



DETERMINANTS OF TECHNOLOGICAL INNOVATION IN THE SUPPLY CHAIN OF TOURISM & HOSPITALITY INDUSTRY OF PAKISTAN

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Abstract:

The tourism and hospitality industries have grown significantly in some countries over the past few decades, while in others they have not. Additionally, Pakistan's supply chain has seen growth of 24.9% in 2020, before the COVID19 hit. In order to provide a roadmap for adopting the common practices that can affect the organisational performance of the tourism and hospitality industries, the

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purpose of this research is to analyse which technological integration and Technological innovation in supply chain. Respondents in Pakistan's supply chain make up the study's research population. Additionally, the research method is quantitative; surveys are the best way to gather the necessary data, and questionnaires are used to gather information from respondents. The worthwhile findings of this study confirm that the impact of Technological innovation in supply chain on operational performance in Pakistani organisations is significant and that such practices should be implemented in line with their original intent. The bias of staff and employees' perceptions affecting the data, the exclusion of technical staff, and the exclusion of other regional firms are all additional limitations of this research, which means that the findings may not be applicable to a wider range of regional firms in Asia.

Key Words:

Supply chain, Tourism, Hospitality Industry , Technological innovation, Organisational performance, Quality management.

Introduction:

Over the past few decades some nations showed stable pattern while some countries have increased their supply chain output. at a recent time the supply chain of tourism and hospitality industry has eased back as the risk for a downturn in worldwide supply chain increases. Supply chain of tourism and hospitality industry of Pakistan shows drop of 6.1% just because of a sharp dip in Food, beverages, airlines and overall hotel bookings etc. Innovation is the key to success in any business, especially in the tourism and hospitality industry. The supply chain of tourism & hospitality is a complex system with many players involved. It includes hotels, airlines, travel agents and other service providers who work together to deliver a great experience for customers. A successful supply chain must be able to innovate continuously and quickly adapt to changing customer needs.

Pakistani supply chain of tourism and hospitality industry has witnessed a spending of USD \$1 trillion in 2020 on technology; an analysis conducted by the Bureau of Statistics of Pakistan. According to Bureau of Statistics the budget spent on technology assimilation has risen by an average of 13.5 percent per annum in the past fifteen years (Tirmizi, 2022). This research has epistemological nature as it basically aims to learn about supply chain performance and the positive factors that may impact it. The variables this epistemological study will explore to find out their influence of technology assimilation towards supply chain performance.

As the main purpose of this study is to identify the most influential factors which effect Pakistani tourism and hospitality industry and their supply chain operations and the impact of technology integration towards the operations and processes. Study also identify the reasons of technology integration practices carried out by the corporations.

Problem Statement:

The research shows huge contrasts among tourism and hospitality related organisations , Recent research carried out by Abbas (2020) discusses the impact of Technological innovation in supply chain in different organisations, such as textile, food, and IT/IS and concluded that coupling Technological innovation in supply chain along with supply chain has to lead to a significant into the quality outcomes in these supply chain of tourism industry organisations . The research examined practices through which the integration of supply chain has led to increased innovativeness and enhanced performance.

In view of the literature review in the above section, it can be pointed out that numerous researches seem to cover the impact of integration of supply chain, however, no research has been found which has directly identified integration of supply chain along with core speed in supply chain, particularly in the tourism and hospitality related domain. Therefore, one problem that has been identified is that technological integration in supply chain to address issues is common across globe due to which hotels and corporations must come up with excellently aligned technological base for supply chain that will also be beneficial for the business itself. Another problem for businesses is that they seek to technological assimilation that is not up to date and needs developing (Olsen, 2020), main proposition was that introduction of technological assimilation by an organisation has a positive influence on operational performance.

Therefore, technological assimilation is essential to be built by any tourism and hospitality related organisations in terms of supporting supply chain otherwise; supply chain will not be developed properly.

Research Questions:

This research aims to answer the following questions on the basis on problem statement, which are as follows:

Q: Is there a significant relationship between integration of supply chain and technological assimilation in the tourism and hospitality industry in Pakistan.

