DOES INFORMATION TECHNOLOGY COMPETENCIES AND FLEET MANAGEMENT PRACTICES LEAD TO EFFECTIVE SERVICE DELIVERY? EMPIRICAL EVIDENCE FROM E- COMMERCE INDUSTRY

Tariq Mehmood

Mont Rose College, UK, doctortm@gmail.com

Abstract

Competency Model requires knowledge, skills, and abilities needed for fleet and distribution management for ecommerce industry to maintain successful movement of materials between parties within their supply chain to achieve high levels of reliability and cost-efficiency. This research aims to investigate the relationship and impact of information technology competencies and fleet management practices to achieve effective service delivery. A quantitative approach used to examine the model validation. The methodology of this research follow the descriptive correlational design. A real data records used to collect empirical from e-Commerce industry. Results of analysis proved the relationship and impact of information technology competencies and fleet management practices to achieve effective service delivery, as a result of analyzing the data the hypotheses. Some recommendations regarding information technology competencies and its dimensions should be enhanced, also, incorporating the latest innovations to facilitate fleet management.

Keywords: Information Technology, Fleet Management, IT Competencies, e Service Delivery

1. INTRODUCTION

Effective service delivery is at the center of logistics as it reflects the physical movement of materials between points in a supply chain environment. High customer expectations and lesser tolerance for inadequate performance creates a competitive environment for operating a highly effective Market place, which eventually forces organizations to achieve high levels of customer experience and cost-efficiency. (Giaglis et al., 2007). In order to achieve that we have an underlying dependency on the fleet management practices which is basically the function that oversees, coordinates and facilitates various touchpoints within the supply chain right from the period when customer apply for the order till it reaches his delivery location (the last mile journey). (Joerss, M et al.,2016). Effective fleet management practices aim at reducing and minimizing overall costs through maximum, cost effective utilization of resources and better customer satisfaction results. Some of the capabilities that are important to be noted are: customer service, asset management and accurate and timely data reporting

For this paper, we have taken the online e-commerce website "Boutiqaat.uae" which is an online makeup showroom offering a mix of beauty and fashion items from over 700 international brands, exclusive local brands, where consumers can find personal suggestions from the most famous celebrities in the Middle East and shop their choices on-the-way. "Boutiqaat" (2019). After a successful inception and initial success, Boutiqaat is experiencing increased Customer Complaints, about their orders not delivered on time, returns are increasing, which affects the cost, Sales & Reputation of the organization. In this research we will look at how precisely the influence the independent variables will be having over the dependent variables, as this will help us to iron out the root cause of why it is happening and what can be done by the organization to improve the situation. (Kommi, 2019).

2. THEORETICAL FRAMEWORK

2.1 Information Technology Competencies

The IT Competency Model identifies the knowledge, skills, and abilities needed for workers to perform successfully in the field of information technology (IT). (Employment and Training Administration, 2012)

Personal Effectiveness Competencies

Show skills to collaborate with people from different backgrounds. Displaying recognized habits in culture and life and maintain a positive attitude on the job. Also, showing a desire to work and revealing the ability to adjust to recent, different or altering requirements. demonstrating responsible attitude at work and showing a desire to learn and apply new skills and expertise. (Employment and Training Administration, 2012)

Academic Competencies

Interpreting written paragraphs in job-related documents and collecting information using standard English, then composing written reports. Often, use mathematics to convey ideas and solve problems, applying logic, reasoning, and evaluating to resolve issues. In addition, pay full attention to what someone says, and communicate very well in English to be understood by everyone. (Employment and Training Administration, 2012)

Workplace Competencies

Awareness of the basics of business, patterns and economics. Working with others in partnership to complete job assignments and create innovative solutions. In addition, organizing and prioritizing assignments to efficiently control the time and execute assigned tasks. Moreover, the application of logical thinking skills to solve problems through the development, assessment and implementation of solutions. (Employment and Training Administration, 2012)

Technical Competencies

Using technology to monitor and safeguard data collection, management, configuration, preparation and distribution. The processes, hardware, and software used to improve communication among individuals, computer systems, and devices. The method of writing, checking, troubleshooting, and managing an organization's computer program source code. (Employment and Training Administration, 2012)

2.2 Fleet Management

Fleet management's problems are shifting beyond cost-effectiveness toward superior customer satisfaction, versatility and sensitivity to requirements that differ at an unimaginable time scale even a decade ago. Classical fleet management approaches have struggled extensively with cost efficiency concerns over the past 40 years by creating routing plans in a wide variety of practical problems. (Giaglis et al., 2007)

Scheduling &Tracking

However, the use of an initial schedule, although it is not appropriate to resolve incidents that are likely to occur during the implementation of the schedule and have a substantial effect on the performance of the program. Typical examples are customer orders that arrive in real time and should be served by vehicles already on route as well as disturbances due to traffic delays, Breakdowns. The ability to deal with these cases in a satisfactory manner is essential for the profitability of logistics and transport related operations. (Giaglis et al., 2007)

Operation Management & Route Optimization

In taking advantage of recent developments in satellite and mobile networking technology,

the crucial problems of complex fleet management can be tackled in realistic systems. In particular, satellite location recognition systems using the Global Positioning System (GPS) and mobile terrestrial communication networks, such as Terrestrial Trunked Radio (TETRA). Allow fleet operators to track plan implementation and manage operations in real time, thereby enhancing fleet performance. (Olson)

2.3 Efficient Service Delivery

Good distribution management is the backbone for ecommerce companies to succeed, and those with a successful solution in place are the ones who are likely to prosper.

