (2) External initiative and capability (logistics capability which need joint effort with different firms i.e., with relational resources), (3) Innovating initiative and capability (logistics capability beforehand totally obscure to the providers of Logistical services), & (4) Optimizing initiative and capability (logistics capability to maximize efficiency). The authors propose a dual-dimensional framework having viability capability of logistics and recognize four main areas (Internal initiative and capability of enhancement, inside initiative and capability of advancement, external initiative and capability of enhancement, external initiative and capability of innovation) (Pieters et al., 2012).

In this study, we are going to fill the research gap, this article will study the influence of cooperative relationships/ relational' resources on logistical excellence of 3PL providers, in light of moderating role of logistics innovation capability in Pakistani logistics industry, so we can see that logistics innovation capability which also gives businesses a clear economic benefit undeniably, thus establishes strong relations with cooperative partners. (Lin & Ho, 2011).

Logistics innovation operations also require detail strategizing to troubleshoot problems like dearth of experience & expertise, a dearth of resources, dearth of technological

knowledge, these factors straight away slow down 3PL organizations for adopting successful and strict environmental control and measures. But, most importantly, cooperative partner can face hindrance for corporation to integrate & gel in if not aware of latest technological tools and techniques (Lin & Ho, 2011).

2.4. LOGISTICS SERVICE PERFORMANCE:

Studies on logistics service quality in the context of 3rd Party logistics have identified punctuality, flexibility, precision, responsiveness, problem-solving skills, and keeping commitments as crucial service quality and performance factors.(Panayides, 2006).

A/c to (Griffis et al., 2004) logistics chiefs have customarily accepted they face an extreme choice: either make progress toward productivity; or take a stab at adequacy. However ongoing logistics research has proposed that these two factors' destinations are totally unrelated, it is probable that this predicament is unjustified. It is necessary for an effective logistics is to performed in reducing or mitigating the risks environment, and supply chain risks mitigate if it design in a resilience way to mitigate risks or if in case of occurrence of disruptive event it will bounce firm back to the positive in which it was, or may in more better state. All of the discussed studies display the findings that logistics performance has an effective part in an organization which can be achieved by resilient supply chain strategy.

2.5. HYPOTHESIS DEVELOPMENT AND RESEARCH MODEL:

2.5.1. Hypothesis development:

In this study, we are going to address the gap in research, this article will study the influence of cooperative relationship/ relational resources on company's logistical service performance in light of moderating role of logistics innovation capability in Pakistani logistics industry, as Logistics innovative functions that aim in minimization of the adverse effect around the globe, increase efficiency which also gives businesses a clear economic benefit undeniably, this research examines how relational resources/ cooperative relationships impacts 3PL firm's logistical performance via moderating role of logistical innovation capability, Relational resources, according to Morgan and Hunt (1999), & Logistics innovation enhances integration, collaboration and sustainability (Lin & Ho, 2011).

According to resource-based viewpoint, firms may outperform competitors by acquiring and exploiting strategic resources (Yang et al., 2009). Relations resource have been mentioned as the most important critical success factors (CSF) for 3PLs firm's logistics

performance. Relational resources are considered as the strategic weapon for 3PLs providers to gain and sustain competitive edge and is based on mutual trust and commitment, and has long been established that at the end leads to excellent logistics performance. Thus, came up with following hypothesis:

H1: Relational Resources/ cooperative relationships are positively related to Logistical service performance of 3PLs providers.

Logistics innovative functions that aim in minimization of the adverse effect around the globe, increase efficiency which also gives businesses a clear economic benefit undeniably, Relational resources, according to Morgan and Hunt (1999), are “resources gained via relationships”(Morgan & Hunt, 1999) & Logistics innovation enhances integration, collaboration and sustainability (Lin & Ho, 2011) which enhances Logistical service performance.

Supply chain-4.0, which is the reformation of previous supply chain processes, layout and planning, manufacturing, distribution, consuming, and logistical operations, is one of these advantages. (Holubčík et al., 2021). Innovation capability considered to be the most influential factor for relational resources & most significant factor of firm’s logistics performance (Calantone et al., 2002). This innovation gives the next door of collaboration in the logistics sector i.e., beneficial wholly for relational resources & which the end benefit logistics performance of 3PL providers. The collaboration along the chain allows for lower inventories through swapping up well-grounded planning data, change in lead time depletion through immediate information provision throughout the chain, and an early warning system and the ability to react swiftly to disruptions anywhere, which in turns minimizes wastage (Shou et al., 2017b). Thus, came up with following hypothesis:

H2: The higher the innovation capability, the stronger the linkage between Relational resources/ cooperative relationships and Logistical services performance.

