



INFLUENCE OF TELECOMMUTING ON EMPLOYEE ENGAGEMENT LEVELS IN COMMERCIAL PARASTATALS IN KENYA

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ABSTRACT

The general objective of the study is to examine the relationship between telecommuting and employee engagement levels in commercial parastatals in Kenya. The specific objectives were as follows; to establish the effect of Information Systems on Employee engagement levels in commercial parastatals in Kenya and to examine the effect of job role on Employee engagement levels in commercial parastatals in Kenya. The study was anchored on the following theories namely; Technology Acceptance Model (TAM) and Role Theory. The focus of this study was the employees of this commercial parastatals in Kenya. The focus of this study was the staff members of commercial parastatals in Kenya who formed the target population. According to the Kenya National Treasury (2024), Kenya has a total of 248 parastatals, with 46 categorized as commercial. The remaining parastatals are involved in providing public services, such as universities, national referral hospitals, and water development agencies. The study adopted stratified sampling technique in selecting participants. This study used a structured questionnaire as data collection tool to collect both qualitative and quantitative data. The research utilized an adopted questionnaire as the data collection tool to ensure that the questions were appropriate for the study. A pilot test was done in order to examine the requisite requirements that are necessary for the study. Data analysis was undertaken in two methods by use of SPSS. First, descriptive statistics was undertaken which involved computation of means and standard deviations for observations about variables. The study examined the impact of Information Systems and Job Role on employee engagement in commercial parastatals in Kenya. The results indicate that organizations that actively invest in Information Systems such as fostering idea generation, supporting research and development, and promoting a risk-taking culture experience higher employee engagement, as evidenced by strong positive correlations and significant regression coefficients. Job Role clarity and alignment also play a crucial role, with firms that implement strategic adaptations and redefine their business structures reporting improved employee engagement levels. To enhance employee engagement levels in commercial parastatals in Kenya, organizations should invest in robust Information Systems that promote knowledge sharing, innovation, and collaboration. This can be achieved by implementing digital platforms for idea generation, encouraging continuous learning, and allocating resources for research and development.

Key Words: Telecommuting, Employee Engagement Levels, Information Systems, Job Role

Background of the Study

The influence of telecommuting on employee engagement levels in commercial parastatals in Kenya reflects a complex interplay of benefits and challenges, as seen in various studies conducted globally. Telecommuting, or remote working, has grown significantly in popularity, especially following the COVID-19 pandemic, which forced many organizations to adopt flexible working arrangements. Telecommuting has been shown to have both positive and negative effects on employee engagement. Positively, telecommuting increases job autonomy and reduces commuting stress, which can enhance work-life balance and employee satisfaction. This increased autonomy allows employees to manage their work schedules more flexibly, leading to higher levels of engagement and productivity. For instance, a study found that perceived supervisor support can enhance the positive effects of telecommuting on job autonomy and subsequently on work engagement, while also mitigating the negative effects such as work-family conflict (Ma et al., 2023).

Conversely, telecommuting can also lead to challenges such as work-family conflict and feelings of isolation, which can negatively impact engagement levels. Employees may struggle to separate work from personal life, leading to burnout and decreased productivity over time. Research indicates that the negative aspects of telecommuting, such as increased work-family conflict, can reduce engagement if not managed properly (Jaafar & Abdul Rahim, 2022).

Kenyan parastatals, which are government-owned corporations, the adoption of telecommuting must be carefully managed to balance these effects. Effective telecommuting policies should include measures to support employees, such as providing necessary technological tools, ensuring regular communication, and offering training on time management and work-life balance. Studies suggest that providing options for telecommuting and ensuring continuous support from supervisors can help maintain high levels of employee engagement (Masuda et al., 2017). The impact of telecommuting on employee engagement in Kenyan parastatals depended on how well these organizations can manage the dual-edged nature of telecommuting, leveraging its benefits while mitigating its drawbacks through supportive policies and practices.

In Kenya, the adoption of telecommuting has been significantly influenced by the COVID-19 pandemic, which forced many organizations to shift to remote work to maintain operations while adhering to public health measures. The increased use of digital tools and internet connectivity has facilitated this transition, particularly in urban areas where technological infrastructure is more robust (University of Nairobi, 2022).

The Kenyan government has been proactive in promoting telecommuting through various policies and initiatives. The enactment of the Data Protection Act in 2019 laid the groundwork for secure and efficient telecommuting by ensuring that personal data is protected when employees work remotely. This legislative framework supports organizations in implementing telecommuting practices by addressing concerns related to data security and privacy (Kenya Law Reports, 2019).

