THE INFLUENCE OF TECHNOLOGY DEVELOPMENT ON COMMUNICATION ON THE EXAMPLE OF A LOGISTIC SYSTEM

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Abstract

Today's technology era is taking a focal point on communication. It's seen that customer service is key in nowadays business world. With technology taking focal point in our education, health, social and business sectors respectively, it is because of development perspective in technology. Communication in logistic system have humans at the center. This study view technology development by examining technological systems, software, processes upgrade and applications on human to machines in the logistic system. To validate and make remarks, this study makes a dynamic tracking on the applicability, upgrade of various systems, process, software and applications of natural language processing tools with the used of STAR Model to demonstrate influence of technology development in the logistic system. The study uses questionnaires to collect data and draw conclusion and later on analyze the data collected literary in a hypothetical approach. Results show technology influence customer*supplier relationship and enhance positive needs and wants for both customers and suppliers.

Keywords: Technology communication development, STAR Model, Logistic system, & Natural language processing.

JEL Classification: -

1. Introduction

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Today (EI) emotional intelligence is very active amongst technological development software's and systems. As part of the new wave in technology development, NLP has come so close to human nature that can only be explained by the vast array of technology available. According to [4], he encourages educational concentration on emotional intelligence as part of support for technological development advances. Following technological development, computers will be able to comfortably recognize, respond, capture and sense human emotion especially stress, confusion, frustration, interest, anger, and joy by [1,2,3]. Technically NLP has already the opportunity to change the way we interact with computers and machines. From the technology development perspective, NLP is becoming the underlying tool for transforming data-driven to emotionally-driven, computationally driven and intelligence-driven endeavors, as they are capable of shaping and improving communication technology. According to [5], he talked of an emotional intelligent application developed for pupil's aged 8 and 12 years. The developed software application is based on emotional with aim to enhance, improved and evaluate emotional perception using emotion to understand and soften managing.

With the level of technology development and need for more data, new developments have image called big data, NLP with the support of big data will play a critical role in deriving business intelligence from raw business data that was not possible before. NLP is capable of extracting reasonable information from business owners through product data, sales and marketing data, customer support, brand reputation and the current talent pool of an enterprise. According to [6], most inside in logistic system can be done with support technological needs, NLP, and AI. This says it all that NLP will be the key to shifting many legacy companies from data-driven to intelligence-driven platforms that will definitely help humanity quickly get the insights he or she needed to make decisions verse versa.

1.2. Importance of Changes in workplace due to technological influence.

Remote offices have been observed due to technological influence. Has shape Collaboration amongst systems and different institutions with the help of ICT Tools. It has also been observed that leading is more convenient behind the screen than in person. One screen can monitor 100 employees effectively. Human resource activities have been reduced and office pressure also drop due to system applications

Technology has accelerated digital and contactless payments. Due to technological devotement, there has been relatively secure payment. Any fraud and theft are easily traced than in person payment. Increase instant confidentiality and confirmation have increase. This is very good as it promotes trust and confidentiality amongst institutions. Increase of Contactless payments with cards have increase. Due to technological influence, faster, effortless, and more secure transactions with increase sales throughput and a reduction in abandoned sales.

Online job fairs, conferences, entertainments. Due to technological development the cost of conferences has been cut down. Due to technological development, instant registration is possible. Before it was not possible to register for conference before two months' time. Today we can be registered for conferences same day and attend. Promotion is easier with online activities. Limited or no paper works and payment of security, organizers.

Growth of 3D printing advancement as a result of technological advancement. Recently 3D printing technology have been observed in surgical units through the using of masks by doctors operating individuals who have been tested with COVID-19 virus.

1.3 Natural Language Processing and technological influence

Technological advancements have updated NLP to a three-phase system referred to as emotional intelligence, computational linguistics and artificial intelligence. According [7-8], said the best option to problems is to approach or turn to natural language processing. Natural language processing is very good in analyzing and I believe it will be a good center for problem. They concluded that NLP is confidential, and information remains within.