2.5.2. Theoretical framework:

This research paper outlines the factual investigation that examines the linkage between relational resources and improving the quality of logistics service performance as a whole (Panayides, 2006). Moreover, in this study, we are going to test how the role of Logistics innovation capability strengthen the relationship between cooperative relationship/ relational resources and logistical service performance (Shou et al., 2017b). More efforts are

required to study and fill the research gap showing whether relational resources can affect logistics performance considering Logistics innovation capability as a moderator.

This research adds to the existing body of literature by examining the influences of relational resources/ cooperative relationships on logistics service performance via the moderating mechanism of logistics innovation capability. This study aims to extend its scope in so many ways. In numerous respects, this research aimed to add to the body of existing literature.

According to Shou et al. (2016), 3PL suppliers get their best innovation ideas through interacting with their clients. This suggests that relational resources help 3PL providers innovate. It was also claimed that in order for logistics service providers to have a competitive edge, innovation is crucial. As a result, the ability to innovate might potentially connect relational resources to the logistics service performance of 3PL providers. (Shou et al., 2017b)

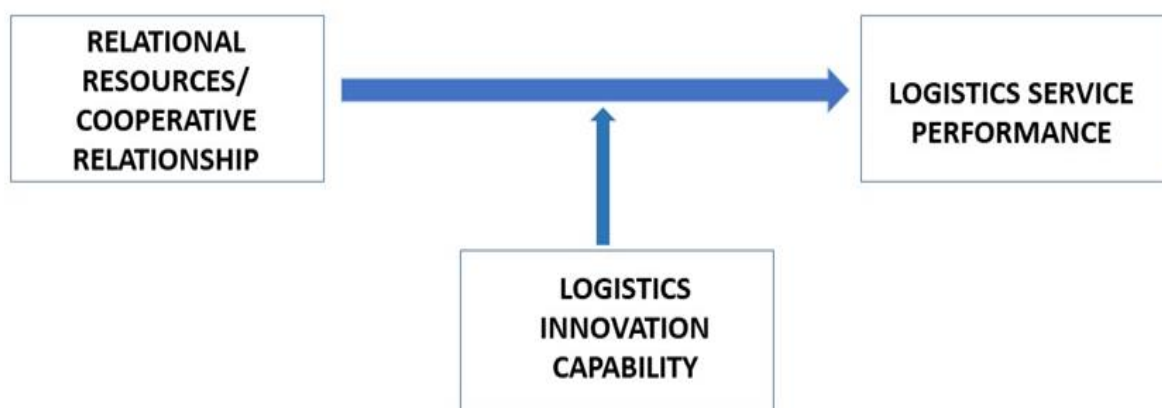


Figure 1 Conceptual Framework

CHAPTER 3: RESEARCH METHODOLOGY

The research strategy, design of the study, data gathering techniques, data collecting instruments, and sample size are all described in this study.

3.1. DATA COLLECTION:

Purposive sampling was utilized to collect data from the Pakistani 3PLs industry and quantitative approach was used to analyze the results. Purposeful sampling is a frequent technique in qualitative research for identifying and recruiting people with relevant knowledge and experience to make the most effective use of available resources. Data from participants is gathered through a variety of means, including email, online survey platforms, social media, and traditional distribution techniques. First, emails with the online survey forms were sent to the selected respondents based on a database of relevant responders and industry leaders' email addresses. Then, to further broaden the scope of this poll, Google Forms, a web-based and online survey tool, was used. The target audience for the research was then further reached with the link to the Google Forms using social media platforms like WhatsApp; given the research's focus on the business world, LinkedIn was also used for the same purpose. The target demographic received printouts of the same questionnaires both personally and through professional networking venues like seminars, industry conferences, and meetings. This strategy was chosen by the study's researchers due to its dependability and ease in removing ambiguity from the answers.