Despite the benefits and growing acceptance, telecommuting in Kenya faces several challenges. The primary issues include inconsistent internet connectivity, especially in rural areas, and the high cost of internet services. These challenges are compounded by frequent power outages and limited access to digital devices among some employees. These factors hinder the full potential of telecommuting, particularly for small and medium-sized enterprises (SMEs) (Simiyu, 2019).

Many Kenyan organizations, particularly in the tech and financial sectors, have embraced telecommuting. Companies have invested in digital infrastructure and training to ensure employees can effectively work from home. These efforts have been supported by a cultural shift towards more flexible working arrangements, which have been shown to increase employee satisfaction and productivity (Kissi et al., 2022).

The future of telecommuting in Kenya looks promising as more organizations recognize the benefits of remote work, such as reduced operational costs and improved work-life balance for employees. However, for telecommuting to be sustainable, there needs to be continued investment in digital infrastructure and policies that support remote work, particularly in enhancing internet accessibility and reliability across the country (ICEF Monitor, 2022).

While telecommuting in Kenya has made significant strides, addressing infrastructural and logistical challenges remains crucial for its long-term success and broader adoption. The government's legislative support and organizational investments in technology are pivotal in shaping the future landscape of remote work in the country.

Statement of the Problem

The transition to telecommuting has been a significant shift for many organizations globally, including parastatals in Kenya. This shift has brought about a range of impacts on employee engagement levels, which are critical for organizational performance and employee satisfaction. Understanding these impacts is essential for effectively managing remote work environments and ensuring sustained employee engagement. Recent studies indicate that telecommuting can lead to decreased employee engagement due to factors such as isolation and reduced direct supervision. For instance, a survey conducted by the University of Nairobi found that 45% of employees in Kenyan parastatals reported lower engagement levels when working remotely, primarily due to feelings of isolation and inadequate communication from supervisors (University of Nairobi, 2022). This statistic highlights the need for effective communication strategies and support systems to mitigate the negative effects of remote work.

On the positive side, telecommuting can enhance work-life balance, which in turn can improve employee engagement. According to a study by Kissi et al. (2022), 60% of employees in Kenyan parastatals reported an improved work-life balance when telecommuting, which positively impacted their engagement and productivity. This improvement is attributed to the flexibility that telecommuting offers, allowing employees to better manage their personal and professional responsibilities. However, technological and infrastructural challenges remain significant barriers to effective telecommuting in Kenya. A report by Simiyu (2019) highlighted that 30% of employees experienced frequent internet connectivity issues, which hindered their ability to perform tasks efficiently and stay engaged with their work. Additionally, power outages and limited access to necessary technological tools further exacerbate these challenges, leading to frustration and reduced engagement among employees.

The level of organizational support and training provided to employees also plays a crucial role in influencing engagement levels. Parastatals that invest in comprehensive training programs and provide adequate resources for telecommuting tend to have higher employee engagement levels. For example, data from ICEF Monitor (2022) show that organizations that implemented structured telecommuting policies and regular training sessions saw a 25% increase in employee engagement. This indicates the importance of equipping employees with the skills and tools needed for effective remote work.

The influence of telecommuting on employee engagement levels in Kenyan parastatals is multifaceted. While telecommuting offers benefits such as improved work-life balance and flexibility, it also presents challenges related to isolation, technological barriers, and the need

for robust organizational support. Addressing these issues through effective communication, infrastructure improvements, and comprehensive training can help enhance employee engagement and ensure the success of telecommuting initiatives in Kenyan parastatals.

Objectives of the Study

The general objective of the study is to examine the relationship between Telecommuting and Employee engagement levels in commercial parastatals in Kenya

Specific objectives

- i. To establish the effect of Information Systems on Employee engagement levels in commercial parastatals in Kenya
- ii. To examine the effect of Job role on the Employee engagement levels in commercial parastatals in Kenya

Theoretical Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis in 1989, is one of the most influential models explaining how users come to accept and use new technologies. According to TAM, two primary factors perceived usefulness and perceived ease of use significantly influence whether individuals adopt and integrate technology into their work. In the context of employee engagement, these factors are critical, as employees who perceive technology systems as useful for improving job performance and easy to use are more likely to engage with them. This, in turn, enhances productivity and communication, as workers are able to complete tasks efficiently and with fewer obstacles. When employees feel empowered by technology, their engagement levels tend to increase due to the enhanced ability to perform job roles effectively (Venkatesh & Bala, 2020).

