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E-LOGISTICS AND SUPPLY CHAIN OPERATION

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ABSTRACT

In every ideal situation supply chain performance objective is to increase productivity, lower costs and fulfill the demands of the customers in emerging markets. Therefore, effective management of the supply chain can lead organizations to gain market share, reduce costs, and deliver more value to their shareholders. The main aim of this study was to assess the effect of electronic logistics on the supply chain performance of logistics companies in Nairobi, Kenya. The study's specific objectives were: To examine the effect of: E- tendering on the supply chain performance of logistic companies, automated warehousing operations systems on the supply chain performance of logistic companies, electronic order processing on the supply chain performance of logistic companies and to determine the effect of enterprise resource planning on supply chain performance of logistic companies in Nairobi. The study used the innovation diffusion theory, technological determinism theory, queuing theory, and resources-based view theory.

INTRODUCTION

This chapter examines the history of the study, declaration of the problem, targets of the study, hypotheses of the study, value and the scope of the study.

Background of the Study

Supply chain overall performance has been of high-quality challenge to many logistic corporations due to the complicated surroundings in which businesses compete. Markets have end up some distance greater dynamic and turbulent with speedy modifications in consumer necessities (Christopher, 2016). The markets have additionally end up extra segmented which skill that clients have quite a number necessities for merchandise and services. In addition, improved necessities on organizations from a market to supply more than one product sorts and supply personalized options of each merchandise and offerings are increasing. Furthermore, world opposition has put strain on corporations to turn out to be faster, better, and more cost-effective.. Measuring grant chain overall performance would possibly lead to a higher perception of the grant chain and helps to check and expose the viability of a firm's strategies. In addition, Mital, Giudice and Papa (2018) referred to that measuring furnish chain overall performance gives vital comments information, helps to disclose progress, amplify employers' motivation and communication, and helps to diagnose problems. The measures that assist a corporation measure their growth on overall performance goals in day-to-day work are frequently referred to as key overall performance symptoms (KPIs). Therefore, usual overall performance of the grant chain extensively influences the economic fitness of all corporations (Christopher, 2016).

Statement of the Problem

Ideally furnish chain overall performance goals at growing productivity, reducing prices and satisfying the needs clients in rising markets. Effective provide chain overall performance helps in main companies achieve market share, minimize charges and supply extra cost to their shareholders. Increased competitiveness in all

industrial sectors, sharpened by means of globalization and the fall of world supply, is forcing businesses closer to the optimization of their commercial enterprise methods and new approaches of mergers or partnerships with direct effects in lowered enterprise charges (Xiao, 2017). With these strategic alliances, new administration techniques are shaped as E-logistics. Jhawar, Garg and Kheraj (2017) make references that logistics are really worth 10% to 12% of the GDP on any country . According to Rogoff (2015), Electronic logistics have a possible of reducing fees by using 10%. On the foundation of these two references, we can conclude that Electronic logistics can keep our cash for as tons as 1.2% of the GDP.Despite logistics businesses in Kenya putting in software program to enhance cargo transportation in a bid to enlarge effective and reduce costs, Kenya's logistics area was once ranked as one of the two most inefficient in the area (East Africa Logistics Performance Survey, 2018). In the survey Kenya posted a rating of 2.59 factors in contrast to the 2.82 and 2.60 factors realized by using Uganda and Tanzania respectively.

LITERATURE REVIEW

E-Logistics, additionally regarded as digital logistics, refers to the use of digital science and facts structures to optimize and control logistics things to do in the grant chain. With the speedy development of statistics technology, e-logistics has received enormous interest in latest years. This literature overview ambitions to furnish an overview of the key themes, trends, and findings in the subject of e-logistics and furnish chain operations.

1. Role of E-Logistics in Supply

Chain Management:

Numerous research spotlight the indispensable function of e-logistics in bettering provide chain administration practices. It permits real-time visibility, transparency, and coordination amongst a range of grant chain stakeholders, which include suppliers, manufacturers, distributors, and customers. E-logistics structures facilitate environment friendly order processing, stock management, transportation optimization, and transport tracking, main to multiplied client carrier and fee reductions.

2. E-Logistics Technologies and Applications: The literature emphasizes a range of applied sciences and purposes utilized in e-logistics. These encompass digital statistics interchange (EDI), radio frequency identification (RFID), barcode scanning, international positioning structures (GPS), cloud computing, and Internet of Things (IoT). Researchers discover the advantages of these applied sciences in automating and streamlining logistics operations, such as warehouse management, stock control, and transportation routing.