Because participants had to meet a certain standard before their opinions could be considered for this survey, the age range for this study was limited to those who were at least 18 years old. Managers who functioned at a minimum level of junior management hierarchical level within the Pakistani 3PLs sectors were the participants in this study. The respondents were selected on purpose from a database containing information on different Logistics providers sectors. I submitted my request for permission to data gathering to the relevant individuals in charge of the selected domains of 3PLs. The questionnaires were sent out to employees after receiving approval to conduct the research. The survey and project description questions took about 25 minutes to finish. It was made clear to the respondents that their participation in this research was entirely optional, and their identity was protected at all times. No monetary compensation was offered as a bonus for taking part in this study. (Karia & Wong, 2013)

3.2. QUESTIONNAIRE DESIGN & MEASURES:

The development of a questionnaire serves as an evaluation tool for the model's components. The questionnaires are revised by researchers and specialists who have substantial experience working with the SCM. In order to determine whether or not the questionnaire is valid, one uses resources that are considered to be reputable and standard. Employees of the Pakistani 3PL company are given copies of the questionnaire to fill out. All questionnaire items use five-point Likert-type scale 1 indicates that you entirely disagree, 2 indicates that you disagree, 3 indicates that you neither agree nor disagree, 4 indicates that you agree, and 5 indicates that you totally agree. A structured assessment questionnaire is used to evaluate the hypotheses. This questionnaire takes into consideration the research hypothesis as well as the data acquired from the study literature review. For the purpose of carrying out the statistical analysis of the questionnaire, the application of the software packages known as SMART-PLS [4] (Partial Least Squares) 4.0 is carried out. The number of subjects in the sample is 80, which is more than sufficient for the PLS estimation techniques. Employees of Logistics companies are going to serve as the samples of interest for this investigation. The advancements and innovations that have been made in 3PL over the past few years have led to an increase in the sector's adoption of this technology which leads towards better logistics service performance.

In this study, the identification of construct measures of relational resource, innovation capability and Logistics service performance was grounded in the existing literature. All the constructs were measured by existing multi-item scales. Drawing upon considering several authors, mainly (Shou et al., 2017b) and (Stank et al., 2003), we measured relational resources with five items. Innovation capability was measured with the scale commonly adopted in prior studies of (Shou et al., 2017b). Logistics service performance was measured by eleven key indicators which were commonly used in previous studies (Karia & Wong, 2013).

Table 1: Constructs, items, mean & S.D

CONSTRUCTS & ITEMS			MEAN	S.D
<u>RELATIONAL RESOURCES / COOPERATIVE RELATIONSHIP</u>	RR1.	Our company establishes close coordination/collaboration with business partners.	4.542	0.720
	RR2.	Our company commits to share information among business partners.	4.031	0.970
	RR3.	Our company try to establish a long-term relationship with business partners.	4.653	0.847
	RR4.	Our company inclines to recruit staff with good communication skill.	4.292	0.928
	RR5.	Our company ensures that both parties are committed to improvements that may benefit the relationship as a whole, and not only the individual parties.	4.375	0.784
<u>LOGISTICS INNOVATION CAPABILITY</u>	LIC1.	Our company adopts technologies and innovative solutions for problem-solving.	4.306	0.931
	LIC2.	Our company frequently tries out new ideas.	4.167	0.965
	LIC3.	Our company seeks out new ways to do things.	4.111	0.869
	LIC4.	Our company is creative in its methods of operation.	4.097	0.878
	LIC5.	Our company is often the first to market with new products and services.	3.917	0.990
	LIC6.	Our new product/service introduction has increased over the last 5 years.	4.083	1.017

<u>LOGISTICS PERFORMANCE</u>	LP1	As compared to main competitors our company deliver goods in an undamaged state.	4.250	0.903
	LP2	As compared to main competitors our company deliver expedited shipments.	4.417	0.789
	LP3	As compared to main competitors our company cooperates with business partners to help do the job well.	4.375	0.835
	LP4	As compared to main competitors our business partners are more satisfied with our service level.	4.222	0.763
	LP5	As compared to main competitors our company provides additional services.	4.292	0.883
	LP6	As compared to main competitors our company offers competitive prices for services.	4.167	0.993
	LP7	As compared to main competitors our company offers greater percentage of on-time and accurate delivery.	4.306	0.854
	LP8	As compared to main competitors the accuracy of our logistics order processing is high.	4.139	0.955
	LP9	As compared to main competitors our company accommodate special or non-routine requests.	4.056	0.935
	LP10	As compared to main competitors our company offers unique solution.	3.903	0.939
	LP11	As compared to main competitors our company provides quicker responses to customers.	4.292	0.928

TABLE 1



3.3. RESEARCH DESIGN:

This research paper is based on Relational Resources as the independent variable (IV), Logistics Service Performance as the Dependent variable (DV), and Logistics Innovation Capability acts as a moderator respectively.