Customer Retention

Loyalty to customers is important for all forms of companies, whether you are selling clothing, furniture or TVs. keeping the customers you have worked so hard to acquire is crucial to long-term growth. (Payne & Frow, 2015)

Improve Business Reputation

Organizations with a reliable and timely delivery process are the ones who would have a number of favorable feedbacks on the website and are likely to be recommended to family and friends. (Payne & Frow, 2015)

Increase Efficiency

Getting a clear and organized distribution plan in place helps improve the company's productivity and reduce the time you spend handling packages. (Payne & Frow, 2015)

Customer Satisfaction

Many people want to purchase products from ecommerce companies because of the ease provided by the online shopping. Customers are not required to leave their home to purchase items, rather they can remain indoors, purchase it from the comfort of their own sitting room and have it shipped in few days, sometimes even sooner, to their front doors. Moreover, if problems occur and online shopping becomes tougher than visiting the high street, customers do not hesitate to purchase their items from another store. (Payne & Frow, 2015)

2.4. Operational Definitions

2.4.1 Information Technology Competencies

Knowledge of IT (fundamental principles, frameworks, platforms, tools, and technologies), IT (hardware, applications, and services), extensive use of IT in other fields, and specific positions of IT professionals. (Employment and Training Administration, 2012)

Personal Effectiveness Competencies

Set of skills to collaborate with people from different backgrounds and show a willingness to work. Displaying responsible attitude at work and showing a desire to learn and apply new skills and expertise. (Employment and Training Administration, 2012)

Academic Competencies

Understand the details of written documents and write reports using correct language that are easily understandable. Using suitable mathematical equations, methods and apply basic scientific concepts to work-related issues. (Employment and Training Administration, 2012)

Workplace Competencies

Establish constructive relationships with staff and define team goals. Find new ways to coordinate work area or organizing tasks more efficiently and effectively to achieve tasks. (Employment and Training Administration, 2012)

Technical Competencies

The employee's abilities to perform tasks in a specific industry like integration of system and software components. (Employment and Training Administration, 2012)

Technology has a major effect on industrial processes, from physical elements to information and interconnection networks, contributing to extensive industry digitalization. Logistics is actively engaged in the digital transformation that is revolutionizing globalization and transforming the supply chain with creative technologies that facilitate the change to a modern business model that is more effective and sustained. This development evolves into new programs that guarantee production customized to the type of business and customer, with a view to reducing stocks and storage in pursuit of more effective management according to demand, optimizing transport routes and to improve coordination between all involved teams.

2.4.2 Fleet Management

The physical movement of materials between points in a supply chain to achieve high levels of reliability and cost-efficiency. A qualified fleet manager has to ensure that there is no interference between different activities on the fleet. (Gitahi & Ogollah, 2014)

Scheduling &Tracking

Scheduling is to identify which vehicle is to be allocated to new facilities as well as the new route for the chosen vehicle. In addition, tracking is knowing the vehicle status and location and aid with the implementation of new emergency calling plans for vehicle assignments. (Giaglis et al., 2007)

Operation Management & Route Optimization

Route optimization is an algorithm that runs for the duration of a time period on the current static problem to accommodate as many customers as possible while reducing running costs and allowing dispatchers to direct emergency vehicles to emergency calls. In addition, operation management is the ability to generate a collection of routes that are slack enough to satisfy the immediate demands while the routes are being performed. Also, Determine the number and types of vehicles needed and operate the vehicles at different locations. (Giaglis et al., 2007)

Companies are always aiming for a better way to transfer their products to distribution outlets or consumer delivery points from any manufacturing hubs.

Successful fleet management allows you to maximize customer satisfaction with improved last mile delivery experience, and on-time delivery to your customers. Reduce overhead costs and improve delivery efficiency with automated package sorting and integrated route planning system to increase e-commerce supply chain optimization. Electronic proof of delivery (EPOD) for consumer burden reduction and process digitization. (Locus, 2020)

2.4.3 Effective service delivery

Effective Service delivery refers to the actual delivery of a service and products to the customer or clients. It is therefore concerned with "where, when, and how" a service product is delivered to the customer. The Effective service concept defines the "how" and the "what" of service design, and helps mediate between customer needs and an organization's strategic intent. (Martins & Ledimo, 2015)

Due to competition in the business, Organizations are forced to find new innovations method which in turn open the organizations to adopt new ideas through the latest technologies, resources, skills & Systems. In other words, Effective service delivery means the overall process of developing new and efficient service offerings to the customers. (Martins & Ledimo, 2015)