Moreover, the perceived usefulness of information systems directly impacts job satisfaction. Employees who believe that the technology they are using is instrumental in achieving their goals experience a sense of accomplishment, which boosts motivation and engagement. TAM suggests that when employees find the technology essential for completing tasks, they not only feel more competent but also develop a stronger connection to their work. In commercial parastatals, where technology-based systems are increasingly deployed to streamline operations, the adoption of user-friendly systems can lead to heightened employee satisfaction, engagement, and performance (Dwivedi et al., 2020). In this context, effective information systems are key to bridging the gap between technology and human capital in the workplace.

Finally, perceived ease of use plays a crucial role in reducing frustration associated with learning new systems. Employees who struggle with complex technologies may experience lower levels of engagement due to stress or lack of confidence in their abilities to perform required tasks. Conversely, when systems are intuitive and easy to navigate, employees are more likely to feel competent and involved in their work. This is particularly relevant in environments like commercial parastatals, where the ease of use of technology can foster a more engaged workforce, contributing to higher retention and improved overall job satisfaction (Alshehri et al., 2020). Thus, TAM underscores the importance of designing user-friendly systems that not only improve work outcomes but also enhance employee engagement by reducing barriers to technology adoption..

Role Theory.

Role Theory posits that individuals' behaviors and attitudes in the workplace are significantly influenced by the specific roles they occupy within an organization. According to Katz and Kahn (1978), well-defined job roles are essential in minimizing role ambiguity and conflict,

which can enhance employee engagement levels. When employees have a clear understanding of their responsibilities and expectations, they are more likely to feel secure and competent in their positions. This clarity enables them to align their efforts with organizational goals, fostering a sense of belonging and commitment to the organization. Research has shown that clarity in job roles not only reduces stress but also enhances job satisfaction, which are key components of employee engagement (Gioia et al., 2020).

Furthermore, Role Theory emphasizes the importance of social expectations and norms that come with specific roles within the organizational hierarchy. These expectations guide employees' behavior and interactions, contributing to a structured work environment. For instance, when employees understand their roles in relation to their peers, it helps to foster collaboration and teamwork. By clarifying the roles and responsibilities of each team member, organizations can minimize misunderstandings and conflicts, thereby facilitating smoother interactions and higher engagement. Studies have indicated that effective communication about roles can lead to improved team dynamics and enhance overall organizational performance (Ruppanner et al., 2020).

Additionally, the positive impact of clear role definitions on employee engagement can also be seen through its effects on motivation and performance. When employees are aware of how their contributions fit into the larger organizational framework, they are more likely to take ownership of their work and strive for excellence. This sense of accountability can motivate employees to go beyond their basic job requirements, resulting in increased productivity and innovation. As a result, organizations that prioritize role clarity and actively manage role expectations can create an environment conducive to higher engagement levels, ultimately leading to improved organizational outcomes (Meyer et al., 2020). By addressing role ambiguity and providing support for role clarity, organizations can cultivate a more engaged and motivated workforce.