Literature Review:

In the present times, organisations cannot disregard the term "quality management", which basically alludes to directly improving the quality, promoting productivity and reducing costs of different administrative plans and measures leading to an improvement in the performance of the business and increased competitiveness. In order to succeed in performance improvement, there needs to be an effective application of the firms' core environmental management structure and mechanism, which can be comprehended from the Contingency Theory (CT) introduced first by Thompson (1967). This research primarily focuses on the supply chain of tourism and hospitality industry and the performance by keeping CT as the core focus. Additionally, it is pertinent to note that Deming's theory of profound knowledge is also utilized as a supportive theory in this research paper. Furthermore, it should be most commonly recognized practices that are present in the literature are supplier management, process management, planning, people management, leadership and focus on stakeholders/customers, most of these concepts are heavily related to Technological innovation in supply chain practices and technological development.

2.1 Empirical Reviews:

One of the most quoted definitions of Technological innovation supply chain is given by the Demsetz (1973) as "management practices that address the issues of the current supply chain functions without limiting the capability to fulfill the needs of greater output". Technological innovation in supply chain" is the practice or usage of new and improved institutional arrangements, organizational structures, marketing methods, processes and products (goods and services) which have a positive impact towards the output in comparison to other significant options.

Furthermore, Technological innovation in supply chain can be described as to management modes, organizational structures, services, products or technologies that are utilized by organizations to accomplish sustainable development, it leads to a reduction in operational burdens and efforts towards sustainability and has a "double impact" i.e. and positive environmental impacts and knowledge spill-over externalities, which will in general pushes organizations to invest in green and sustainable practices.

2.1.1 Responsibility in Supply Chain:

Responsibility in supply chain can be categorised into two fundamental classes: technological innovation and operational innovation. Technological innovation in supply chain concerned with development of technological tools that can reduce the negative impact towards the environment. It accomplish a delicate balance between the production process and the environment.
H1: there is a positive relationship between responsibility in supply chain and supply chain performance.

2.1.2 Speed in supply chain:

The speed in supply chain achieved through incorporating products and technologies that help save raw materials and energy, implementing biodegradable pack-ageing and using energy efficiently.
H2: there is a positive relationship between speed in supply chain and supply chain performance.

2.1.3 Flexibility in supply chain:

A major part of flexibility in supply chain is in management innovation which can be described as adoption of new management systems or organisational structures, which improve management and production procedures to decrease negative environmental effects, the examples of such are comprehensive time conservation and environmental management systems. In the first place, technological drive can result in a differentiation strategy as opposed to a cost-effective one which basically leads to failure in operational innovation. Subsequently, these organisations are not the leader but instead tend to be the followers in operational innovation, in this manner can reduce costs and avoid risk by putting resources into green innovation investment.

H3: there is a positive relationship between flexibility in supply chain-and supply chain performance.

2.1.4 Competence in supply chain:

Competence in supply chain-focuses on a steady change and puts in control and strength by adapting formalisation or standardisation that would lead to an innovative change in the process supply chain system or the organisational structure from the current scenario to a totally new scenario, helpful for the improvement of sustainability development (Schroeder and Sakakibara 1994) . In this way, this research aims to claim that:

H4: there is a positive relationship between Competence in supply chain and supply chain performance.

2.2: Research Framework:

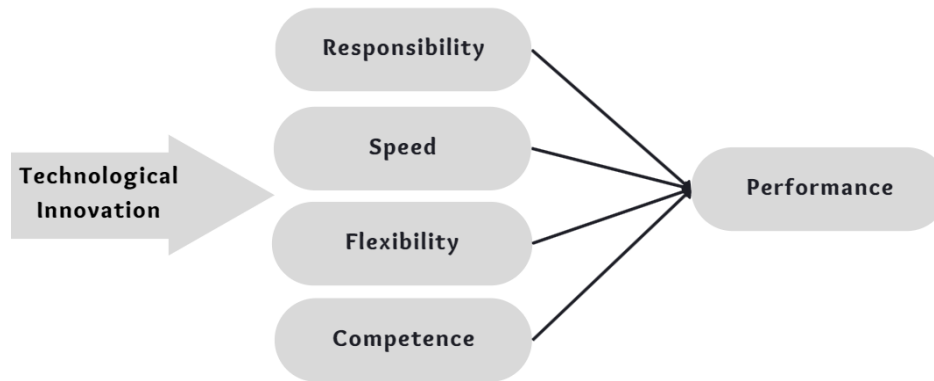


Figure 1: Proposed Research Framework

2.3: Hypothesis:

Therefore, the hypotheses proposed are as followed:

H1 = There is a positive relationship between Responsibility and Supply Chain Performance of a firm.

H2 = There is a positive relationship between Speed and Supply Chain Performance of a firm.

H3 = There is a positive relationship between Flexibility and Supply Chain Performance of a firm.