With the used of chatbots, smart Google translator, smart voice recorders and smart FAQ

- A) **NON-VERBAL CLIENTS.** Assessing non-verbal clients through Chatbots and Frequently Asked Questions. 1) Respecting client's personal value can be possible through Chatbots and Frequently Asked Questions. It is difficult to differentiate personality. It is good bases for equality in treatment. 2) Adequate time for clients to make their choice. This gives ample time to communicate with clients. Here there are no rouses and no queuing. No first come first safe bases. No referential treatments. Therapeutic communication techniques should be able to use open ended questions, clarification, exploring, paraphrasing, reflecting, restating, providing leads, summarizing, acknowledgment, and the offering of self to achieve non-verbal client rule
- B) VERBAL CLIENTS Assessing verbal clients with the help of Smart voice recorders and smart google translators. 1) Uses therapeutic communication techniques to supply client support feedback. 2) Help clients verbalize their feels be it fears, discomfort, worries, doubts with help of smart recorders. 3) Examine the effectiveness of client communication by detecting efficiency and effectiveness in using and utilizing Companies products. Therapeutic communication techniques should take active rules such as active listening, silence, and deep focusing to achieve verbal client rule

2. Business dimensions of technology development

Advances in technology over the past decades. For this length of time a number of phenomena have emerged that have been able to combine an existing rapidly and radically transformed systems to readily to used businesses through a construct customer services and product level.

Nowadays the gap between technology and between is so close like never before. According to [9], said digital entrepreneurship is a new way of doing business that paves the way for economic development. Developing Technology work alongside all business areas that really make up and built more advance skills readily available for day-to-day businesses. By embracing new developments in digital space and communication medium. It is very important for modern day disciplines to understand customer focus, best revenue generation methods, and product development approach.

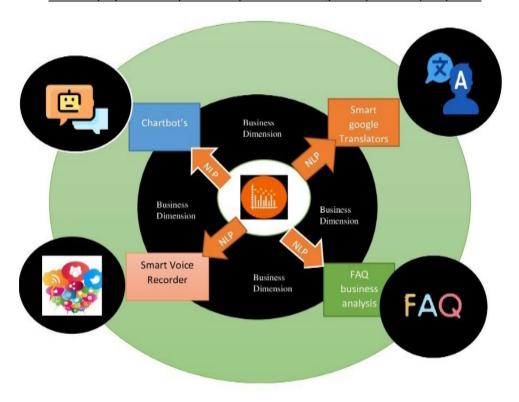


Figure 1. Business dimensions of technology development. Source Owner

Figure 1 explained that the best strategic developments are those that are developed to focus on business strategies with main focus ready to support a company's business vision, for (IT) implementation or oriented needs to create innovative e-business systems that focus on customer and business goals. Modern business uses chatbots, FAOs, smart records and videos and translators. Detailed as follows:

Technological influence of Chatbots on Business. Chatbots can help deliver a large return on investment for minimal effort for business. Chatbots help cut business cost of hiring a business analysis, Chatbots help business to know what customers want. Chatbots help keep Company's customers engaged with its brand. Chatbots are Companies optimal tools for organizations to learn customer expectations

Technological influence of Smart Google translator on Business. It is available 24/7. Helping companies to making business deals across different cultural level. It helps business negotiations very easy. It helps give access to everyone broke barriers and limits of time to spend learning before usage. It helps spread business information. It reduces information monopoly for native speakers.

Technological influence of Smart voice recorders on Business. It improves factual precision. It is an indispensable business tool. It lay a groundwork for accuracy. It fosters proficiency

Technological influence Smart FAQs on Business. Teaches customers Company's products and system work. Give customers Knowledge base on Companies products. It help customers with self-service support. It helps customer's walkthrough the company system webpage. Follow up of keyword search Identification,

2.1. Smart city concept and technological development

According [10] the Smart Cities can be abbreviated as Sustainable Management Action Resource Tools for Cities. It is perfectly true that smart city is exactly what these publisher said but we think that smart city can be STANDERD MANAGEABLE AVAILABLE RESOURCE TECHNICS. With the used of smart city integration circle tools which is not just about sustainable management action resource tools but it is a standard manageable resource technic already in our disposal to make good use of for a better



Figure 2. Smart City Concept on Technological advancement, Source owner (2021)