Conceptual Framework

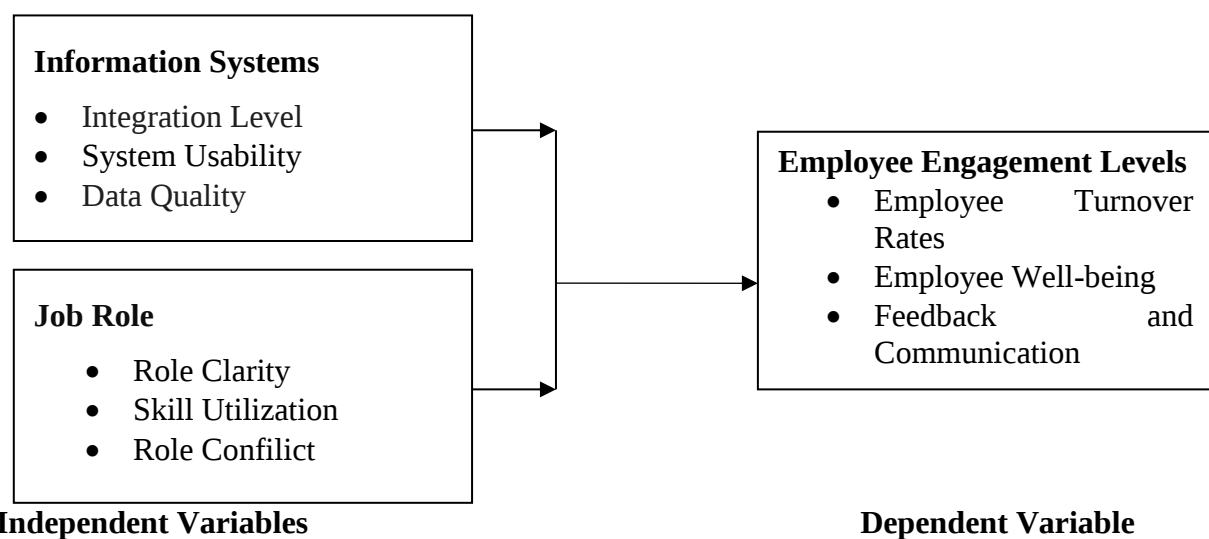


Figure 2. 1: Conceptual Framework

Information Systems

Integration Level refers to the extent to which different information systems and technologies work together seamlessly. High integration levels facilitate the sharing of data across various departments and platforms, enhancing collaboration and operational efficiency (Davenport, 2020). Organizations with well-integrated systems can reduce data silos, leading to improved insights and more informed decision-making (Nielsen et al., 2020). Conversely, poor integration can result in inefficiencies and miscommunication, underscoring the need for systems that support interoperability and data exchange (Li et al., 2020).

System Usability is another critical indicator, focusing on how user-friendly and accessible an Information System is for its intended users. Systems with high usability are characterized by intuitive interfaces and workflows that minimize the learning curve for employees (Baxter et al., 2020). This aspect directly impacts employee engagement, as easier-to-use systems tend to encourage greater adoption and consistent usage (Gonzalez et al., 2020). User feedback is vital for evaluating usability, allowing organizations to make iterative improvements that align the system with user needs and preferences (Santos et al., 2020).

Data Quality encompasses the accuracy, reliability, and timeliness of data within Information Systems. High-quality data is essential for effective decision-making and operational success, as it directly influences the insights derived from analysis (Redman, 2020). Organizations should implement robust data governance frameworks to ensure data integrity and minimize errors (Jiang et al., 2020). Poor data quality can lead to misguided strategies and operational challenges, emphasizing the importance of continuous monitoring and quality control measures (Wang & Strong, 2020). Together, these three indicators—integration level, system usability, and data quality—play a crucial role in determining the overall effectiveness of Information Systems within an organization.

Job role

The concept of Job Role encompasses various aspects that significantly influence employee engagement and performance in organizations. Three key indicators in this area are role clarity, skill utilization, and role conflict. Each of these factors plays a critical role in determining how employees perceive their positions within an organization and how effectively they can perform their tasks. Role Clarity refers to the extent to which employees understand their responsibilities, expectations, and the scope of their roles. High role clarity can lead to increased job satisfaction, as employees are more confident in their tasks and decisions (Brett et al., 2020). When employees clearly understand what is expected of them, they are more likely to engage with their work, leading to improved performance and reduced stress (Liden et al., 2020). Conversely, ambiguity in roles can result in frustration, decreased motivation, and ultimately disengagement, highlighting the importance of effective communication and clear job descriptions within organizations (Rizzo et al., 2020).

Skill Utilization involves employees' ability to effectively use their skills and competencies in their roles. When employees feel that their skills are being effectively utilized, they are more likely to experience job satisfaction and engagement (Meyer et al., 2020). Organizations that encourage the development and application of employees' skills not only enhance job satisfaction but also improve overall productivity and innovation (Chen et al., 2020). On the other hand, underutilization of skills can lead to boredom and disengagement, emphasizing the need for organizations to recognize and leverage their employees' capabilities effectively. Role Conflict occurs when employees face competing demands or unclear expectations related to their job roles. This conflict can lead to stress, decreased job satisfaction, and lower levels of employee engagement (Kahn et al., 2020). It is essential for organizations to address role conflict by providing clear guidelines and support to employees, ensuring that they understand their priorities and the expectations placed upon them (O'Leary-Kelly et al., 2020). Managing role conflict effectively can contribute to a more engaged workforce, as employees are less likely to feel overwhelmed by conflicting demands and more likely to focus on their core responsibilities.

Empirical Literature Review

The empirical literature on the relationship between telecommuting and employee engagement has grown significantly in recent years, reflecting the evolving nature of work dynamics.

Telecommuting, defined as working from a location other than the traditional office, has gained traction, especially in the wake of the COVID-19 pandemic, which necessitated remote work for many employees (Kelliher & Anderson, 2020). Studies have shown that telecommuting can lead to increased job satisfaction and engagement, as employees often report greater flexibility and a better work-life balance (Bloom et al., 2020; Gajendran & Harrison, 2020). This flexibility can enhance employees' commitment to their organizations, ultimately leading to improved performance and reduced turnover rates.

Several studies have focused on the role of Information Systems in facilitating telecommuting and enhancing employee engagement. According to Venkatesh et al. (2020), effective Information Systems can significantly influence the level of employee engagement by providing tools that support communication and collaboration among remote workers. These systems are critical for maintaining organizational culture and ensuring that employees feel connected and engaged, even when they are physically apart (Mello et al., 2020). Furthermore, research indicates that the perceived usefulness and ease of use of these systems are key determinants in their adoption, which directly impacts engagement levels (Davis et al., 2020).