Customer Retention

When developing the relationship with a client, there is greater shared understanding and cooperation, creating efficiencies that reduce the operating costs. Pleased consumers are more likely to refer to others, because the cost of attracting these new customers is significantly reduced, which facilitates profit generation. (Payne & Frow, 2015)

Business Reputation

Information on the overall brand image and the valuation of the brand which creates an exceptional asset in terms of their customers 'lifetime value. The attitudes of customers towards the brand thus have a major effect on the company. (Payne & Frow, 2015)

Efficiency

Efficiency is minimizing the cost of materials and optimizing the use of resources while maintaining the necessary level of service. Eventually, an increase in efficiency generates a dramatic and positive effect on profitability to improve its competitiveness. (Begashaw & Temesgen, 2018)

Customer Satisfaction

Customer satisfaction is a measure of how an enterprise's goods and services meet or surpass consumer standards that decide whether the partnership is continuing or not. When consumers are more happy and secure in their partnership with a supplier, they are more likely to give a greater share of their business or wallet to the supplier. (Payne & Frow, 2015)

According to the latest statistics from the United Nations Conference on Trade and Development (UNCTAD, 2020), if there is one thing that is crucial to the fate of the logistics business, it is the growth of e-commerce, an industry whose global revenues grew 13% in the year of 2017 reaching a turnover of around 29 billion dollars. “The illuminating data show the sustained growth of E-commerce and the existence of a supply for digital consumption that it is increasingly varied and innovative, where logistics functions as an enabler and catalyst,” stated García. (Technology Transforms Industrial Mobility, 2019)

E-commerce disruption has forced the logistics industry to reinvent itself, introducing fast resupply solutions, tools that require high productivity in warehouse operating processes, transport management systems (TMS), etc. Along these lines, García appears to believe that the industry's biggest logistical challenge is urban freight delivery (UFD), as the increase in online demand is combined with new, more stringent mobility regulations for the most polluting vehicles in big cities. The quest for creative technological solutions is therefore essential to adapting to this changing environment and to maintaining efficient service is an "asset for business development." (Technology Transforms Industrial Mobility, 2019)

2.4.4 e-Commerce Companies

Ecommerce refers to commercial transactions conducted online which means we can buy and sell commodities or Services using the Internet. There are various types of E-Commerce: B2B (Business to Business), B2C (Business to Consumer), C2C (Consumer to Consumer), C2B (Consumer to Business), B2A (Business to Administration), C2A (Consumer to Administration). E-Commerce are used extensively in Business transactions such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. (Qin, 2009). In 2017, e-commerce deals in Kuwait come to an assess of US$ 670 million and e-commerce entrance was 53%. In spite of the fact there can be a tremendous retail showcase, it is still behind in terms of e-commerce. Mall culture is still predominant and there's a common need of believe in online shopping as a entire. The tall rate of smartphone entrance within the nation—240%—is one of the most reasons for e-commerce development in Kuwait. The versatile administrators in Kuwait offer one of the foremost progressed portable systems within the Center East and 100% of arrive range and population is secured by versatile organize. In show disdain toward of that, e-commerce remains predominately restricted to online managing an account and budgetary brokerage administrations, as most Kuwaiti companies don't conduct online B2B and B2C exchanges. Paying bills online is the foremost common action and in 2017, 53% of e-commerce clients in Kuwait made cash exchanges over the Web. Indeed, although 97% of Kuwaitis utilize credit and charge cards, many of the consumers prefer to pay through cash over other payment means. (Commerce in Kuwait)

Boutiqaat – An E-Commerce Business Giant in Gulf

Boutiqaat is an online makeup showroom offering a mix of beauty and fashion items from over 700 international brands, exclusive local brands, where consumers can find personal suggestions from the most famous celebrities in the Middle East and shop their choices on-the-way. (Boutiqaat, 2019). Designed by a young Kuwaiti entrepreneur in 2015, Boutiqaat distinguishes itself from its peer e-commerce sites by adding a social element: it features Gulf and Arab celebrities and social media influencers who recommend goods, enabling customers to shop directly from the virtual shops of these influencers within Boutiqaat. (Boutiqaat, 2019)

3. LITERATURE REVIEW

In order to analyze the importance of the application of information systems to the management of the fleet used by the Kuwait based E- Commerce company , this study presents a theoretical view on Technology impact on Services offered , Technology impact on Fleet Management and Monitoring systems by which the customer satisfaction was increased.

In today's world, every single thing that happens in human life is made easier, thanks to technology, from ordering groceries or furniture in a single click right from your living room to travelling between two continents for a nice meal! An important point in the supply chain is how logistics services are managed, whether made through internal management or even by logistics service providers. Whether one or the other managerial model is adopted, transportation management stands out, not only because of the operating cost it represents, but also because it directly affects the level of service intended to maintain with suppliers and customers. In this line of digital evolution, Information and Communication Technology (ICT) has introduced several tools that help in the management of transportation, such as routing systems, freight and fleet management, cargo and vehicle tracking. The existing systems were too basic for Operations, Call Center and the business itself to understand the underlying issues that were affecting the customers

despite of the business growing at multiple folds. The business believed that most of the customers were getting served within the promised time but as complaints grew the business had to do a Root Cause Analysis (RCA) which suggested the lack of system help. (Vivaldini et al., 2012)