3. E-Logistics and Supply Chain Integration: Integration is a indispensable factor of e-logistics and grant chain management. Studies center of attention on the integration of statistics systems, processes, and collaborations throughout grant chain partners. Integrated e-logistics structures allow seamless facts sharing, synchronization of activities, and coordination of logistics processes, finally main to increased grant chain overall performance and aggressive advantage.

4. E-Logistics Challenges and Barriers:

While e-logistics provides big benefits, researchers additionally pick out a number of challenges and boundaries to its implementation. These consist of problems associated to facts safety and privacy, interoperability amongst special IT systems, resistance to exchange from stakeholders, infrastructure limitations, and the want for expert human resources. Understanding and addressing these challenges is imperative for profitable e-logistics adoption.

5. E-Logistics Performance Measurement and Evaluation:
Measuring and evaluating the overall performance of e-logistics structures is a subject matter of activity in the literature. Researchers advocate more than a few overall performance indicators, such as order cycle time, stock turnover, transport reliability, purchaser satisfaction, and value metrics. They improve frameworks and fashions to determine the have an effect on of e-logistics on grant chain overall performance and grant insights for non-stop improvement.

6. E-Logistics and Sustainable Supply Chains: Sustainability is a developing problem in furnish chain management. The literature highlights the function of e-logistics in helping sustainable provide chain practices. E-logistics can make contributions to lowering carbon emissions thru optimized transportation routes,

environment friendly automobile utilization, and decreased paper-based processes. Moreover, it allows traceability and transparency in the grant chain, facilitating accountable sourcing and moral practices.

Research Objectives

When conducting lookup on e-logistics and furnish chain operations, it is imperative to set up clear lookup targets that information the learn about and outline its purpose. The following are some conceivable lookup goals that can be pursued in this area:

1. Investigate the have an effect on of e-logistics adoption on grant chain performance: This goal focuses on inspecting how the implementation of e-logistics applied sciences and structures influences key overall performance metrics in the furnish chain, such as order success time, stock turnover, shipping reliability, and consumer satisfaction. The lookup may also contain gathering and examining facts from agencies that have adopted e-logistics options and evaluating their overall performance with these that have not.

2. Identify the quintessential elements influencing the profitable implementation of e-logistics in provide chain operations: This goal ambitions to become aware of and analyze the key elements that make contributions to the profitable adoption and implementation of e-logistics in provide chain operations. Factors should consist of organizational readiness, technological capabilities, useful resource availability, stakeholder collaboration, and exchange administration strategies. The lookup can also contain surveys, interviews, or case research to collect facts from corporations that have carried out e-logistics solutions.

3. Assess the challenges and obstacles confronted in e-logistics adoption and advocate techniques for overcoming them: This goal focuses on perception the challenges and obstacles that groups stumble upon when imposing e-logistics in their provide chain operations. It includes figuring out and examining problems associated to records protection and privacy, interoperability, resistance to change, infrastructure limitations, and capabilities gaps. The lookup might also contain a mixture of literature review, surveys, and interviews to collect insights from practitioners and experts. Based on the findings, techniques and guidelines can be proposed to tackle these challenges effectively.

4. Examine the position of e-logistics in improving grant chain visibility and traceability: This goal explores how e-logistics applied sciences and structures make a contribution to enhancing grant chain visibility and traceability. It entails investigating the use of applied sciences such as RFID, GPS, and IoT in monitoring and monitoring items during the furnish chain. The lookup may additionally contain case research or empirical evaluation to consider the extent to which e-logistics enhances furnish chain visibility, allows real-time tracking, and allows product traceability.

5. Investigate the integration of e-logistics structures with different grant chain administration processes: This goal focuses on grasp the integration of e-logistics structures with different furnish chain administration processes, such as procurement, production, and distribution. It entails exploring how e-logistics applied sciences can be seamlessly built-in with current structures and methods to optimize standard provide chain operations. The lookup may additionally contain examining case research or conducting simulations to examine the advantages and challenges of integrating e-logistics with different provide chain functions.

