Influence of Human Resource Competency on Implementation of Electronic Logistics in FMCG Manufacturing Firms in Nairobi County

Grace Naipei Mpaayei
St. Paul's University

Abstract

Human resource competency is crucial in adopting and implementing electronic logistics (e-logistics) in fast-moving consumer goods (FMCG) manufacturing firms. The Fast-Moving Consumer Goods (FMCG) manufacturing sector significantly contributes to Kenya's economy, accounting for approximately 9.2% of the country's GDP and employing a substantial portion of the workforce in the manufacturing industry. The core of this persistent struggle lies in the weak or inadequate human resource competency that underpin logistics operations. E-logistics. The study objective was to assess the influence of human resource competency on the implementation of electronic logistics in FMCG manufacturing firms in Nairobi. The study used descriptive and explanatory design to achieve the research objectives. The study targeted 309 respondents drawn from logistics, supply chain, procurement, finance, IT, marketing departments of the representative FMCG firms. This research used stratified sampling, and 6 clusters of departments were used to categorize participants, while simple random sampling was utilized to select participants from each individual cluster. The researcher utilized questionnaires as instruments for data collection. The structured questionnaires contained close-ended questions to provide rich quantitative data for quantitative analysis. The researcher used Statistical Package for Social Sciences (SPSS) Version 25 to analyze data. The independent variable was the human resource competency while the dependent variable was the implementation of electronic logistics. The survey of 151 respondents revealed mixed readiness in human resource competency for e-Logistics implementation in FMCG firms. While 62.9% agreed employees possess technical skills, 52.3% felt training was inadequate, and 53.7% said staff couldn't troubleshoot basic issues. Although 60.9% acknowledged strong management support, only 38.4% felt capable of addressing technical problems, highlighting a gap between leadership intent and staff execution. Awareness of e-Logistics efficiency was high (58.3%), but 55.6% noted poor investment in continuous skill development. Motivation remained low, with only 36.5% feeling encouraged, and 61.6% citing weak HR policies. These findings suggest the need for ongoing, practical training, policy reform, and employee incentives to fully harness e-Logistics' potential. Regression analysis revealed that by increasing Human Resource Competency by 0.894.

Keywords: Institutional Capabilities, Human Resource Competency, Electronic Logistics

Introduction

Human resource competency is crucial in adopting and implementing electronic logistics (e-logistics) in fast-moving consumer goods (FMCG) manufacturing firms. In Kenya, human resource competency within FMCG manufacturing firms is gaining traction as key enablers for implementing electronic logistics systems. Government efforts through the Kenya National Electronic Single Window System and ICT policy reforms are supporting this digital shift (Mutua

& Wambua, 2022). However, disparities in human resource competency like digital leadership, organizational agility, and ICT infrastructure continue to shape firm-level outcomes. Firms with strong human resource competency are better positioned to integrate warehouse management systems, GPS tracking, and e-invoicing tools (Ochieng & Akinyi, 2024). Understanding how these human resource competency dynamics influence e-logistics implementation is vital for achieving efficiency, agility, and competitive advantage in the sector.

The Fast-Moving Consumer Goods (FMCG) manufacturing sector significantly contributes to Kenya's economy, accounting for approximately 9.2% of the country's GDP and employing a substantial portion of the workforce in the manufacturing industry (KAM, 2023). According to the Kenya National Bureau of Statistics (2024), the manufacturing sector, which includes FMCG firms, grew by 5.6% in 2023, reflecting its role in industrial expansion and economic resilience. This growth is driven by increased consumer demand, advancements in production efficiency, and regional trade opportunities. Companies such as Unilever Kenya, Bidco Africa, and Brookside Dairy have established strong market positions, creating thousands of jobs and fostering supply chain networks that benefit local farmers and distributors. Additionally, FMCG firms enhance trade by exporting products to regional markets, strengthening Kenya's position in the East African economy.