The logistics management system (LMS) helped the fleet management with proper utilization of the fleet and ensuring maximum capacity. The customers are also informed via trackable links where they could not only track their orders but also set an expectation as to when the orders will be delivered to them. (Vivaldini et al., 2012)

Technology continues to remain one of the most important aspects in supply chain organization. It acts as a driving force and helps in fulfilling orders efficiently and speedily. Organizations that manage fleets or a mobile sales force as well as field service organizations are facing many challenges. These challenges include improving compliance and organizational communications, reducing costs, and improving customer satisfaction. As a result, fleet management systems are perceived in terms of how they are able to benefit companies by realizing efficiency and profitability. (Begashaw & Temesgen, 2018)

In the knowledge-based economy of today, the rapidly changing and uncertain environment means that transport firms are facing their biggest challenge in how to address the current situation and capture a competitive advantage. Customers had no information as to when the driver would be there to deliver their orders. This not only lead the drivers to come back with high number of orders as reschedule but giving the customers time to change their mind to cancel their orders. With the help of the system the customer could manage his/her expectations and also reschedule their delivery time which helps the fleet management to plan their deliveries accordingly. (Begashaw & Temesgen, 2018)

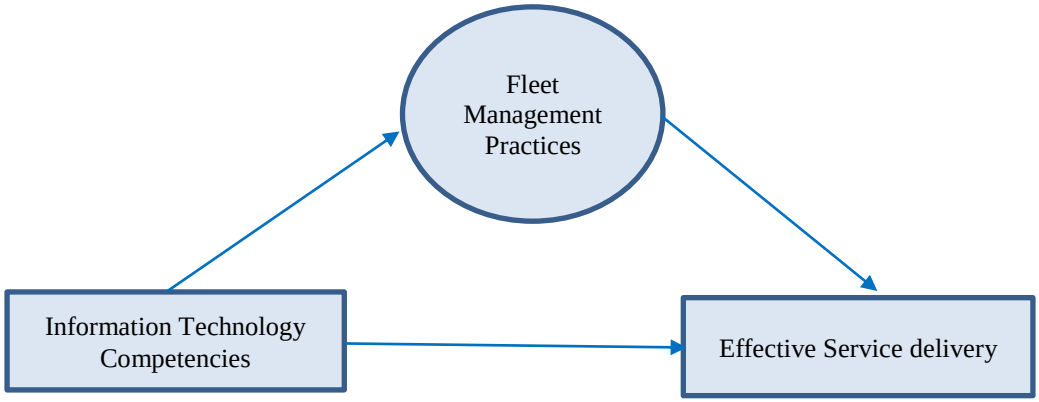
Transportation continues to be a key element as it represents the physical movement of materials between different points in a supply chain. Higher expectations and lower tolerance from consumers force the supply chain organizations to maximize reliability and cost efficiency. The drivers had a challenge with the route planning and had to do it manually. This lead not only lead to drivers delaying the orders but also with commitments to the customers. The orders were getting

delayed and, in many cases, this led to cancellation and returns. The increasing competence in the market is an important factor that drives the adoption of new technologies and innovation, as companies tend to search for new opportunities to cut costs by improving process efficiency or by developing new products. It also prevents any sort of thefts, which gives a peace of mind to both suppliers and consumers. (Gitahi & Ogollah, 2014) (Wilson et al., 2015)

3.1 Research Problem Statement

We have collected the data about the ecommerce website directly through the company and one of the main reasons is that we are going to understand whether the deliveries of the order are happening to the consumers/customers within the expected period or not. We found the following obstacles in organization of supply chain management and are working as soon as possible to fix these challenges and streamline our operations. Such as customer complaints are increasing, delivery behind schedule, returns are increasing, decreasing costs, non-availability of real-time tracking of shipment, capacity of vehicle to maximize order deliveries in a single shot, very poor performance in last mile delivery, inefficient delivery provider, sales & reputation is at stake. These challenges were taken as motivation and made us realize that faster responses to these challenges could maximize our sales and rake up profits. From the other hand, revenues are impacted by 20% in the past 6 months and should this continue in next 12 months then company will have to raise the capital. Inventory hold is high. Loss of customers & Reputational loss is major impact.

3.2 Research Model



3.3 Research Hypothesis

H_{O1}: Information Technology Competencies and Fleet Management Practices have no impact to Received Orders on Effective e-Delivery Lead-time at e-Commerce Industry.

H_{O2}: Information Technology Competencies and Fleet Management Practices have no impact to Invoiced Orders on Effective e-Delivery Lead-time at e-Commerce Industry.

H_{O3}: Information Technology Competencies and Fleet Management Practices have no impact to Shipped Orders on Effective e-Delivery Lead-time at e-Commerce Industry.