The expansion of big data and the evolution of Internet of Things (IoT) technologies have played an important role in the feasibility of smart city initiatives. Big data offer the potential for cities to obtain valuable insights from a large amount of data collected through various sources, and the IoT allows the integration of sensors, radio-frequency identification, and Bluetooth in the real-world environment using highly networked services by [10,11,12]. According to [13-14], said the essential components of urban development for a smart city should include smart technology, smart industry, smart services, smart management and smart life. The Internet of Things is about installing

sensors [15-16], with the GIS technology where we can used to monitor, observed and analyze the economy, political and social systems and environments, we have also observed that we can't add nor subtract, with the available topography. Smart cities run on geographical systems and GIS is a perfect solution for a better smart system. We are bound by nature to manage the standard available resources techniques to improve our environment called smart city. S=standard (land surface, water, human beings, natural space, and plants) M=manageable (Government, organizations, institutions, enterprises, businesses A=available (waste deposit, infrastructure, healthcare, R=resource (funds and systems (logistic systems, transport system, healthcare systems, T=technics (GIS systems, ICT tools, IoT, and energy supply). The concept of smart city integration is here to build a strong corporation of different elements. These elements should take into consideration the advantages other elements will have on human existence. A smart city is a system built for human habitation

2.2 Analysis of Process Flow Mapping in logistic system

This part of the study explains how new technology implementation have influence communication disorders in logistics system on the sample application of process flow mapping. This section uses the design process to demonstrate the influence of technology on communication in an optimized and digital manner.

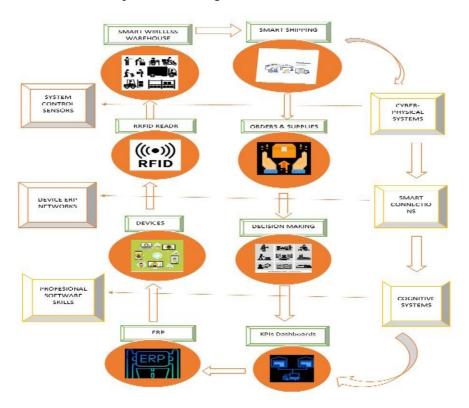


Figure 3. Cyber-physical-elements process integration. Source; owner

Technological Cyber-physical-elements of various telecommunication systems. This are systems implementation items that build-up the internal processes and external processes that forester communication between human and machines to work positively together.

Wireless Connectivity of a Logistic system. This stage deal with data and symbols. Here physical-human-machine relationship is observed. With the application of Flexsim and natural language processing and enterprise resource planning is linked together. Here there is the existence of Radio Frequency Identification system (RFID), electrify enterprise planning system (eERP), Natural language processing (NLP), Simulation system (Flexsim) and Key performance indicators.(KPIs)

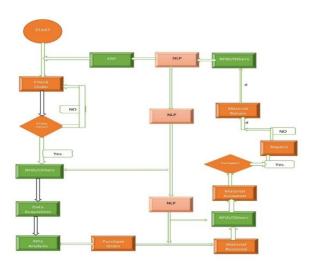


Figure 4, Process flow. Source; Owner (2021)

The cyber-physical process integration, computation integration and real-life physical elements allow circulation communication in the logistics processes and systems.

2.3. Application of STAR model and natural language processing in logistics process flow

The coming to play if AL, internet of things, emotional intelligence and other software systems of internet, have place communication at a different level. Nowadays the option of chatting, making business, shopping, and sending emails are probably the most noteworthy influence of technology on communication. This has caused a lot of changes within the

logistics processes. Systems have now to put human feelings and interaction with the core needs of business and software processes. The diagram below given steps that link process flow, natural language and star model.

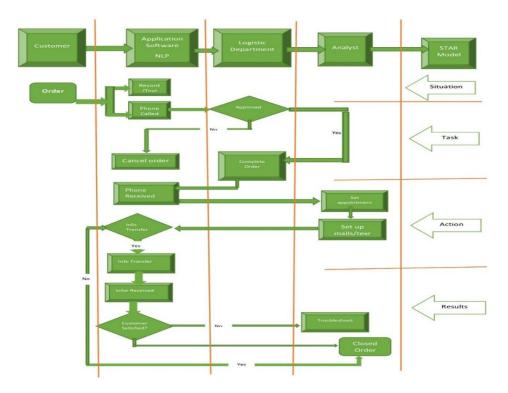


Figure 5. Integrated STAR model. Source; owner; (2021)

From the above diagram, STAR method is structured in a manner of responding to a behavioral-based question from customer to structure s system or artificial intelligence robot by

Discussing the specific situation, task, action, and result of a online order of goods or products.

Situation: Describe the situation that a customer is in or the task that he or she needed to accomplish. Here enough detail is required for the executive motives either by system software or individual.

Task: What goal is the system or customer relations working toward?

Action: what action is taken to address the situation with an appropriate amount of detail and keep the focus? What specific steps are to be followed?