Statement of the Problem

Despite the growing recognition of electronic logistics (e-logistics) as a transformative approach to supply chain efficiency, many fast-moving consumer goods (FMCG) manufacturing firms in Kenya continue to face significant challenges in its effective implementation. The core of this persistent struggle lies in the weak or inadequate human resource competency that underpin logistics operations. E-logistics, which relies on integrated systems, real-time data sharing, and automation, demands a strong human resource competency to function optimally (Hassan & Mahmoud, 2022). However, in the Kenyan FMCG manufacturing sector particularly within Nairobi and its industrial corridors, this foundation remains underdeveloped. This is a present and pressing problem as these firms are increasingly required to digitize operations to remain competitive in both regional and global markets, yet the internal capacity to implement and sustain such systems is lacking. Human resource competency remains inadequate. The availability of logistics personnel with technical proficiency in digital tools, systems integration, and data analytics is limited, further impeding the rollout of e-logistics. Many firms lack structured training

programs or access to skilled labor markets, leading to poor adoption and underutilization of digital systems (Zulu et al., 2024). Therefore, it is imperative to examine how technological infrastructure affect the implementation of e-logistics, to inform targeted interventions that can bridge this strategic gap.

Objective of the Study

The objective of the study is to investigate the influence of human resource competency on the implementation of electronic logistics in FMCG manufacturing firms in Nairobi.

Literature Review

Application of Human Capital Theory in Human Resource Competency

Human Capital Theory developed by Gary Becker in 1964, is based on the premise that investment in education, training, and skills will improve individual productivity and organizational performance. The core tenets of the theory emphasize that human capital comprising knowledge, expertise, and competencies serves as a critical resource for firms seeking competitive advantage (Becker, 1964). In the context of electronic logistics implementation in fast-moving manufacturing firms in Kenya, human resource competency plays a pivotal role in ensuring the successful adoption and utilization of digital logistics solutions.

Human Capital Theory operates under two key assumptions: first, that individuals and organizations benefit from investing in skills development, and second, that human capital contributes to economic growth and efficiency (Becker, 1964). These assumptions underscore the importance of equipping employees with the necessary technical and managerial competencies to navigate electronic logistics systems effectively. As firms transition to digital supply chain solutions, workforce proficiency in areas such as data analytics, automation, and enterprise resource planning (ERP) systems becomes essential.

Despite its broad applicability, Human Capital Theory has faced criticisms. One major critique is its emphasis on formal education while overlooking experiential learning and tacit knowledge (Marginson, 2019). Additionally, scholars argue that the theory does not fully account for structural barriers that limit access to skill development opportunities (Brown et al., 2021). In the case of electronic logistics, this limitation suggests that firms must adopt inclusive training programs to ensure workforce adaptability and technological proficiency.

Recent studies reinforce the relevance of Human Capital Theory in understanding the role of human resource competency in electronic logistics implementation. Research by Olivares-Aguila and ElMaraghy (2021) highlights how smart manufacturing requires continuous upskilling to align human capital with technological advancements. Similarly, Zulu et al. (2024) emphasize the importance of human-centered technology management in fostering digital transformation2. In Kenya's fast-moving manufacturing sector, firms that invest in workforce training and competency development can enhance logistics efficiency and operational resilience.

Human Capital Theory provides insights into how firms can optimize electronic logistics implementation through strategic human resource investments. Studies by Jocelyne and Kariuki (2020) suggest that employee empowerment and competency development contribute to organizational performance. This perspective aligns with the growing trend of digitalization in supply chain management, where firms seek to enhance workforce capabilities through targeted training initiatives.

Therefore, Human Capital Theory remains a valuable framework for analyzing the influence of human resource competency on electronic logistics implementation. While criticisms highlight its limitations in addressing informal learning, recent research underscores its applicability in guiding firms toward strategic workforce development. Fast-moving manufacturing firms in Kenya can leverage Human Capital Theory principles to enhance their logistics capabilities, ensuring sustained efficiency and competitive advantage in an increasingly digitalized business environment.

Empirical Literature Review

In the United States, Thompson and Carter (2021) examined technical skills proficiency in electronic logistics within the aviation industry. The study aimed to assess how workforce expertise in digital logistics systems influences operational efficiency. The researchers adopted a mixed-methods approach, and collected data by surveying 150 logistics professionals and in-depth interviews with industry experts. Findings indicated that firms with highly skilled personnel experienced a 40% improvement in logistics accuracy and a 30% reduction in processing errors. However, the study did not explore the impact of skill gaps in smaller firms, highlighting a need for further research on workforce training accessibility.