3.4. PILOT STUDY:

Pre-tests conducted with logistics firm’s managers. Interviews with a sample of ten respondents had been used to evaluate the constructs' relevance in the logistics environment, as well as a pilot test (n = 20) of the survey instrument. People working as middle and senior managers at LSP firms were the respondents of the interviews and pilot test. The items were reviewed for substantive validity in the pre-tests, and modifications were if needed, before to acceptance. Lists is mentioned above where all of the items that were used.

3.5. SAMPLE SIZE:

We will ascertain the sample size of 80 participants or respondents will be included in the quantitative research as per calculation. This sample size is calculated through G⁰ power software (Faul et al., 2007).

3.6. INSTRUMENTATION:

Each performance variable was graded on a five-point Likert scale, ranging from:

CONSTRUCTS	ITEMS	AUTHORS
RELATIONAL RESOURCES	5	Karia and Wong (2013) and Karia et al. (2015)
LOGISTICS INNOVATION CAPABILITY	6	(Keskin, 2006; Panayides, 2006; Lin, 2007) & (Braunscheidel and Suresh,2009; Wang et al., 2015)
LOGISTICS PERFORMANCE	11	Stank, T.P., Goldsby, T.J., Vickery, S.K. & Savitskie, K. (2003)

Table 2: Instrumentation

CHAPTER 4: RESULTS

4.1. DATA ANALYSIS:

4.1.1. Demographic Profile:

Male and female representation in the 80 usable samples was 78.8% and 21.3%, respectively. Table 3 displays the profile of the participants/ respondents and their companies. 5% of all respondents are in top management, followed by 30% in senior management, 40% in middle management, and 25% in junior management. More than 85% of these responders have been employed by the organization for more than five years. As a result, the reliability of the data gathered in the survey is supported by their position and expertise inside the company.

As regards to firm ownership, this Table 2 shows that, the vast majority of enterprises (83.8%) are privately owned. 2.4% of the remaining enterprises are state-owned, 5% are joint ventures, and 8.8% are foreign-owned. In terms of the company size, more than 45% of enterprises have between 101 and 500 total employees, while about 55% have more than 500. Karachi accounts for around 78.8% of the total, followed by Lahore with 10%, Islamabad with 2.4%, and other cities with 8.8%. Due to the concentration of third - party providers in Pakistan's main cities, such as Karachi, Islamabad, Lahore, and others, as well as the cities' rapid economic development, this sample distribution is considered to be realistic, reasonable and reliable. The companies' top three logistics services are land freight (53.8%), sea freight (23.8%), and air freight. (22.5%). Coverage of Courier shipping services from these major cities to Pakistan include purely (21.3%) national, (15%) international, and (63.7%) both i.e., national + international.

Table 3: Demographics:

Descriptive statistics (N = 80)

Demographics		Frequency	Percent
Gender	Male	63	78.8%
	Female	17	21.3%
Current Position	Top Management	4	5%
	Senior Management	24	30%
	Middle Management	32	40%
Working experiences in Current Position/ Organization:	Junior Management	20	25%
	Less than 1 year	21	26.3%
	1 - 5 years	34	42.5%
	6 - 10 years	17	21.3%
Ownership	11-15 years	4	4.9%
	Above 15 years	4	5%
	State-owned	2	2.5%
	Private	67	83.8%
	Joint venture	4	5%
Number of full-time employees	Foreign-owned	7	8.8%
	1 – 100	13	16.3%
	101 – 500	23	28.7%
Coverage of Courier shipping services	501 – 1000	7	8.7%
	Above 1000	37	46.3%
Coverage of Courier shipping services	National	17	21.3%
	International	12	15%
	Both (National + International)	51	63.7%