Results: The outcome of your actions. What happened? How did the event end? What is accomplish? What is learn? Make sure multiple answer contains positive results

3. Method of Examining Technological Development Influence on Logistic System.

This section covers the research methodology. Research methodology provide description of all the steps and procedures that are/were/is used in completing the study.

Location of Study. The location is in Poland precisely Krakow, AGH University of science and technology. This study has analyzed the situation of technological development in communication with regards to logistic system. As the population grows in size so too the need to think of future problems relating to demographic situation. To map the technology evolution path that summarizes the overall research process, this study uses scientific reports, journals, monologues and literature integration of citation information and topic model to ascertain evolution path of technological development.

Research Questions used. This section concern with the research question used to guarder real facts to ascertain the influence of technology on communication on the example of logistic system. With the sampling of this research questions, it wouldn't be possible to understand the real impact of technology on communication. These questions help this study to be able to apply hypothesis without worries to give the body explanation of the nature of business world in view and light of communication. The following research questions were used: 1) Has communication change due to technological advancements? 2) Has technology advancement made communication in the logistic system cheaper? 3) Has technology change the way we interact and run our business activities? 4) Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system?

Instruments used in the Study. The indicators used to measure the theoretical constructs are based on an extensive review of related literature. Items tapping the construct "Limited Number of Suppliers" measure the extent to which firms increasingly emphasize close, relational contracting with a smaller number of dedicated suppliers and customers. The indicators of "Information Technology" are opera ionized to denote the presence of direct computer-to-computer links, electronic transactions and inter-organizational coordination achieved using electronic links, as well as the use of advanced information systems to track or expedite shipments. Before data collection, the content validity of the instrument was established by grounding it in existing literature

Population of Sample Area. The population sample of this study consists of three groups that is Men, Women and Others. They responded to YES, NO and Don't Know. The sample size 3 groups of people drawn from the defined population of different age groups and it is arrived at by using data questionnaires.

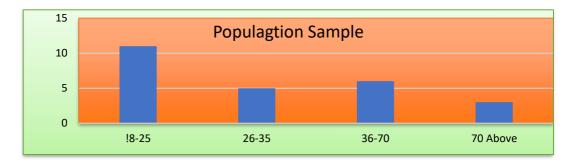


Figure 6. Population structure, source; Owner (2021)

From Figure 6 above. There is a total population sample of 25 respondents. The population was structure into different age groups of 18-25, 26-35, 36-70 and 70 years old above respectively. This different age group answered 4 questions about technology and communication disorder.

4. Result Interpretation and Analysis of findings

This section is made up of presentation and discussion of results, data interpretation, conceptual framework and hypothesis analysis of technology influence on communication in logistics system.

Data Interpretation. In this section this question was ask "Has communication change due to technological advancements?" to guarder respond to the research question. The following data was obtain from the survey

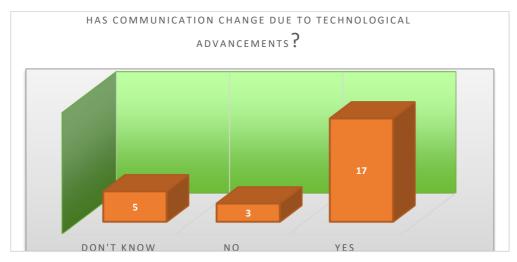


Figure 7. Communication changes due to technological advances? (Source owner)

From (fig 7), when the above question was asked, out of 25 respondents for the survey, 17 persons said Yes communication has change due to technological advances, 3 persons said no communication has not change due to technological advances and 5 people said they don't know if communication has change due to technological advances or not. Based on the respondent majority stand for the fact that communication has change due to technological advances.

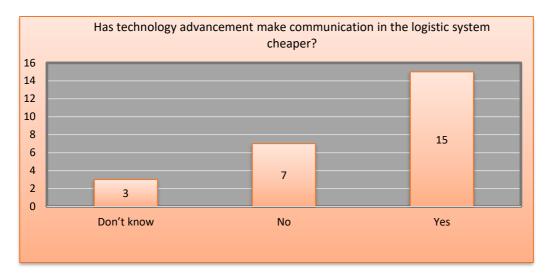


Figure 8. Did technology advancement make communication in the logistic system cheaper? Source: Owner

When the asked, "Has technology advancement make communication in the logistic system cheaper?" Out of the 205 respondents, 15 said yes technology advancement has made communication in the logistic system cheaper, while 7 respondents said no technology advancement has not make communication in the logistic system cheaper and 3 respondents said they don't know if or not technology advancement has made communication in the logistic system cheaper.