In Spain, Rodríguez et al. (2022) investigated training and development access in electronic logistics adoption within the hospitality sector. The study employed a quantitative survey targeting HR managers in 200 firms. Results showed that firms investing in structured training programs for digital logistics systems achieved higher adoption rates and reduced transition errors by 45%. Despite these benefits, the study overlooked the financial constraints faced by SMEs in implementing large-scale training initiatives, presenting an opportunity for further research on cost-effective training models.

In Dubai, Ahmed and Khalid (2023) explored digital readiness and adaptability in electronic logistics within the construction industry. The study utilized a case study approach, analyzing digital transformation strategies in leading construction firms. Findings revealed that firms with proactive digital adaptation strategies reported a 35% increase in logistics efficiency. However, firms with rigid organizational structures struggled to integrate new technologies, leading to mixed results in digital readiness.

In India, Patel and Mehta (2024) assessed experience in logistics automation within the healthcare sector. The study conducted structured interviews with logistics managers in 100 firms to evaluate the effectiveness of automation in supply chain operations. Results indicated that firms with experienced personnel in logistics automation improved order fulfillment rates by 50%. Nonetheless, the study did not address the challenges of transitioning from manual to automated systems, suggesting a need for further exploration.

In Senegal, Sow et al. (2023) examined human resource competency in digital logistics within the agriculture and fisheries sector. The study employed a longitudinal analysis of firms transitioning from manual to electronic logistics systems. Findings showed that firms adopting digital infrastructure experienced a 50% reduction in logistics errors. However, regulatory challenges and inconsistent internet connectivity hindered full adoption, highlighting a gap in policy alignment.

In Rwanda, Nkurunziza and Uwizeye (2022) investigated the impact of workforce digital literacy on electronic logistics performance within the telecommunications industry. Using econometric modeling, the study analyzed the correlation between employee digital literacy and logistics efficiency. Results demonstrated that firms with structured digital training programs reported a 60% improvement in supply chain responsiveness. However, firms with limited financial resources struggled to maintain digital systems, leading to negative correlations in some cases.

In Kenya, Mwangi and Otieno (2023) examined human resource competency in electronic logistics within energy and utilities firms. The study employed a survey methodology, collecting data from

120 firms implementing electronic logistics solutions. Findings indicated that firms leveraging digital tools improved operational efficiency by 55%. However, firms with inadequate workforce training faced inefficiencies, presenting a gap in human capital development. Additionally, Kamau et al. (2024) assessed the role of cost optimization strategies in workforce training within media and entertainment firms in Kenya. The study used regression analysis to evaluate the impact of financial planning on firm performance. Results showed a significant positive effect, with firms achieving a 73% improvement in logistics coordination. However, firms with fragmented supply chains struggled to implement cost-saving strategies effectively, suggesting a need for further investigation.

Methodology

The philosophy of positivism was utilized for this research study. Positivism philosophy is used when a study has the foundation of one or more theories and the purposes of the study and hypotheses are empirically tested and evaluated (Collins, 2009). The study used descriptive and explanatory design to achieve the research objective. Descriptive research design was used to outline the current state of electronic logistics adoption in FMCG firms in Nairobi and explanatory research design was used to determine how human resource competency influence implementation. This study utilized a cross-sectional research design. Data was collected at the same time period from different firms, and the findings were tested to explore the association between independent factors and dependent factors. The purpose of the study was to assess the effect of human resource competency to assess how human resource competency and firms' implementation of e-Logistics produced performance within the fast-moving consumer goods distributors in Nairobi City County, Kenya.