3.4 Research Methodology

Descriptive research methodology was followed. An empirical method of data was applied. The data is collected from Boutiqaat – an E-Commerce Company for Ladies apparels, Cosmetics & Perfumes. We are using Regression analysis for this study, which helps us to examine and analyze the relationship between the dependent variable and one or more independent variables. Reason for selecting the independent variables. Received Orders – Customers Placed the orders in the online portal however yet to be reconfirm by the Call center agents. Invoiced – Orders are forwarded to the warehouse for picking the item, Passed QC test, packed in order and ready for shipping after generating the Invoice. Shipped – This Stage is called Last Mile delivery (LMD) where the Orders are picked up by the shipping company along with the Invoice in order to deliver at the customer premises

3.5 Population and Sample

The research collected the empirical data from the Kuwait E-Commerce Industry. In 2020, e-commerce deals in Kuwait come to an assess of US$ 670 million and e-commerce entrance was

53%. In spite of the fact there can be a tremendous retail showcase, it is still behind in terms of e-commerce. Mall culture is still predominant and there's a common need of believe in online shopping as an entire. The tall rate of smartphone entrance within the nation —240% —is one of the most reasons for e-commerce development in Kuwait. The versatile administrators in Kuwait offer one of the foremost progressed portable systems within the Center East and 100% of arrive range and population is secured by versatile organize. In show disdain toward of that, e-commerce remains predominately restricted to online managing an account and budgetary brokerage administrations, as most Kuwaiti companies don't conduct online B2B and B2C exchanges. Paying bills online is the foremost common action and in 2017, 53% of e-commerce clients in Kuwait made cash exchanges over the Web. Indeed, although 97% of Kuwaitis utilize credit and charge cards, many of the consumers prefer to pay through cash over other payment means. (Commerce in Kuwait)

The sample was taken from a leading ecommerce company based out of Kuwait serving the GCC market. The sample is taken for a single country in which they operate (Kuwait) where they do the last mile delivery themselves as well as have other third-party delivery and shipping partners working with them. Which is known as “Boutiqaat –An e-Commerce Business Giant in Kuwait”

A total of 28,569 orders were taken as sample set which constitute to around 10% of the total orders from the operating country. This sample set was further used for RCA and to move the average closer to the target promised to the customer. (Kommi, 2019)

Received to Confirmed – From the total number of orders placed in a day by customers, how many orders have the Call Center team able to confirm with the customers over a call since 80% of the orders are COD and may require some details that are missing.

Confirmed to Invoiced – The process in warehouse where warehouse would take for picking, QC and Invoicing.

Confirmed to Shipped – The time taken by the Logistics team to ship out an order since the time of confirmation received from the customer.

The commitment to the customer within Kuwait was Same Day delivery and Next Day Delivery. The impact on revenue due to the complaints received from the customers were increasing and hence an RCA had to be done on the ASIS process.

The target respondents are

1-the Call Center (Total Orders – Numbers Vs Time taken),

2-the Warehouse (Total Orders – Numbers Vs Time Taken for processing), and

3-the Logistics (Total Orders – Numbers Vs Time Taken)

4. DATA ANALYSIS AND DISCUSSION OF RESULTS

The shown data were collected from (Boutiqaat – E-Commerce Company) from 01-Aug 2020 to 11-Aug 2020 as a sample data.

Days	Received Orders	Invoiced	Shipped	< 12 hours
01-Aug	2621	1139	1131	193
02-Aug	3008	1084	1081	180
03-Aug	1301	852	846	142
04-Aug	2946	1813	1803	303
05-Aug	3821	1720	1712	93
06-Aug	3128	1716	1708	154
07-Aug	2912	3193	3163	280
08-Aug	2991	1586	1487	61
09-Aug	2934	1365	1256	64
10-Aug	1420	1221	968	28
11-Aug	1487	872	288	17
Total	28569	16561	15443	1515

4.1 Impact of (Received Orders) on (delivery Time)

Regression Statistics								
Multiple R	0.35138467							
R Square	0.12347118							
Adjusted R Square	0.02607909							
Standard Error	94.9761715							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	11435.92345	11435.9235	1.26777424	0.289311946			
Residual	9	81184.25836	9020.47315					
Total	10	92620.18182						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	30.7396128	99.24085778	0.30974755	0.76380476	-193.7588044	255.23803	-193.7588	255.23803
Received Orders	0.04119317	0.036585104	1.12595481	0.28931195	-0.041568081	0.12395443	-0.0415681	0.12395443

The regression analysis was done on (time) and (Received Orders) to observe the performance of the model and get the important information to build up the model equation. Based on the results, we infer the following

$$time = (30.739) + (0.04119)\ Received\ Orders + U,\ \ R^2 = 0.12$$

t-test : (0.31) (1.13)

P-value: (0.76) (0.29)

Independent variable	Calculated P-value	Action	Cause & Effect
Received Orders	0.29	Do-not Reject Null Hypothesis	Insignificant

The intercept coefficient is 30.7 is the starting point of the model. The hypothesis for regression is

Null Hypothesis: More Than 50% of Orders are delivered in 12 Hours

Alternate: Actual Delivery Happens More Than 12 Hours

The t-test value for (Received Orders) is 1.13 and the probability value is 0.29, this value is higher than the level of significance value of 5%, therefore we do not reject the Null Hypothesis, and this has insignificant impact on (time).