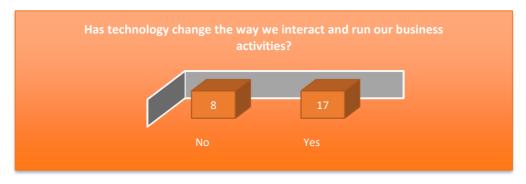


Figure 9. Has technology change the way we interact and run our business activities?

From the above (fig 9) when question asked "Has technology change the way we interact and run our business activities?" Out of 25 respondents, 17 respondents said yes that technology has change the way they interact and run our business activities while 8 respondents said no, technology has not change the way they interact and run our business activities?

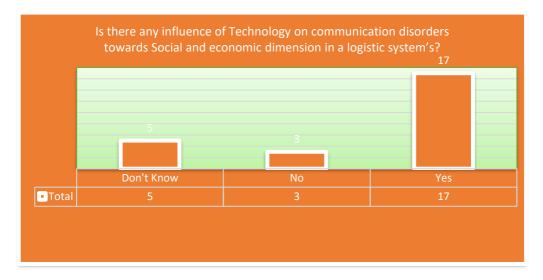


Figure 10. Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system? Source; owner (2021)

When the question was asked "Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system's?" Out of 25 respondents, 17 said yes there is influence of Technology on communication disorders towards Social and economic dimension in a logistic system's, 3 respondents said there is no any influence of Technology on communication disorders towards Social and economic dimension in a logistic system's while 5 respondents said they don't know if there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system. From the question if need be the companies involve can run a quick and fast advert to sensitize and make more customers see influence of technology.

Conceptual Framework and Hypotheses Analysis of Technology Influence on Communication in Logistic System. With regards to the conceptual model of modern view of technology communication and logistic systems, the study uses different research questions that were directed towards inter-organizational logistics system and NLP. The relational viewpoints are supported by research questions having a strong understanding of the customer and supplier. This conceptual framework hypothesis analysis applied in this study can also be seen in paradigm of strategic management theory which stresses the need for effective rules and regulations to be modified or developed to effectively satisfy customer needs and wants. Within this study, a collaborative paradigm is presented where

research questions support the objectives and arms of the study. The study view modern business model in a logistics world in a situation where system networks of interdependent relationships are more productive, profitable and developed in a way that helped fostered deriving goals with greater and mutual benefits from remote services. In the following subsections, the paper presents. Following response from sample survey questions. Over warming majority state that technology has influenced changes on communication. The study will use the diagram below explore logic of the substantive relationships between customers and supplier with the help of research questions in a hypothetical dimension.

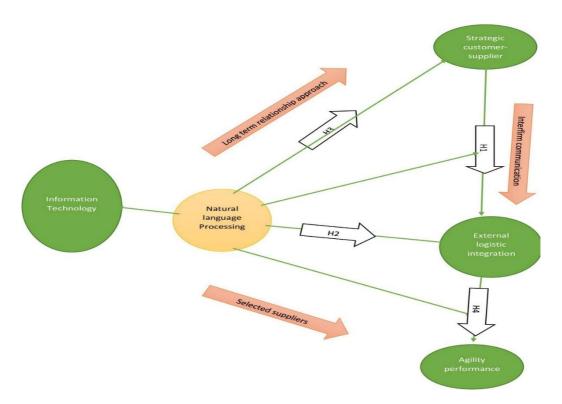


Figure 11. Customer-supplier integration of logistic relationship

From figure 11, a model of customer and supplier relationship is examined with the support of finding and develop research questions. The model present hypotheses abbreviated H1, H2, H3, and H4.

H1=Has communication change due to technological advancements? Information Technology and Logistics Integration.

H2=Has technology advancement make communication in the logistic system cheaper? **Supporting strategies**

H3=Has technology change the way we interact and run our business activities? **Performance agility**

H4=Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system? **Performance determinant**

Failure of any questions to issue a positive respond demonstrated the failure of customer and supplier relationship with the effective closed implementation of NLP on communication needs of logistic system. Modern technology is adopting a relational approach between the supply management chain members and customers through creating a profit for profit or win—win scenario for both customers and supplier in a logistics firm. Convenient, accuracy, instant supply and adjustments to customer needs for higher sales and profits is one of the approaches. For this case, the study is interested in three critical factors 1) long-term relationship approach, 2) Inter-firm communication base on NLP tools and 3) number of suppliers to customer's ratio that can foster trust and commitments in the domain of strategic customer—supplier telecommunication relationship. Increasing supplier contracts can easily become a long-term strategy that makes it possible for many suppliers to release data regarding their processes, quality performance and even cost structure to the customers.