Population

The study targeted respondents from the following manufacturing firms: Bidco Africa Ltd, Unga Group Ltd, Pembe Flour Mills, Premier Food Industries, Kenafric Industries Ltd, Deepa Industries, Haco Industries Ltd, Flora Hygiene Products, Kapa Oil Refineries, East African Breweries, Kevian Kenya Ltd. The study targeted 309 respondents drawn from logistics, supply chain, procurement, finance, IT, marketing departments as indicated in Table 3.1 below:

Table 3.1: Targeted Population

Company	Logistics	Supply Chain	Procurement	Finance	IT	Marketing	Total
Bidco Africa Ltd	8	10	6	5	4	6	39
Unga Group Ltd	6	8	4	4	3	4	29
Pembe Flour Mills	5	6	3	3	2	3	22
Premier Food Industries	5	6	3	3	2	4	23
Kenafric Industries Ltd	7	8	4	4	3	5	31
Deepa Industries	5	6	3	3	2	3	22
Haco Industries Ltd	6	8	4	4	3	5	30
Flora Hygiene Products	5	6	3	3	2	3	22
Kapa Oil Refineries	6	8	4	4	3	4	29
East African Breweries	8	10	6	5	4	6	39
Kevian Kenya Ltd	5	6	3	3	2	4	23

Totals	66	82	43	41	30	47	309

Source: Researcher, 2025

Sampling

This research utilized stratified sampling with 6 clusters of departments to categorize respondents. According to Kothari (2004), stratified sampling accommodates the participation of all facets of a study population. The use of simple random sampling techniques was applied to select respondents from each of these clusters, and encompassed all of the FMCG manufacturing firms positioned in the city of Nairobi. In response to the researcher's engagement through conversations with respondents, the sample size was determined using the Yamane formula of 1964, which is sufficiently large to formulate responses from participants to identify that population that should yield the sufficient information for the purpose of improving the study. Therefore, the study calculated the sample size using the following Yamane (1964) formulas:

$$n = \frac{N}{1 + Ne^2}$$

- Where n = the desired sample size
- N= the total population (target population)
- e = the degree of accuracy given at 0.05 testing at 5% Confidence Level

$$174 = \frac{309}{1 + 309\ (0.05^2)}$$

Sample size n = 174

The researcher then collected data from 174 individuals based in different departments from 11 firms in Nairobi as outlined in table 3.2.

Table 3.2: Sample Population

Company	Targeted Population	Population by Proportion

Bidco Africa Ltd	39	39/309*174=22
Unga Group Ltd	29	29/309*174=16
Pembe Flour Mills	22	22/309*174=12
Premier Food Industries	23	23/309*174=13
Kenafric Industries Ltd	31	31/309*174=18
Deepa Industries	22	22/309*174=12
Haco Industries Ltd	30	39/309*174=17
Flora Hygiene Products	22	22/309*174=12
Kapa Oil Refineries	29	29/309*174=16
East African Breweries	39	39/309*174=22
Kevian Kenya Ltd	23	23/309*174=13
Totals	309	174

Source: Researcher, 2025

Data Collection Methods

Data collection in this study incorporated questionnaires. The structured questionnaires administered involved close-ended questions to improve collection of rich quantitative data for the purposes of conducting quantitative analysis. Questionnaires were used because they are more objective when collecting quantitative data. The questionnaire is divided into section A and B. Section A contained the general information while section B dealt with human resource competency influencing implementation of electronic logistics in FMCG manufacturing firms in Nairobi. The instrument used Likert scale measurement of 1—5 in which 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA). The questionnaires were sent out through google forms and supported by in-person follow ups to ensure efficiency in the data collection phase of the study.

Data Analysis

The data analysis was performed with the use of the Statistical Package for Social Sciences (SPSS) Version 25. This study utilized multiple linear regressions to predict the impact of the independent

variables on the dependent variable. The independent factor was the human resource competency and the dependent variable was the implementation of electronic logistics. The constructs related to each of the one variable were obtained as the measure of each of the variable of each firm, therefore, an index measuring human resource competency, and an index measuring the implementation of electronic logistics was the ratings for the constructs for each firm - based on respondents' evaluation of the situation. A multiple linear regression model is outlined below:

$Y = \beta 0 + \beta\ 1X1 + \varepsilon$

Where: Y= Implementation of Electronic Logistics

$\beta 0$ = Constant

$\beta 1$ to $\beta 4$ = Coefficients

X1 = Human Resource Competency

ε = Error term.