The coefficient of determination (R^2) is equal to 0.12 which shows that the model is not suitable and 12% of the variations in (time) is explained by (Received Orders).

4.2 Impact of (Invoiced Orders) on (Delivery Time)

Regression Statistics								
Multiple R	0.5716336							
R Square	0.32676497							
Adjusted R Square	0.25196108							
Standard Error	11.8931644							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	617.8828545	617.882854	4.36828836	0.066178502			
Residual	9	1273.026236	141.44736					
Total	10	1890.909091						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.00160427	9.36843554	0.00017124	0.9998671	-21.19126929	21.1944778	-21.191269	21.1944778
Invoiced	0.01201512	0.005748736	2.09004506	0.0661785	-0.000989427	0.02501966	-0.0009894	0.02501966

The regression analysis was done on (time) and (Invoiced) to observe the performance of the model and get the important information to build up the model equation. Based on the results, we infer the following

$$time = (0.0016) + (0.0120)\ Invoiced + U,\ \ R^2 = 0.33$$

t-test : (0.0001) (2.09)

P-value: (0.9998) (0.066)

Independent variable	Calculated P-value	Action	Cause & Effect
Invoiced	0.066	Do-not Reject Null Hypothesis	Insignificant

The intercept coefficient is 0.0016 is the model starting point. The hypothesis for regression is

Null Hypothesis: Manage the Capacity Planning and Fulfillment Achieve at 100%

Alternate: Capacity Planning is Not 100%

The t-test value for (Invoiced) is 2.09 and the probability value is 0.066, this value is higher than the level of significance value of 5%, therefore we do not reject the Null Hypothesis, and this has insignificant impact on (time).

The coefficient of determination (R^2) is equal to 0.33 which shows that the model is not suitable and 33% of the variations in (time) is explained by (Invoiced).

4.3 Impact of (Shipped) on (Time)

Regression Statistics								
Multiple R	0.65548913							
R Square	0.429666							
Adjusted R Square	0.36629556							
Standard Error	76.6118926							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	39795.74301	39795.743	6.78022702	0.028555609			
Residual	9	52824.43881	5869.38209					
Total	10	92620.18182						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	17.1525194	51.74742673	0.33146613	0.74788032	-99.90829264	134.213331	-99.908293	134.213331
Shipped	0.08588501	0.032983389	2.60388691	0.02855561	0.011271405	0.16049862	0.01127141	0.16049862

The regression analysis was done on (time) and (Shipped) to observe the performance of the model and get the important information to build up the model equation. Based on the results, we infer the following

$$time = (17.153) + (0.0858)\, Shipped + U,\ \ R^2 = 0.42$$

t-test : (0.33) (2.60)

P-value: (0.75) (0.029)

Independent variable	Calculated P-value	Action	Cause & Effect
Shipped	0.029	Reject-Null Hypothesis	Significant

The intercept coefficient is 17.1 is the starting point of the model. The hypothesis for regression is

Null Hypothesis: Ontime Delivery and Effective Services

Alternate: Negative Customer Experience and Loss of Customers, High returns, Loss of opportunity

The t-test value for (Shipped) is 2.60 and the probability value is 0.029, this value is less than the level of significance value of 5%, therefore we reject the Null Hypothesis because (Shipped) has a significant impact on (Time). This means one unit increase in (Shipped) will increase the (time) by 0.0858

The coefficient of determination (R^2) is equal to 0.42 which shows that the model is fairly suitable and 42% of the variations in (time) is explained by (Shipped).

11.4 Impact of (Received Orders) & (Shipped) on (Time)

Regression Statistics								
Multiple R	0.65689458							
R Square	0.43151049							
Adjusted R Square	0.28938811							
Standard Error	81.1276785							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	39966.58009	19983.29	3.03618965	0.104445521			
Residual	8	52653.60173	6581.70022					
Total	10	92620.18182						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	27.5756824	84.78414987	0.32524573	0.75333821	-167.9369178	223.088283	-167.93692	223.088283
Received Orders	-0.0062302	0.038670599	-0.1611098	0.87600116	-0.095404773	0.08294435	-0.0954048	0.08294435
Shipped	0.08998646	0.043220556	2.08202929	0.0708912	-0.009680317	0.18965324	-0.0096803	0.18965324

The regression analysis was done on (time) and both (Received Orders) & (Shipped) to observe the performance of the model and get the important information to build up the model equation. Based on the results, we infer the following

$$time = (27.575) - (0.0062)\ Received\ Orders + (0.0899)\ Shipped + U,\ \ R^2 = 0.44$$

t-test :	(0.33)	(-0.16)	(2.08)
P-value:	(0.75)	(0.88)	(0.07)

Independent variable	Calculated P-value	Action	Cause & Effect
Received Orders	0.88	Do-not Reject Null Hypothesis	Insignificant
Shipped	0.07	Do-not Reject Null Hypothesis	Insignificant

The intercept coefficient is 27.5 is the starting point of the model. The hypothesis for regression is

Null Hypothesis: Customer Expectations are Poor

Alternate: Customer Experiences are Good

The t-test value for (Received Orders) is -0.16 and the probability value is 0.88, this value is higher than the level of significance value of 5%, therefore we do not reject the Null Hypothesis, and this has insignificant impact on (time).