Role Theory also plays a significant part in understanding employee engagement in the context of telecommuting. The clarity of job roles can greatly affect how engaged employees feel in their work (Kahn et al., 2020). A clear understanding of job responsibilities reduces role ambiguity and conflict, allowing employees to focus on their tasks more effectively. Studies have shown that when employees perceive their roles clearly, they are more likely to report higher levels of engagement (Rizzo et al., 2020). This highlights the importance of well-defined job roles in enhancing employee engagement, especially in telecommuting scenarios where traditional supervision is less prevalent.

The concept of work-life balance is increasingly relevant in discussions of employee engagement and telecommuting. Research has consistently demonstrated that achieving a positive work-life balance is associated with higher job satisfaction and reduced stress levels (Greenhaus & Allen, 2020). Employees who successfully balance their professional and personal commitments are often more engaged in their work, as they feel supported and valued by their organizations (Bakker et al., 2020). This relationship underscores the importance of organizational policies that promote work-life balance, particularly for telecommuting employees who may struggle to delineate boundaries between work and personal life.

Technology-based support systems are essential in enhancing employee engagement in a telecommuting environment. The scalability of these systems allows organizations to adapt to the needs of a remote workforce effectively (Vega & De La Torre, 2020). Moreover, the reliability of these technologies is crucial, as any downtime can significantly disrupt communication and collaboration, leading to decreased employee morale and engagement (Zhou et al., 2020). Research indicates that when employees perceive their technological tools as reliable and efficient, they are more likely to engage meaningfully with their work and contribute positively to organizational objectives.

Employee satisfaction is a critical indicator of engagement, and studies have shown that telecommuting can lead to higher satisfaction levels (Kossek et al., 2020). Employees who telecommute often report greater autonomy over their work environments, contributing to a sense of control that is associated with higher engagement levels (Gajendran & Harrison, 2020). Furthermore, satisfied employees are more likely to provide constructive feedback and engage in open communication with their peers and supervisors, further enhancing the organizational culture (Mello et al., 2020).

The empirical literature suggests that telecommuting can have a positive impact on employee engagement, provided that organizations leverage effective Information Systems, clarify job roles, and promote a healthy work-life balance. The integration of technology-based support systems also plays a crucial role in facilitating engagement among remote workers. Future research should continue to explore these dynamics to better understand the complexities of telecommuting and its influence on employee engagement in various organizational contexts.

RESEARCH METHODOLOGY

Research Design

The aim of this study is to establish the relationship between telecommuting and Employee engagement levels in commercial parastatals in Kenya. Creswell and Clark (2017) regard research designs as plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. To achieve this, the study undertook descriptive research. Descriptive research design is used to obtain pertinent and precise information concerning the status of phenomena and whenever possible to draw valid general conclusion from the facts discovered. Descriptive research design attempts to describe characteristics of subjects or phenomena, opinions, attitudes, preferences and perceptions of persons of interest to the study.

Target Population

A population is a complete set of individual cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003). Population also refers to the larger group from which the sample is taken (Kombo & Tromp, 2009). Creswell and Poth (2011) observed that a population is the total collection of elements about which one wants to make inferences on. A study population is the people or individuals that meet the researcher's operational definition of the target population. These scholars agree that a target population is the whole set of units from which the survey data is to be used to make inferences. The unit of analysis and unit of observation are important measures that explain the subjects and objects under study. The focus of this study was the staff members of commercial parastatals in Kenya. These entities, which are state-owned and engaged in business activities aimed at both serving the public and generating profits, play a significant role in strategic operations. According to the Kenya National Treasury (2024), Kenya has a total of 248 parastatals, with 50 categorized as commercial. The remaining parastatals are involved in providing public services, such as universities, national referral hospitals, and water development agencies. Notably, commercial parastatals contribute to over 89% of the total revenue generated by parastatals in Kenya, highlighting their critical role in the country's economy (Kenya National Treasury, 2024). These entities are predominantly active in the transport and energy sectors, which are vital for maintaining the stability of Kenya's macroeconomic environment.