Pilot Study

The researcher conducted a pilot study to pretest the instrument. According to Ismail et al. (2017), the pilot study should be 10-30% of the sample size. The researcher conducted a pilot study before conducting the actual study to enhance the reliability of the questionnaires. To ensure a reasonable number of firms remain for the actual study, the pilot study was done in a neighboring county outside of metropolitan areas. The pilot study was conducted at Brava Food Industries Ltd which is located in Machakos outside Nairobi metropolitan area. It involved 17 respondents which is 10% of the actual sample size. The researcher used the feedback from the pilot study to eliminate ambiguities in the questionnaires.

Validity of the Research Instruments

To check the validity of questionnaires, content validity should be used (Mohajan, 2017). Mohajan (2017) stated the content validity of questionnaires involved enhancing the content of the questionnaire from opinions of experts. Thus, the researcher established validity of the questionnaire when the researcher consulted the supervisor and industry experts on the questions in the questionnaires. The researcher used feedback from the supervisor and industry experts to improve the questionnaire and reduce uncertainties. Then the researcher administered the

questionnaire to senior employees with knowledge on the issues being researched, such as managers, from all the specified FMCGs companies.

Reliability of the Research Instruments

Reliability of the research instrument according to Mohajan (2017) refers to the consistency of the findings of the research. The researcher used Cronbach's alpha to check for reliability of the questionnaire. Cronbach's alpha should range between 0.7 or more, if the internal consistency in the construct is to be considered acceptable. If Cronbach's alpha falls below 0.7, the researcher should disregard that item whose deletion would give the overall alpha the largest increase, in order to improve the internal consistency of the construct (Riege, 2003).

Diagnostic Tests

In order to utilize multiple linear regressions, the data set needs to meet multiple linear regression assumptions such as linearity, normality, homoscedasticity, and multicollinearity. Linearity is the tendency to have a linear trend and was tested through a scatter plot and correlation matrix of the variables. Linearity can be determined through visual inspection of the trends of the scatter. Normality is the tendency of the data to have a bell-shaped distribution which was tested through the Shapiro Wilk test where we want the significant value for the test to be greater than 0.05 for the data to be considered to be distributed normally. Homoscedasticity is the equal variance condition of the data and, was examined using a visual scatter plot (Osborne & Waters, 2002). Multicollinearity examines if independent variables have high correlations with each other. Multicollinearity was tested in this dissertation by examining Variance Inflation Factors (VIF) and tolerance statistics where no VIF had a value greater than 5 and all tolerance statistics had a value less than 1 for data that had no multicollinearity.

Ethical Issues in Research

Clark-Kazak (2017) argues that all research with human participants should have ethical considerations. Prior to field research work, the ST. Paul University review committee's approval was received and a permit from NACOSTI to conduct the research was received. Researcher adhered to the principle of informed consent. The researcher informed the participants of the purpose for the study and they gave their voluntary participation. The researcher never forced participants to take part in the study. The study ensured confidentiality. The questionnaires

remained anonymous and did not contain any identifying information, nor did the researcher disclose the predisposed identity of study participants.

Analysis and Presentation of Findings

Gender of the Respondents

The gender distribution within Nairobi's FMCG manufacturing firms, with females comprising 54% and males 46% of the workforce, presents both opportunities and considerations for the implementation of electronic logistics systems. This near-balanced gender composition suggests that e-logistics adoption strategies must be consciously inclusive to ensure equitable participation and benefit across all employees. Research indicates that gender can influence technology adoption patterns, with studies showing women may prefer more collaborative learning approaches and clearer demonstrations of practical benefits when adopting new systems.

Number of Years at the Firm

The tenure distribution in Nairobi's FMCG manufacturing firms reveals both opportunities and challenges for e-logistics adoption. With 27% of employees having 0 to 5 years, 64% with 6 to 10 years, 43% with 11 to 15 years, and 17% with over 15 years, the majority are mid-career professionals who blend institutional knowledge with adaptability. They should be the primary focus for digital transition efforts. Senior staff may resist change and require targeted engagement, while junior employees, though tech-savvy, lack influence but can act as peer trainers. Change management should emphasize enhancing existing roles, not replacing them.