The t-test value for (Shipped) is 2.08 and the probability value is 0.07, this value is higher than the level of significance value of 5%, therefore we do not reject the Null Hypothesis, and this has insignificant impact on (time).

The coefficient of determination (R^2) is equal to 0.44 which shows that the model is fairly suitable and 44% of the variations in (time) is explained by (Received Orders) & (Shipped).

5. CONCLUSION AND RECOMMENDATIONS

The introduction of new technological measure can improve supply chain agility, make it efficient and probably even reduce operating costs! It tries to integrate new technology with the help of existing technology and processes and can be a key element in increasing customer service, reducing operation costs and make the business model streamlined and more efficient. With the help of LMS the customers were now well informed as to when their orders will be at their doorstep. The fleet management could set the right expectations with the customers and also that the customers would plan their deliveries for a different time if they had inconvenience with their current schedule. This was a win-win situation for both the fleet and the customers. This reduced the total number of cancellations. For returning/replacing an item, the customers could schedule through a link and the information would be send to the fleet management.

The cause of increasing Customer Complaints in Boutiqaat is verified statistically through regression analysis. The examination shows that the lack of effective services and delayed deliveries is generating customer dissatisfaction and a substantial number of returns. As a result, a huge potential of losing both customers and opportunities. Moreover, by analyzing all three variables, which are Information Technology Competencies, Fleet Management Practices, and Effective Service Delivery, that include all hypotheses linked to customer expectations were proven as proposed.

Some recommendations could be useful in this regard, information technology competencies and its dimensions should be enhanced, also, incorporating the latest innovations to facilitate fleet

management. Moreover, strategic customer management plan should be developed. These recommendations should be taken seriously to improve the sales and maintain the organization's reputation in the Middle East.

REFERENCES

[1] Giaglis, G. M., Minis, I., Tarantilis, C. D., & Zeimpekis, V. (2007). *Dynamic Fleet Management: Concepts, Systems, Algorithms & Case Studies*. New York: Springer.

[2] Payne, A., & Frow, P. (2015). *Strategic Customer Management Integrating Relationship Marketing and CRM*. Cambridge: Cambridge University Press.

[3] Gitahi, M. P. & Ogollah, K (2014). *Influence of Fleet Management Practices on Service Delivery to Refugees in United Nations High Commissioner for Refugees Kenya Programme*. European Journal of Business Management, 2 (1), 336-341.

[4] Boutiqaat. (2019). *Boutiqaat - Next Categories*. Kuwait. Retrieved from www.boutiqaat.com

[5] Employment and Training Administration. (2012). *Information Technology Competency Model*. United States Department of Labor. Retrieved from www.doleta.gov

[6] Joerss, M., Schroder, J., Neuhaus, F., Klink, C., & Mann, F. (2016). *Parcel Delivery the Future of Last Mile*. Travel, Transport and Logistics: McKinsey&Company.

[7] Olson, L. (n.d.). *Using Technology to Last Mile Delivery Challenges*. datex.

[8] Logistics Management in eCommerce: Route Optimization in E-commerce by Locus. (n.d.). Retrieved March 15, 2020, from https://locus.sh/business-sectors/e-commerce/

[9] Kommi, K. (2019). *Boutiqaat_Kuwait Data_Updated* [Excel File]. Kuwait: Boutiqaat.

[10] Technology Transforms Industrial Mobility - Transport 4.0. (2019, July 30). Retrieved from https://www.mapfreglobalrisks.com/gerencia-riesgos-seguros/article/technology-transforms-industrial-mobility/?lang=en

[11] Commerce in Kuwait. (n.d.). Retrieved from https://www.nordeatrade.com/en/explore-new-market/kuwait/e-commerce

[12] Vivaldini, M., Pires, S. R. I., & Souza, F. B. D. (2012). Improving Logistics Services Through the Technology Used in Fleet Management. *Journal of Information Systems and Technology Management*, *9*(3).

[13] Begashaw, M., & Temesgen, B. (2018). *The Effect of Fleet Management on Fleet Efficiency from The Perspective of Employee*. Addis Ababa: Addis Ababa University.

[14] Wilson, M. N., Iravo, M. A., Tirimba, O. I., & Ombui, K. (2015). *Effects of Information Technology on Performance of Logistics Firms in Nairobi County* (4th ed., Vol. 5). Nairobi: International Journal of Scientific and Research Publications.

[15] Qin, Z. (2009). *Introduction to E-commerce*. New York: Springer Berlin Heidelberg.

[16] Martins, N., & Ledimo, O. (2015). The perceptions and nature of service delivery innovation among government employees: An exploratory study. *Journal of Governance and Regulation*, *4*(4), 575–580.