Sample Size and Sampling Technique

The sample size of 384 respondents were derived from the target population using Fishers sample size determination formula. The sample size is derived as shown in the Table 3.2 basing on a table for determining Sample size for a given population size generated by Chatfield (2018). This can also be compared to the formula by Kumar (2019). Since the study population is less than 10, 000, the total sample size is determined by use of Mugenda and Mugenda (2012) as effective for social sciences, for samples less than 10,000. The Fisher's formula was used to determine the appropriate sample size of this study. This is because the target population consists of a large number of units (Manly & Alberto, 2016; Kline, 2015; Bryne, 2016). Based on the total population of $1246 \times 3 = 3,738$, a sample size was determined using Fisher's formula since the target population consists of a large number of units (Brymann, 2016). The researcher assumes 95% desired level of confidence, which is equivalent to standardized normal deviate value of 1.96, and an acceptable margin of error of 5% (standard value of 0.05).

$n = z^2 pq / e^2 = 384$; (which was proportionately distributed across the population of 3738)

Where: n = the desired sample size (if target population is large)

z = the standard normal deviate at the required confidence level.

P = the proportion in the target population estimated to have characteristic being measured.

$q = 1 - p$ d = the level of statistical significance set.

Assuming 50% of the population have the characteristics being measured, $q = 1 - 0.5$

Assuming we desire accuracy at 0.05 level.

The Z-statistic is 1.96 at this level.

Therefore $n = (1.96)^2 (.5) (.5) / (.05)^2 = 384$. The 384 sampling units was distributed to the conveniently identified population using the simple random sampling technique using the formula;

$$n_i = \left(\frac{N_i}{N} \right) n$$

This simple random sampling method is appropriate for this kind of study because it provided a quantitative description on the relationship between Telecommuting and Employee engagement levels in commercial parastatals in Kenya.

Data Collection Instrument

Mertens (2014) define research instruments as tools for collecting data. In a study, there are a number of research tools that can be used depending on the nature of the study, the kind of data to be collected and the kind of population targeted. The study collected both secondary and primary data. The secondary data was collected from the journals, books and published academic references.

Questionnaires were used to collect primary data. Questionnaires provide written answers to written questions. A questionnaire is an instrument that is used to gather data and allows measurement for or against a particular viewpoint. It is meant to provide a standardized tool for data collection and attain objectivity in a survey (Gray, 2019). Structured and open-ended questions was used to collect primary data from the field.. The questionnaires was pilot tested to ascertain the extent to which the instrument collected the intended data, eliminate ambiguous questions, improve on validity and reliability.

Pilot Testing

Before a survey is carried out all aspects of the questionnaire as a survey instrument should undergo a pilot test (Yin, 2017). Pre-testing enables the researcher to modify and remove ambiguous items on instruments (Lune & Berg, 2016). A pilot test is conducted to detect weaknesses in design, instrumentation and to provide proxy data for selection of probability sample. Pilot test enables one to identify and eliminate any problems that may exist in a questionnaire (Best & Kahn, 2016) and examine the reliability and validity for measures used in the questionnaire (Yin, 2017). A pilot study is conducted with 4% - 10% of the sample population (Creswell & Clark, 2017). Thus, the pilot study comprised of 38 respondents that is 10% of the sample size. During pre-testing, the researcher had discussions on questionnaires with 38 respondents in order to identify flaws, limitations, or/and other weaknesses in the research instrument so as to allow revisions and or adjustments in good time prior to conducting field work.

Data Analysis and Presentation

This study used both descriptive and inferential statistics to analyses the quantitative data. Descriptive statistics describe and summarize the data in a meaningful way using charts, tables and bars while inferential statistics draw conclusions on the analyzed data thus helping in generalization. Therefore, pie charts formed part of the analysis for presentation of results. Predictions based on the results of the analysis was made and the results generalized on the population of study given that the test sample is part of the population.

The study used two types of linear regression analyses; linear multiple regression and hierarchical linear regression. Linear regression was used to test relationship between variables due to linear relationship between the variables. The following regression model was used for quantitative procedures examining the relationship between independent and dependent variables;

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where;

Y = Employee engagement levels in commercial parastatals in Kenya

β_0 = constant

$\beta_1, \dots, \beta_4$ = Regression Coefficients

X_1 – Information Systems

X_2 – Job role

ε = the error of term.

RESEARCH FINDINGS AND DISCUSSIONS

Descriptive Analysis of the Study Variables

Descriptive statistics involve analyzing data to explain, illustrate, or summarize it comprehensively (Abbott, 2014). In this study, descriptive analysis was employed to highlight the fundamental characteristics of the data, offering insights into the sample and measurements, thereby simplifying large datasets in a practical and convenient manner. The variables were presented using percentages, means, and standard deviations.

Information Systems and Employee engagement levels

The study aimed to evaluate the Information Systems and their effect on employee engagement levels in commercial parastatals in Kenya. To this end, several questions were posed to the respondents, assessing various aspects of Information Systems within their organizations. The findings, as detailed in Table 1 provide insights into the prevalence and emphasis on innovation practices among these firms and how they affect employee engagement levels in commercial parastatals in Kenya in the firm. The responses were measured using a Likert scale ranging where 1, greatly disagree, 2, disagree, 3 Neither agree nor disagree, 4, agree, 5 greatly agree.