Demographics		Frequency	Percent
	Air freight	18	22.5%
Most commonly mode of shipping used in company	Sea freight	19	23.8%
	Land freight	43	53.8%
	Karachi	63	78.8%
Location of Company's Head Office	Lahore	8	10%
	Islamabad	2	2.4%
	Other	7	8.8%

4.2 Measurement Model:

The model has been evaluated using a structural equation modelling (SEM) approach with SmartPLS 4.0. According to the work of (Henseler & Fassott, 2010), PLS is a component-based approach that relies on three primary types of interactions. For instance, the outer/measurement model describes how latent constructs are linked to observables; the inner/structural model illustrates how latent constructs are linked to one another; and weight relationships lay the groundwork for identifying latent variable case values. According to Gefen et al. (2000), With PLS, a good model fit is indicated by a sizeable path coefficient, R-squared values that are within acceptable ranges, and internal consistency/construct reliability values of 0.70 or above. All the constructs' convergent validity analysis summaries were displayed in Table 3. For currently used scales, Cronbach's alpha of 0.70 was regarded sufficient, whereas a value of 0.60 was deemed adequate for freshly created scales. Existing Cronbach's alpha values ranged from 0.764 to 0.9, suggesting a strong confidence interval for the reliability estimate (Gefen et al., 2000). Composite reliability (CR) is often less cautious than the average variance extracted (AVE). Current study value varies from 0.524 to 0.615, while Fornell and Larcker (1981) suggested that AVE should be at least 0.50. According to (Gefen et al. 2000), the AVE values for the various constructs are not equally weighted measures, therefore the number often represents a minimum estimate of reliability. In addition, an AVE value of 0.524 suggests that the hidden variable indicator accounts for around 50% of the total variance. Composite reliability was indicated by rho A values above the cutoff (ranging from 0.802 to 0.933), content reliability values above the cutoff (ranging

from 0.841 to 0.933), and large factor loadings above the cutoff (indicating sufficient convergent validity). (Fornell and Larcker, 1981). The summarizing associations between the latent variables are presented in Table 4, with the square root of AVE serving as the header for each column. The correlation between latent variable scores and their corresponding rows and columns must be smaller than the square root of AVE in order to prove sufficient discriminant validity. Figure 2 displays the modelled measurement results.

Table 4 Reliability Testing

		Factor Loading	Composite Reliability	Average Variance Extracted (AVE)
RR	RR1	0.768	0.802	0.524
	RR2	0.723		
	RR3	0.763		
	RR4	0.818		
	RR5	0.773		
LIC	LIC1	0.839	0.882	0.615
	LIC2	0.797		
	LIC3	0.833		
	LIC4	0.807		
	LIC5	0.762		
	LIC6	0.750		

LP	LP1	0.830	0.933	0.565
	LP2	0.761		
	LP3	0.767		
	LP4	0.847		
	LP5	0.794		
	LP6	0.731		
	LP7	0.754		
	LP8	0.761		
	LP9	0.840		
	LP10	0.789		
	LP11	0.805		