H1: Has communication change due to technological advancements? Information Technology and Logistics Integration. More than ever before, information technology is allowing the supply chain at every point, transforming the way exchange-related activities are performed and the nature of the linkages. Figure 7, when question was asked, has communication change due to technological advances? Source; owner

From (fig 7), when the above question was asked, out of 25 respondents for the survey, 17 persons said Yes communication has change due to technological advances, 3 persons said no communication has not change due to technological advances and 5 people said they don't know if communication has change due to technological advances or not. Based on the respondent majority stand for the fact that communication has change due to technological advances.

This indicates a strong customer and supplier relationship. This to say NLP and technology advancement is positively affecting consumer needs and wants and therefore improving profitability within logistic supply chain.

H2: Has technology advancement make communication in the logistic system cheaper? Information technology is very essential in supporting strategies as well as operational logistics decisions.

In figure 8, When the asked, "Has technology advancement make communication in the logistic system cheaper?" Out of the 25 respondents, 15 said yes technology advancement has made communication in the logistic system cheaper, while 7 respondents said no technology advancement has not make communication in the logistic system cheaper and

3 respondents said they don't know if or not technology advancement has made communication in the logistic system cheaper.

Seamless relational flows are achieved bas majority of respondents indicate a motion of a positive sequential and linear chain of information exchange with a set of simultaneous information exchanges between customers and suppliers. The majority represent a wide span on communication. This indicates Information technology enhances efficiency in communication flow.

H3: has technology change the way we interact and run our business activities? Performance agility is examined here with regards to customer and supplier relationship. Agility refers to supply chain partners' superior performance in flexibility, delivery, timely manner and responsiveness for delivery.

From the above (fig 9) when question asked "Has technology change the way we interact and run our business activities?" Out of 25 respondents, 17 respondents said yes that technology has change the way they interact and run our business activities while 8 respondents said no, technology has not changed the way they interact and run our business activities?

When considering greater customer loyalty and likelihood of repeat purchase, customers' increased willingness to pay premium prices for high-quality products and services; and supplier increased ability to continually improve the firm's product-delivery system and effectively adapt to customer-supplier strategic requirements. We can say it is positive as majority of respondent way-in positively for the fact that their interactions and way they run things have change. The study view increase interaction as good relationship between customer and suppliers.

H4: Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system?" An examination of performance is examined here.

When the question was asked "Is there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system's?" Out of 25 respondents, 17 said yes there is influence of Technology on communication disorders towards Social and economic dimension in a logistic system's, 3 respondents said there is no any influence of Technology on communication disorders towards Social and economic dimension in a logistic system's while 5 respondents said they don't know if there any influence of Technology on communication disorders towards Social and economic dimension in a logistic system. From the question, if need be the companies involve can run a quick and fast advert to sensitize and make more customers see influence of technology.

These section helps the author measure how relevant technology is to customer and logistic firm base on good relation. Majority of respondents show a positive relation between the

supplier and customers. This section help indicates to potential customer and future customers and suppliers that effective engagement on technology can help them quickly and effectively achieve their aims and needs and wants.

5. Conclusion

As this study collected data from a sample questionnaire, respondent in each responding questions was critically examined and compare with systems according to views and information collected. With the available literature review, hypothesis was applied to ascertain the result from questionnaires. A real scenario according to H1, H2, H3, H4 analysis of customer-supplier integration system was critically examine that determined importance and influence of technology on communication to logistic firms. It is concluded that technological implementation on logistic system is very essential and help businesses to make huge benefits without going into competition and making monopoly advantage over other firms. According to this test, if common method influence exists, (1) a majority factors emerge from analysis with view that technology doesn't influence customer-supplier relation of all survey items (positive results), or (2) factors accounting for most of the common variance existing in the data emerge that technology influence customer-supplier relation (positive results) and a conclusion will take into account majority of positive outcome supporting motion. In the study, majority of questions captured greater percent of the variance in the data. As no single factor did emerge with majority factor indicating less importance of technology on communication on logistic system. Therefore, technology development influence communication in logistics.

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