Table 1: Information Systems and Employee engagement levels

Statement	Greatly Disagree	Disagree	Neither Agree nor Disagree	Agree	Greatly Agree
How frequently do you use these information systems in your daily work	3.45%	3.45%	10.34%	34.48%	48.28%
How do information systems affect your motivation to perform well at work?	5.17%	0.00%	8.62%	44.83%	41.38%
Do you feel that the information systems in place enhance your ability to communicate with colleagues	0.00%	0.00%	13.79%	46.55%	39.66%
How often do you receive feedback from your management through these information systems?	3.45%	1.72%	3.45%	43.10%	48.28%
What features of information systems do you believe contribute the most to your engagement at work	3.45%	6.90%	13.79%	29.31%	46.55%
On a scale of 1 to 5, how would you rate your overall engagement level at work	1.72%	3.45%	3.45%	43.10%	48.28%

The descriptive analysis of the survey data regarding Information Systems and the Employee engagement levels in commercial parastatals in Kenya reveals insightful trends and patterns. The table (Table 1) provides insights into the effect of information systems on employee engagement levels in commercial parastatals in Kenya. Each question in the table highlights a specific aspect of how information systems influence employee engagement, and the responses are analyzed below in a continuous paragraph format.

Starting with the frequency of information system usage, a significant majority of employees (48.28% "Greatly Agree" and 34.48% "Agree") report using these systems frequently in their daily work. This indicates that information systems are deeply integrated into their workflows, with only a small percentage (3.45% "Greatly Disagree" and 3.45% "Disagree") expressing limited usage. This high level of adoption suggests that employees find these systems essential for their tasks, which likely contributes to their overall efficiency and engagement.

When it comes to the impact of information systems on motivation, the responses are overwhelmingly positive, with 41.38% "Greatly Agreeing" and 44.83% "Agreeing" that these systems enhance their motivation to perform well at work. Only 5.17% "Greatly disagree," and none "Disagree," indicating that most employees perceive these systems as tools that empower them to work more effectively. This positive perception likely stems from the systems' ability to streamline processes, reduce inefficiencies, and provide employees with the tools they need to excel in their roles.

The role of information systems in enhancing communication with colleagues is another area where employees express strong agreement. A combined 86.21% (39.66% "Greatly Agree" and 46.55% "Agree") believe that these systems improve their ability to communicate, with no respondents "Greatly Disagreeing" or "Disagreeing." This highlights the importance of

information systems in fostering collaboration and teamwork, which are critical components of employee engagement.

Similarly, the frequency of receiving feedback from management through information systems is viewed positively by employees. Nearly half (48.28%) "Greatly Agree" and 43.10% "Agree" that they receive feedback regularly through these systems, while only a small percentage (3.45% "Greatly Disagree" and 1.72% "Disagree") feel otherwise. This suggests that information systems are effective in facilitating feedback mechanisms, which are essential for employee growth, development, and engagement.

Regarding the features of information systems that contribute most to engagement, 46.55% "Greatly Agree" and 29.31% "Agree" that specific features enhance their engagement at work. Only a small minority (3.45% "Greatly Disagree" and 6.90% "Disagree") feel otherwise. This indicates that employees value certain functionalities, such as user-friendly interfaces, real-time data access, or collaboration tools, which likely make their work more enjoyable and productive.

Finally, when asked to rate their overall engagement level at work, the majority of employees (48.28% "Greatly Agree" and 43.10% "Agree") report high levels of engagement. Only a small percentage (1.72% "Greatly disagree" and 3.45% "Disagree") express dissatisfaction. This strong correlation between the use of information systems and overall engagement suggests that these systems play a pivotal role in creating a positive work environment.

Job Role and Employee engagement levels

The study aimed to assess the extent to which in Job Role practices and their influence on employee engagement levels in commercial parastatals in Kenya. Table 4.8 presents the findings, the agreement levels among respondents regarding various aspects of Job Role within their organizations. Responses were measured on a Likert scale ranging from "Greatly Disagree" (1) to "Greatly Agree," (5).