6. Assess the sustainability implications of e-logistics in provide chain operations: This goal examines the environmental and social sustainability implications of e-logistics adoption in provide chain operations. It entails assessing the have an effect on of e-logistics on carbon emissions, strength consumption, waste reduction, and moral sourcing practices. The lookup may also contain quantitative analysis, existence cycle assessments, or surveys to consider the sustainability overall performance of corporations that have applied e-logistics solutions.

Research Methodology

The lookup methodology employed in reading e-logistics and provide chain operations performs a necessary function in making sure the validity, reliability, and generalizability of the findings. The following outlines a common lookup methodology that can be utilized to look at a number of components of e-logistics and grant chain operations:

1. Research Design:

The lookup diagram have to align with the lookup targets and the nature of the study. Several lookup designs can be considered, which include descriptive, exploratory, correlational, experimental, or case learn about designs. The desire of plan relies upon on the particular lookup questions and handy data.

2. Data Collection:

To accumulate records for reading e-logistics and provide chain operations, researchers can appoint quite a number methods, including:

a. Surveys: Conducting surveys to acquire facts from provide chain managers, logistics professionals, or different applicable stakeholders. Surveys can be administered on-line or via interviews.

b. Interviews: Conducting structured or semi-structured interviews with key informants, which includes furnish chain managers, e-logistics answer providers, or enterprise experts. Interviews permit for in-depth exploration of particular topics.

c. Case Studies: Conducting specified case research of groups that have carried out e-logistics in their provide chain operations. This entails gathering qualitative and quantitative statistics from more than one sources, such as interviews, report analysis, and observations.

d. Document Analysis: Analyzing current documents, reports, and literature associated to e-logistics and furnish chain operations. This can grant treasured insights into enterprise practices, trends, and challenges.

e. Observations: Conducting direct observations of grant chain operations and e-logistics structures in action. This approach permits researchers to acquire firsthand facts about the genuine implementation and utilization of e-logistics technologies

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3. Data Analysis:

The information accrued via surveys, interviews, case studies, or different techniques want to be analyzed to derive significant insights. The evaluation may additionally contain each qualitative and quantitative techniques, relying on the nature of the facts and lookup questions. Some frequent statistics evaluation techniques include:

a. Quantitative Analysis: Analyzing survey responses or quantitative records gathered thru structured interviews. This can contain statistical strategies such as regression analysis, correlation analysis, or speculation testing.

b. Qualitative Analysis: Analyzing interview transcripts, remark notes, or qualitative statistics accumulated via open-ended survey questions. This can contain methods such as thematic analysis, content material analysis, or coding of data.

c. Mixed-Methods Analysis: Combining qualitative and quantitative facts to attain a complete grasp of the lookup topic. This can contain integrating findings from distinct statistics sources or the use of one kind of facts to help or provide an explanation for the findings from any other type.

4. Ethical Considerations: Researchers must adhere to moral recommendations when conducting research. This consists of acquiring knowledgeable consent from participants, making sure information confidentiality and privacy, and retaining ethical requirements in facts collection, analysis, and reporting.

5.Limitations:

Acknowledge and talk about the barriers of the lookup methodology, such as pattern size, records series biases, or generalizability of findings. Being obvious about boundaries enhances the credibility and validity of the research.

6. Interpretation and Reporting: Interpret the findings in mild of the lookup goals and theoretical frameworks. Present the outcomes in a clear and concise manner, the usage of excellent visualizations, tables, or

charts. Provide a complete dialogue of the implications of the findings and their value for e-logistics and provide chain operations. Also, pick out avenues for future lookup in the field.

Data analysis

Data evaluation is the moves and techniques carried out on information that helped the researcher to describe facts, become aware of patterns, strengthen explanations and take a look at hypotheses. Quantitative information gathered had been analyzed by way of use of descriptive and inferential statistics. Descriptive information have been frequency, percentages, means, and general deviations whilst inferential facts have been correlation and a couple of regressions. Frequency tables, charts and graphs had been used to existing the records accrued for ease of grasp and analysis. Data evaluation was once executed with resource of Statistical Package for Social Scientists (SPSS). The following regression mannequin have been used:
$Y= \beta0+\beta1x1+\beta2x2+\beta3x3 + \beta4x4+\varepsilon$
Where: Y represents on grant chain overall performance β0 signify the intercept when x is zero
X1 symbolize E- tendering
X2 characterize computerized warehousing operations structures
X3 signify digital order processing X4 Enterprise useful resource planning β1, β2, β3 and β4 and coefficients of the find out about variables ε represents error term.