H4 = There is a positive relationship between Competence and Supply Chain Performance of a firm.

Methodology :

3.1 Research Problem:

An explanatory research is conducted to identify the nature and amount of cause and effect relationships as it aims to find the relation between the factors.

3.2 Research Approach:

Research approaches used is quantitative methods, in which the numerical and mathematical evaluation of data is carried out utilizing surveys, polls and questionnaires, to analyze and evaluate the existing statistical data along with objective measurements.

3.3 Research Design:

It is core of any research. It is a proposal, a guide, and a plan look into strategy to find solutions and to examine research questions. This research utilizes the correlational to model since it aims to discover the relationship between the variables. For this research causal research type has been utilized. A variation is observed in an independent variable that causes the changes in dependent variable.

3.4 Sampling Technique:

For this research, researchers took responses from a community because the individuals fit the profile of the people that are employed in the supply chain of tourism and hospitality industry.

3.5 Target Population:

Accordingly, this research only focuses on individuals who are employed in the supply chain of tourism and hospitality industry.

3.6 Sample Size:

In this research the sample size chosen is going to be 300 respondents who are employed in the supply chain of tourism and hospitality industry.

3.7 Data Analysis Techniques:

Moreover, for this research the questionnaires type of data analysis technique was adopted the collected data will be analyzed, coded and tabulated utilizing PLS-SEM model.

3.8 Data Collection Instruments:

The collection of data has been carried out utilizing the questionnaire. The questionnaire utilized consists of a 5-point Likert scale which changes from (1) strongly agree to (5) strongly disagree. For this research, the questionnaire has been debated and discussed between the supervisor and the researchers .

Results:

4.1 Demographics

Figure 3: Demographics					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	121	61.11	61.11	61.11
	Female	65	32.82	32.82	93.93
	Prefer Not to Say	6.06	6.06	6.06	100.0
	Total	198	100.0	100.0	

Figure 4: Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 and Below	41	20.70	20.70	20.70
	21 – 30	97	48.98	48.98	69.68
	31 – 40	32	16.16	16.16	85.84
	41 – 50	21	10.60	10.60	96.40
	51 – 60	7	3.53	3.60	100.0
	Total	198	100.0	100.0	

Figure 5: Designation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low Level	115	58.08	58.08	58.08
	Middle Level	57	28.78	28.78	86.86
	High Level	26	13.13	13.13	100.0
	Total	198	100.0	100.0	

Figure 6: Qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undergraduate	33	16.66	16.66	16.66
	Graduate	140	70.70	70.70	87.36
	Master or Above	25	12.26	12.26	100.0
	Total	281	100.0	100.0	

4.2 Reliability Analysis:

As shown by Cronbach's Alpha, reliability can be measured utilizing the Cronbach's Alpha value, which needs to be more than 0.6, for example, > 0.6, and this value is supposed to be accepted (Williams 2007). Cronbach's Alpha procedure was utilized to examine the internal consistency of the factors. As shown, Cronbach's alpha value needs to be more prominent than 7, which affirms the reliability and acceptability of the hypothesis. As can be seen from Table , the factors have values greater than 0.7, which shows firm reliability.

Constructs	N	Cronbach Alpha
Responsibility in supply chain	281	.751
Speed in supply chain	281	.776
Flexibility in supply chain	281	.794
Competence in supply chain	281	.797

Figure 7: Reliability Analysis

Discussion:

The researcher has gathered data from senior, middle and junior employees and staff of medium and multinational organizations in tourism industry situation in urban areas in Pakistan. Therefore, H1 is accepted (see hypothesis table). Another variable Speed in supply chain have a

b and t value of 0.218 and 6.827 and H2 is subsequently accepted. Given the result of this research, it tends to be said that the organizations in the sample successfully advantage from Technological innovation in supply chain and operational performance.

Conclusion:

It can be said that, given the scarcity of resources and other environmental and operational issues essentially faced by the supply chain of tourism industry organizations, the significance of Technological innovations. Technological integration is of specific importance to developing nations like Pakistan, where most supply chain of tourism industry organizations depend on fast moving operations. The Pakistani government has put huge investment to promote strategic organizational approaches which promote fast moving operations, the researcher set forward four variables that were examined by SEM.

Recommendations and Implications:

This investigation likewise clarifies that supply chain is similarly significant for multinational organizations as well as for medium-sized organizations. This research fills any gap in the available literature on the relationship between supply chain and operational performance, especially in tourism industry organizations in Pakistan.

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