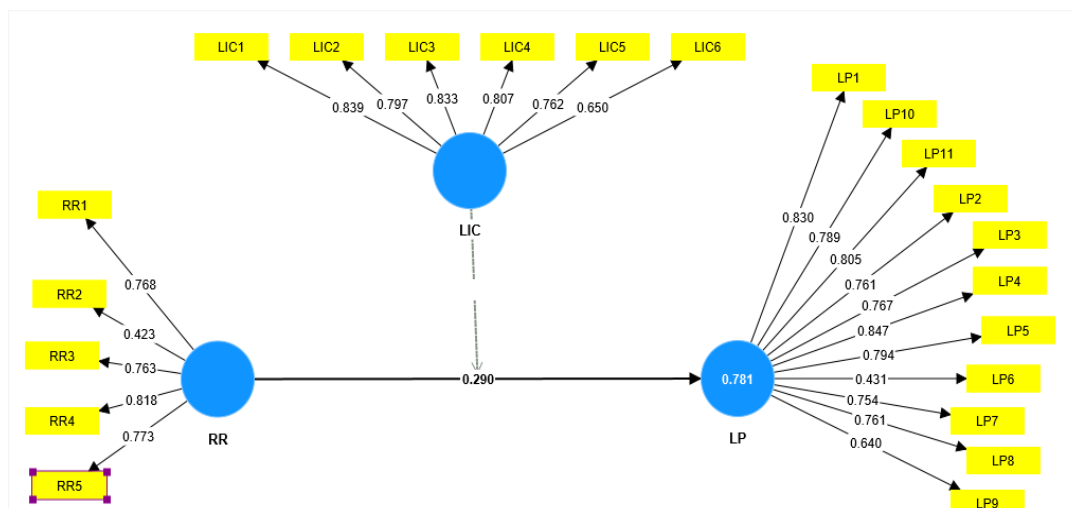


Figure 2. Algorithm

A confidence level shows the degree of dependability of survey results. Confidence intervals are often presented with a 95% confidence level ($p < 0.05$ for $t > 1.96$) in applied practice (Wang, 2018). A bootstrap procedure with 1,000 iterations was used to estimate the structural relationships in the model. The relevance of beta suggests that bootstrapping can be used to determine whether a link in PLS exists (Wang, 2018). Positive values show significant relationship between variables and negative shows negative relationship and value should not be more than 1 in path coefficient.

Table 5: Path Coefficients

	Path coefficients
LIC -> LP	0.555
RR -> LP	0.290
LIC x RR -> LP	-0.037

4.3. Discriminant validity

Discriminant validity, as defined by Hair Jr et al. (2014), is a method of gauging how significantly two constructs differ from one another. Discriminant validity is a crucial step in establishing the reliability of statistical tests and ensuring that each set of results is reliable and consistent, as it quantifies the degree in what ways one construct is distinct from another. Discriminant validity is a crucial step in establishing the reliability of statistical tests and ensuring that each set of results is reliable and consistent, as it quantifies the degree to which one construct differs from another (Henseler et al., 2015). The criteria set by Hair et al. suggests that the square root of AVE should be the highest of any inter-construct correlation, hence these values are displayed along the diagonal (2011).

To ensure the data is discriminant, one might apply a statistical method called item cross-loading analysis. Each item's cross loading within its own construct should be higher than that of any other item (Hair et al., 2011; Hair Jr et al., 2014). The table of these criteria for evaluating discriminant validity, which was introduced by Fornell & Larcker (1981). It is possible to use a statistical technique called item cross-loading analysis to make sure the data is discriminant. The cross loading of each item within its own construct should be greater than the cross loading of any other item (Henseler & Fassott, 2010).

Table 6: Fornell & Larcker

	LIC	LP	RR
LIC	0.784		
LP	0.852	0.752	
RR	0.787	0.808	0.724

4.4 Inner model measurement and hypothesis testing:

Analyses for internal model measurement follow those for external model measurement.

Hypothesis testing is another common application of the SMART PLS program.

Bootstrapping is a statistical method for evaluating hypotheses in Partial Least Square (PLS), as described by Haenlein and Kaplan (2004). It uses a resampling method, which entails selecting a sizable subsample (often 5000) from the full dataset.

4.5 Predictive relevance of the model

The ability of the internal model to forecast the endogenous construct is crucial to its quality, as stated by Hair Jr et al. (2014). The primary metrics for evaluating the validity of an internal model are the coefficient of determination (R^2) and cross-validated redundancy (Q^2) (Hair et al., 2011; Hair Jr et al., 2014; Henseler et al., 2009). Cross-validated redundancy, also known as Q^2 , provides information about the predictive relevance of the internal model and is a measure of how well the outer model performs (Hair Jr et al., 2014). R^2 measures the extent to which one exogenous (independent) variable affects another endogenous (dependent) variable (Hair Jr et al., 2014). According to Sanchez (2013), R^2 can be classified as high, moderate, or low, with values above 0.6 indicating high, 0.3 to 0.6 indicating moderate, and below 0.3 indicating low. Table 4.7 displays R^2 values, which are a measure of how well the model fits the data. Q^2 , also known as Cross-Validated Redundancy through the predict relevance, is another method for assessing the model's precision. Q^2 is calculated using the blindfold technique, and the result of Q^2 must be greater than zero. Table 4.7's Q^2 values, all of which are greater than zero, verify that the model is well-fit.

4.6 Hypothesis testing

The Structural Equation Modeling (SEM) method was utilized to examine two hypotheses posed in this investigation. Table 7 displays the results of the hypothesis tests, including the hypothesis loadings, probabilities, standard deviations, and T-statistics.