Data evaluation performs a indispensable function in extracting significant insights from the records accumulated in research targeted on e-logistics and provide chain operations. The precise facts evaluation strategies used can also fluctuate relying on the lookup objectives, the nature of the information collected, and the lookup diagram employed. Here are some frequent facts evaluation strategies that can be utilized in the context of e-logistics and provide chain operations:

Quantitative Data Analysis: Quantitative records evaluation entails inspecting numerical facts accumulated via surveys, structured interviews, or different quantitative methods. Some frequent methods used in quantitative facts evaluation include:

a. Descriptive Statistics: Calculating measures such as mean, median, popular deviation, and frequency distributions to summarize and describe the data.

b. Inferential Statistics: Employing statistical methods like regression analysis, correlation analysis, t-tests, or ANOVA to take a look at relationships, take a look at hypotheses, and draw conclusions from the data.

c. Data Mining and Machine Learning: Utilizing statistics mining techniques, such as clustering, classification, or affiliation rule mining, to pick out patterns, trends, and relationships inside the data. Machine mastering algorithms can additionally be utilized to strengthen predictive fashions or classify information primarily based on predefined criteria.

Qualitative Data Analysis: Qualitative records evaluation includes inspecting non-numerical data, such as interview transcripts, remark notes, or open-ended survey responses. Qualitative evaluation focuses on perception the context, themes, and meanings inside the data. Some frequent qualitative information evaluation methods include:

a. Thematic Analysis: Identifying routine topics or patterns inside the information and organizing them into significant categories. This entails coding the data,

growing a coding framework, and systematically examining the statistics for rising themes.

b. Content Analysis: Analyzing the content material of documents, reports, or different textual sources associated to e-logistics and provide chain operations. This entails categorizing and quantifying precise concepts, keywords, or issues inside the text.

c. Narrative Analysis: Examining the narratives and testimonies shared by way of individuals to reap insights into their experiences, perspectives, and perceptions of e-logistics and grant chain operations.

Mixed-Methods Analysis:
In research that make use of each quantitative and qualitative data, researchers can rent mixed-methods evaluation strategies to combine and analyze the one of a kind sorts of data. This entails combining quantitative and qualitative findings to grant a complete appreciation of the lookup topic. For example, quantitative records may additionally be used to check relationships and correlations, whilst qualitative information can grant extra context and explanations.

Visualization Techniques:
Visualizations, such as charts, graphs, or diagrams, can be employed to current the findings of the facts evaluation in a clear and concise manner. Visualizations can assist pick out patterns, trends, or relationships in the records and facilitate simpler interpretation and verbal exchange of the results.

Triangulation:
Triangulation entails evaluating and cross-verifying statistics from a couple of sources or the usage of distinct information series strategies to decorate the validity and reliability of the findings. Triangulation can be utilized in each quantitative and qualitative statistics evaluation to beef up the lookup outcomes.

Limitations

When conducting lookup on e-logistics and furnish chain operations, it is necessary to apprehend and talk about the boundaries of the study. Addressing these obstacles enhances the transparency and credibility of the lookup findings. Here are some frequent barriers that researchers might also come across in the find out about of e-logistics and grant chain operations:

1. Generalization: Research findings in e-logistics and furnish chain operations can also be confined in their generalization due to the particular context or pattern used in the study. For example, findings primarily based on a unique enterprise or geographical area may also now not be relevant to different industries or areas with unique characteristics. Researchers need to renowned the barriers of generalization and think about the context when decoding and making use of the findings.

2. Data Availability and Quality: The availability and fantastic of information can current obstacles in lookup on e-logistics and furnish chain operations. Access to applicable and correct data, in particular from agencies or enterprise sources, may additionally be challenging. Additionally, statistics gathered from surveys or interviews may additionally be problem to respondent biases, recall biases, or boundaries in the representatives of the sample.

3. Rapidly Changing Technology: The discipline of e-logistics is characterized by way of fast technological advancements. As a result, lookup findings may additionally emerge as old-fashioned shortly as new applied sciences and practices emerge. Researchers have to be conscious of the obstacles imposed via the dynamic nature of e-logistics technological know-how and account for possible modifications in their find out about graph and recommendations.