[17] Ali, N., Ghazal, T., Ahmed, A., Abbas, S., Khan, M., Alzoubi, H., Farooq, U., Ahmed, M. & Khan, M. (2021) Fusion-Based Supply Chain Collaboration Using Machine Learning Techniques. *Intelligent Automation & Soft Computing*, 31(3), 1671-1687

[18] Ghazal, T., Hasan, M., Alshurideh M., Alzoubi, H., Ahmad, M., Akbar, S., Al Kurdi, B. & Akour, I. (2021) IoT for Smart Cities: Machine Learning Approaches in Smart Healthcare—A Review, *Future Internet*, 13, 218. https://doi.org/10.3390/fi13080218

[19] Ali, N., Ahmed, A., Anum, L., Ghazal, T., Abbas, S., Khan, M., Alzoubi, H. & Ahmad, A. (2021) Modelling Supply Chain Information Collaboration Empowered with Machine Learning Technique. *Intelligent Automation & Soft Computing*, 30(1): 243-257. DOI:10.32604/iasc.2021.018983

[20] Analyzing the effect of knowledge management processes in the services' quality in Iraqi commercial banks. *International Review of Management and Business Research*, 5(1), 302-314. (2016)

[21] Exploring the Impact of the use of Business Information systems BIS on the organizational performance effectiveness. *International Journal of Business and Management Invention*, 5(4), 48-55. (2016)

[22] The Impact of Managers Efficiency on Quality of Strategic Decision-making under Crisis Management. *European Journal of Business and Management*, 7(26), 156-166. (2015)

[23] Investigating the Relationship between Knowledge Management Processes and Organizational Performance: The Mediating Effect of Organizational Innovation. *International Review of Management and Business Research*, 4(4), 977-997 (2015).

[24] The Impact of Business Process Management on Business Performance Superiority. *International Journal of Business and Management Review*, 3(2), 17-34 (2015)

[25] Evaluating Strategic Quality Management Dimensions Using Analytic Hierarchy Process (AHP) and its Impact on Organizational Success. *International Journal of Research in Management*, 5(1), 137-150 (2015)

[26] American Muslims' Perceptions Toward Transforming Islamic Banking System. *International Journal of Economics, Commerce and Management*, 5(1), 1-16 (2015)

[27] Exploring the Relationship between Quality Orientation, New Services Development and Organizational Performance. *American Academic & Scholarly Research Journal*, 5(3), 315-329 (2013)

[28] Analyze the Impact of Managers Awareness of Environmental Uncertainty on Exploiting Strategic Competencies. *Egyptian Journal for Commercial Studies*, 34(2), 611-625 (2010)

[29] Applying Electronic Supply Chain Management Using Multi-Agent System: A Managerial Perspective. *International Arab Journal of e-Technology*, 1(3), 106-113 (2010)

[30] Propose a model for Performance Criteria and measuring its impact for Achieving Excellence, *Association of Arab Universities Journal*, 56 (4), 920-941. (2010)

[31] S. Y. Siddiqui, A. Haider, T. M. Ghazal, M. A. Khan, I. Naseer, S. Abbas, M. Rahman, J. A. Khan, M. Ahmad, M. K. Hasan, A. M. A, and K. Ateeq, "IOMT cloud-based intelligent prediction of breast cancer stages empowered with Deep Learning," *IEEE Access*, vol. 9, pp. 146478–146491, Oct. 2021.

[32] S. Abbas, Y. Alhwaiti, A. Fatima, M. A. Khan, M. Adnan Khan, T. M. Ghazal, A. Kanwal, M. Ahmad, and N. Sabri Elmitwally, "Convolutional neural network based intelligent handwritten document recognition," *Computers, Materials & Continua*, vol. 70, no. 3, pp. 4563–4581, Oct. 2021.

[33] T. M. Ghazal, S. Abbas, S. Munir, M. A. Khan, M. Ahmad, G. F. Issa, S. Binish Zahra, M. Adnan Khan, and M. Kamrul Hasan, "Alzheimer disease detection empowered with transfer learning," *Computers, Materials & Continua*, vol. 70, no. 3, pp. 5005–5019, Oct. 2021.

[34] N. Ali, T. M. Ghazal, A. Ahmed, S. Abbas, M. A. Khan, H. M. Alzoubi, U. Farooq, M. Ahmad, and M. Adnan Khan, "Fusion-based supply chain collaboration using Machine Learning Techniques," *Intelligent Automation & Soft Computing*, vol. 31, no. 3, pp. 1671–1687, Oct. 2021.

[35] M. K. Hasan, T. M. Ghazal, A. Alkhalifah, K. A. Abu Bakar, A. Omidvar, N. S. Nafi, and J. I. Agbinya, "Fischer linear discrimination and quadratic discrimination analysis–based data mining technique for internet of things framework for Healthcare," *Frontiers in Public Health*, vol. 9, Oct. 2021.

[36] R. Bibi, Y. Saeed, A. Zeb, T. M. Ghazal, T. Rahman, R. A. Said, S. Abbas, M. Ahmad, and M. A. Khan, "Edge AI-based automated detection and classification of road anomalies in VANET using Deep Learning," *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–19, Sep. 2021.

[37] M. Adnan Khan, T. M. Ghazal, S.-W. Lee, and A. Rehman, "Data Fusion-based machine learning architecture for intrusion detection," *Computers, Materials & Continua*, vol. 70, no. 2, pp. 3399–3413, Sep. 2021.