Table 4.1: Job Designation

Description	Frequency	Percentages
Logistics Manager	45	29
Supply Chain Professional	21	14
Procurement Personnel	5	4
Finance Officer	11	7
IT Personnel	7	5
Marketing	62	41
Totals	151	100

The job designation distribution in Nairobi's FMCG manufacturing firms reveals critical dynamics for e-logistics adoption. Marketing staff make up 41%, Logistics Managers 29%, Supply Chain Professionals 14%, Finance 7%, IT Personnel 5%, and Procurement 4%. While logistics and supply chain roles are central to implementation, their limited proportion may hinder momentum. The dominance of marketing suggests a sales-driven focus, requiring better integration with logistics teams. Low IT and procurement representation signals potential capacity gaps in system integration and supplier alignment. For success, firms must foster cross-functional collaboration and equip key roles with digital competencies.

Table 4.2: Level of Education

Description	Frequency	Percentages
Certificate	25	16
Diploma	47	31
Degree	58	39
Post-Graduate	17	11
Other (Please Specify)	4	3
Totals	151	100

The study reveals that most employees in Nairobi's FMCG manufacturing firms hold degrees (39%) or diplomas (31%), suggesting a workforce with solid theoretical and practical grounding to support electronic logistics adoption. However, only 11% possess post-graduate qualifications, indicating a shortage of advanced skills critical for strategic implementation. Certificate holders (16%) and others (3%) may need targeted upskilling to engage effectively with digital systems. While the current education profile supports basic e-logistics deployment, firms must invest in digital literacy, leadership training, and strategic hiring to bridge high-level expertise gaps and drive full-scale adoption and optimization.

Human Resource Competency and Implementation of e-Logistics

The study objective was to assess the influence of human resource competency on the implementation of electronic logistics in FMCGs manufacturing firms in Nairobi. The results obtained are given in Table 4.1 as discussed.

Table 4.3: Frequency and Percentage Distribution of Human Resource Competency in e-Logistics

Statement	5	4	3	2	1	Total
1. Employees possess necessary technical skills for e-Logistics systems.	40 (26.5%)	55 (36.4%)	13 (8.6%)	25 (16.6%)	18 (11.9%)	**151**
2. Training programs are adequate to enhance competency.	24 (15.9%)	36 (23.8%)	12 (7.9%)	39 (25.8%)	40 (26.5%)	**151**
3. Management provides sufficient support for e-Logistics adoption.	34 (22.5%)	58 (38.4%)	12 (7.9%)	22 (14.6%)	25 (16.6%)	**151**
4. Employees can troubleshoot basic technical issues.	23 (15.2%)	35 (23.2%)	12 (7.9%)	41 (27.2%)	40 (26.5%)	**151**
5. Staff understand how e-Logistics improves efficiency.	46 (30.5%)	42 (27.8%)	13 (8.6%)	30 (19.9%)	20 (13.2%)	**151**
6. Organization invests in continuous skill development.	26 (17.2%)	34 (22.5%)	7 (4.6%)	47 (31.1%)	37 (24.5%)	**151**
7. Employees are motivated to use e-Logistics daily.	22 (14.6%)	33 (21.9%)	12 (7.9%)	42 (27.8%)	42 (27.8%)	**151**
8. HR policies encourage e-Logistics integration.	20 (13.2%)	28 (18.5%)	10 (6.6%)	53 (35.1%)	40 (26.5%)	**151**

The survey of 151 respondents reveals key strengths and challenges in adopting electronic logistics (e-Logistics) in FMCG firms. While 62.9% agreed employees possess the necessary technical skills, 52.3% felt training programs were inadequate, and 53.7% indicated a lack of troubleshooting abilities. Management support was strong at 60.9%, but only 38.4% felt confident in resolving technical issues, pointing to a disconnect between support and execution. Although

58.3% acknowledged e-Logistics' efficiency, 55.6% cited insufficient investment in continuous skill development. Motivation remains low, with just 36.5% using the system daily and 61.6% criticizing HR policies. These findings suggest the need for targeted, practical training, policy alignment, and motivational strategies to foster full e-Logistics integration. Employee empowerment must accompany technological investment for successful digital transformation.