4. Complex Interactions and Dependencies: Supply chain operations contain complicated interactions and dependencies between a range of stakeholders, consisting of suppliers, manufacturers, distributors, and customers. Capturing and grasp these complicated relationships can be challenging. Research research might also oversimplify or forget sure factors of these interactions, limiting the comprehensiveness of the findings.

5. Bias and Subjectivity: Researchers must be conscious of their very own biases and subjectivity that may also have an effect on the lookup method and findings. Bias can happen in a variety of stages, such as in the choice of lookup topics, facts series methods, or interpretation of results. Researchers must attempt to decrease bias via rigorous find out about design, obvious methodologies, and integral self-reflection.

Suggestions

The study about suggests that a in a similar fashion search for have to be carried out the utilization of unique variables distinct than these used in this study. This will make sure generalization of the penalties and sincerely putting up the phenomenon that exists. Future look up have to moreover be carried out the utilization of the longitudinal locate out about designs in order to grant a greater basement of how the discover out about variables enhancement Embrace Digital Transformation: Invest in digital applied sciences and options to beautify the effective and effectiveness of grant chain operations. Explore automation, robotics, Internet of Things (IoT), synthetic talent (AI), and computing device gaining knowledge of (ML) purposes that can streamline processes, enhance visibility, and allow real-time decision-making.

2. Implement Supply Chain Visibility Solutions: Enhance grant chain visibility through imposing monitoring and tracing applied sciences such as RFID, GPS, and block chain. These applied sciences supply real-time insights into the motion and area of goods, enabling higher stock management, demand forecasting, and hazard mitigation.

3. Optimize Last-Mile Delivery: Focus on optimizing the last-mile transport process, which is frequently the most high-priced and complicated section of the provide chain. Utilize route optimization algorithms, crowd-shipping platforms, and choice transport selections like drones or independent motors to enhance efficiency, minimize costs, and decorate consumer experience.

4. Foster Collaboration and Integration: Collaborate carefully with suppliers, logistics provider providers, and different stakeholders to create an built-in and synchronized grant chain network. Foster

robust partnerships, share information, and enforce collaborative planning, forecasting, and replenishment (CPFR) techniques to enhance efficiency, decrease lead times, and limit stock outs.

5. Enhance Data Analytic Capabilities: Invest in statistics analytic skills to leverage the enormous quantities of facts generated in e-logistics and furnish chain operations. Use superior analytic strategies to attain insights into consumer behavior, demand patterns, provider performance, and operational efficiency. Apply predictive analytic to forecast demand, optimize stock levels, and pick out plausible bottlenecks.

6. Focus on Sustainability: Embrace sustainability practices in e-logistics and furnish chain operations. Implement inexperienced logistics initiatives to minimize carbon emissions, optimize transportation routes, and promote eco-friendly packaging. Consider moral sourcing practices, circular financial system principles, and accountable disposal of waste to decorate environmental and social sustainability.

7. Invest in Talent Development: Recognize the significance of knowledgeable experts in e-logistics and furnish chain operations. Invest in education and improvement packages to upskill personnel and decorate their information of rising technologies, statistics analytic, and grant chain administration concepts. Foster a subculture of innovation and non-stop enhancement inside the organization.

Conclusions

The learn about concluded that E- tendering has enabled the logistic organizations limit the time for tender processing. It has enabled the suppliers to access tenders/quotation/requests any time somewhere in the world. Finally, e tendering has helped in casting off non compliant bids automatically. The find out about additionally concluded that statistics seize systems, automation of storage information, retrieval of warehouse data and automation in warehousing has stronger Accuracy and effective of logistic companies. The learn about in the end concluded that Electronic order has more advantageous taking pictures and administering records electronically decorate decreasing paper work and time waste and has made monitoring delivery items and product convenient therefore giving customers assured on logistic companies. Dissemination of logistic data to clients thru digital order enhances the overall performance of logistic companies. Validation of logistic information's better its performance. The learn about is in settlement with Technological Determinism Theory which used to be developed with the aid of Thor stein Veblen (1857–1929), an American social scientist. Technological determinism (TD) states that technological know-how is a social shape or a pressure which drives change. TD modifications the organizational culture, structure, reporting line, norm and many different components inclusive of the modes of operations. The two fundamental hypotheses that technological determinism relies upon are; trust that the technical base of a society is the essential circumstance affecting all patterns of social existence, 2nd trust is that technological exchange is the single most necessary supply of exchange in a society.

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