Table 7 Hypothesis Testing

No	Loadings	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Results
H1	0.810	0.084	9.683	0.000	ACCEPTED
H2	0.874	0.036	23.971	0.000	ACCEPTED

4.7 Structural Model

As structural equation model is adequate, the predictions can be tested on it. Positive and statistically significant relationships were found RR and LP ($b = 0.810$, $t = 9.683$, $p0.00$), SI and that LIC strengthen the impact of RR on LP ($b = 0.874$, $t = 23.971$, $p0.00$). Therefore, both H1 and H2 can be accepted as true. In Conclusion, we can say that the findings of this study show that relational resources have a favorable impact on 3PL providers' capacity for innovation.



Chapter 5: CONCLUSION

5.1. DISCUSSION AND IMPLICATIONS

5.1.1. Discussion:

The findings of this study show that relational resources have a positive influence on 3PL providers' capacity for innovation. It suggests that interactions between 3PL companies and their clients may be where innovation capability begins and grows. During their contacts with consumers, 3PL providers often innovate in the logistical services they offer. These connections enable 3PL providers to develop creative ideas and services and gain a deeper understanding of the unmet and hidden demands of their clients.

The empirical results presented in this research show a favorable relationship between innovation capabilities and 3PL suppliers' company performance. This suggests that innovation capabilities help 3PL providers build competitive advantages. According to Shou, when 3PL providers often experiment with new concepts, look for novel service delivery avenues, use creativity in their business operations, and create novel products, their profitability increases. (Shou et al., 2017a)

5.1.2. Managerial Implication:

The study gives 3PL managers numerous managerial ramifications. First off, our data demonstrate that 3PL suppliers' performance can be improved by their ability to innovate. This highlights the significance of innovation capability development for the company with a strategic goal for 3PL managers. 3PL companies confront growing rivalry as they operate in a very competitive market. For them to acquire and sustain competitive advantages, innovation can be a potent and strategic tool. Second, 3PL managers need to convey how fundamental relational resources are to the development of innovative capability. According to the study's findings, relational resources can boost 3PL providers' capacity for innovation. Therefore, it is advised that 3PL managers focus their efforts on the creation of relationship resources. For 3PL suppliers, close client ties are crucial sources of innovation. When working with clients, 3PL suppliers should pay particular attention to gathering innovative ideas.

5.2. CONCLUSION & FUTURE RESEARCH

This paper examines the connections between relational resources, innovation capabilities, and logistics performance, drawing on the resource-based view of the

organization. In particular, it emphasizes the moderating impact of innovation capabilities and focuses on 3PL providers. According to our research, relational resources have a beneficial impact on logistical performance, and innovative competence improves their relationship.

This research adds to the existing body of literature by examining the influences of relational resources/ cooperative relationships on logistics service performance via the moderating mechanism of logistics innovation capability. This study aims to extend its scope in so many ways. In numerous respects, this research aimed to add to the body of existing literature. First, we extend our analysis to look at the moderating mechanism through which relational resources influence logistics service performance because earlier studies focused only on the direct impact of relational resources on firm performance. Secondly, this study contributes to the existing logistics research on Pakistan by gathering and evaluating data from 3PL providers in that country. Our study offers a valuable perspective for the advancement of logistics research on emerging markets because Pakistan is a representative example of an emerging economy & to add more, we collect and analyze the data of 3PL providers in Pakistan which gives more clear insight to Pakistan's logistics provides. Since, Pakistan's logistics market is emerging day-by-day which has a great scope around the globe.

The limitations of this study are discussed in this paper's concluding section, along with suggested research initiatives. First off, because the empirical results are based on data from Pakistani 3PL firms, there is a chance that national characteristics will reduce their applicability elsewhere. This study's findings cannot necessarily be generalized to other nations. Second, longitudinal study methodology may be useful in future research to further examine the development of relational resources and their influence on the firm's innovation capability.

Thirdly, innovation capability is the main emphasis of this study as the intermediary between relational resources and business performance. Other capacities, such as operational capability and marketing capability, may be the subject of future research. It will also be interesting to look into the moderating effect of the interactions between innovation capability, competence, and production capabilities.

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