Discussion of Key Findings and Recommendations

Demographic Information

The demographic profile of respondents from Nairobi's FMCG manufacturing firms offers important insights for implementing electronic logistics systems. The gender distribution is nearly balanced. This inclusive representation highlights the need for gender-sensitive e-logistics strategies, recognizing that women may benefit from collaborative training methods and clear demonstrations of system benefits. In terms of tenure, a majority of employees have 6 to 10 years of experience, reflecting a skilled, adaptable workforce well-positioned to lead digital transitions. However, the presence of long-serving staff may pose resistance to change, requiring targeted engagement approaches. Regarding job designations, marketing professionals dominate, followed by logistics managers and supply chain professionals. This mix suggests the need for stronger collaboration between customer-facing and logistics teams, especially given the low representation of IT and procurement roles critical for e-logistics. Education levels further support adoption readiness, with most employees holding degrees or diplomas, though the low number of postgraduates underscores a gap in advanced strategic capabilities. Overall, the workforce is well-suited for digital transition, provided proper support and upskilling are prioritized.

Human Resource Competency on the Implementation of Electronic Logistics

The study examining the influence of human resource (HR) competency on e-logistics implementation in Nairobi's FMCG sector reveals critical insights into workforce readiness and organizational support for digital transformation. While a majority of employees possess foundational technical skills for e-logistics systems, significant gaps exist in training adequacy, troubleshooting capabilities, and continuous skill development. Management support for e-logistics adoption is relatively strong, yet this does not fully translate into employee confidence or motivation, indicating a disconnect between leadership commitment and frontline execution.

Additionally, while employees recognize the efficiency benefits of e-logistics, many feel that HR policies and training programs fail to adequately support their competency development or incentivize daily system use.

These findings align with but also extend previous scholarly research on digital logistics adoption. Earlier studies by Lummus and Vokurka (1999) and Christopher (2016) emphasized the importance of workforce readiness in supply chain digitization, but this study provides deeper insights into specific competency gaps that particularly in troubleshooting and practical application that hinder seamless implementation. The observed discrepancy between employee awareness of e-logistics benefits and their lack of motivation to use these systems daily echoes concerns raised by Wang et al. (2020) about the "knowing-doing gap" in technology adoption. However, this study uniquely highlights how inadequate HR policies and sporadic training exacerbate this gap, suggesting that technical skills alone are insufficient without structural support and motivational incentives.

The research also corroborates Kembro et al.'s (2018) findings on the role of middle management in bridging strategic vision and operational execution. While leadership support is present, its failure to translate into employee confidence underscores the need for more effective intermediary training and communication channels. A novel contribution of this study is its focus on the motivational and policy-related barriers to e-logistics adoption, areas that have received less attention in prior literature. The findings suggest that future strategies must integrate technical upskilling with cultural and policy reforms to foster sustained engagement.

Conclusions

The study reveals several critical conclusions regarding human resource factors in e-logistics adoption within Nairobi's FMCG sector. First, while baseline technical competency exists among employees, significant gaps persist in practical application skills, particularly in system troubleshooting and daily operational use. This suggests that current training programs emphasize theoretical knowledge over hands-on, scenario-based learning necessary for seamless implementation.

Secondly, the research uncovers a troubling disconnect between management support and frontline execution. Despite leadership endorsement of digital transformation, this commitment fails to fully translate into employee confidence or motivation. This indicates potential breakdowns in middle

management's ability to bridge strategic vision with operational reality, highlighting the need for more effective communication channels and supervisory training. Third, the study identifies a paradox in workforce perceptions: employees recognize the value of e-logistics for operational efficiency yet remain unmotivated to consistently utilize these systems. This "knowing-doing gap" points to inadequate incentive structures and HR policies that fail to align individual motivations with organizational digital transformation goals.

The findings collectively suggest that successful e-logistics implementation requires moving beyond technical skill development to address broader organizational and cultural factors. Future initiatives must integrate three critical components: (1) competency-based training focused on practical application, (2) leadership development to ensure consistent support across all organizational levels, and (3) motivational frameworks that reward digital proficiency and innovation. These human-centric considerations are equally as important as the technological investments themselves for achieving sustainable digital transformation in logistics operations.

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