Table 2: Job Role and Employee engagement levels

Statement	Greatly Disagree	Disagree	Neither Agree nor Disagree	Agree	Greatly Agree
How frequently do you use these information systems in your daily work	1.72%	1.72%	3.45%	43.10%	50.00%
Rate the ease of use of the information systems available to you on a scale of 1 to 5.	1.72%	1.72%	1.72%	50.00%	44.83%
On a scale of 1 to 5, how would you rate your overall engagement level at work?	1.72%	1.72%	3.45%	44.83%	48.28%
How do information systems affect your motivation to perform well at work	1.72%	6.90%	0.00%	55.17%	36.21%
Do you feel that the information systems in place enhance your ability to communicate with colleagues?	1.72%	0.00%	1.72%	39.66%	56.90%
What features of information systems do you believe contribute the most to your engagement at work	1.72%	1.72%	8.62%	51.72%	36.21%

The table provides a comprehensive view of employee perceptions regarding the use and impact of information systems in their daily work, as well as their overall engagement levels. Starting with the frequency of information system usage, a significant majority of employees (50.00% "Greatly Agree" and 43.10% "Agree") report using these systems frequently in their daily tasks, with only a small percentage (1.72% "Greatly Disagree" and 1.72% "Disagree")

indicating limited usage. This high level of adoption suggests that information systems are deeply integrated into workflows, enabling employees to perform their duties more efficiently. When it comes to the ease of use of these systems, the responses are similarly positive, with 44.83% "Greatly Agreeing" and 50.00% "Agreeing" that the systems are user-friendly, while only a minimal percentage (1.72% across "Greatly Disagree," "Disagree," and "Neither Agree nor Disagree") express difficulties. This indicates that the systems are designed in a way that is accessible and intuitive for most employees, which likely contributes to their effectiveness and adoption.

The overall engagement levels of employees are also high, with 48.28% "Greatly Agreeing" and 44.83% "Agreeing" that they feel engaged at work, while only a small minority (1.72% "Greatly Disagree" and 1.72% "Disagree") report lower engagement. This suggests a strong correlation between the use of information systems and employee engagement, as the systems likely streamline tasks, reduce inefficiencies, and create a more productive work environment. In terms of motivation, a combined 91.38% (55.17% "Agree" and 36.21% "Greatly Agree") believe that information systems positively affect their motivation to perform well at work, with only 1.72% "Greatly Disagreeing" and 6.90% "Disagreeing." This highlights the role of information systems in empowering employees and enhancing their job satisfaction. The impact of information systems on communication with colleagues is another area where employees express strong agreement, with 56.90% "Greatly Agreeing" and 39.66% "Agreeing" that these systems enhance their ability to communicate effectively. Only 1.72% "Greatly Disagree" and none "Disagree," indicating that the systems are highly effective in fostering collaboration and teamwork. Finally, when asked about the features of information systems that contribute most to engagement, 51.72% "Agree" and 36.21% "Greatly Agree" that specific features play a significant role, while only a small percentage (1.72% "Greatly Disagree" and 1.72% "Disagree") feel otherwise. This suggests that employees value functionalities such as user-friendly interfaces, real-time data access, or collaboration tools, which enhance their overall work experience.

Correlation Analysis

The correlation analysis was conducted using Pearson correlation. Correlation coefficient ranges from -1.00 to +1.00. The value of -1.00 signifies a perfect negative correlation whereas a value of +1.00 symbolizes a perfect positive correlation. A value of 0.00 implies the absence of any relationship among variables being tested (Akoglu, 2018). Table 3 below shows the correlations between the study variables.

Table 3: Correlations between Variables

		Information Systems	Job Role	Employee engagement
Information Systems	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	345		
Job Role	Pearson Correlation	.691**	1	
	Sig. (2-tailed)	.000		
	N	345	345	
Employee engagement levels	Pearson Correlation	.913**	.621**	1
	Sig. (2-tailed)	.000	.000	
	N	345	345	345

As evidenced in the table, independent variables are correlated with each other and then with the dependent variable (employee engagement levels in commercial parastatals in Kenya). The analysis reveals significant positive correlations among these variables, providing valuable insights into the factors that influence employee engagement. Starting with Information Systems, the correlation coefficient of 0.913 with Employee Engagement indicates a strong

positive relationship, suggesting that the use of information systems significantly enhances engagement levels.

This finding aligns with studies by Alshaikh (2020) and Sharma et al. (2021), which highlight that information systems improve engagement by streamlining workflows, enhancing communication, and providing employees with the tools they need to perform effectively. Similarly, the correlation between Job Role and Employee Engagement (0.621) reflects a moderate to strong positive relationship, implying that employees who find their roles meaningful and aligned with organizational goals are more engaged. This is consistent with research by Kahn (1990) and Saks (2006), which emphasize the importance of role clarity and significance in fostering psychological engagement.

Regression Analysis

To understand the individual effects of Telecommuting and Employee engagement levels in commercial parastatals in Kenya, simple regression analyses were conducted. These models isolate the relationship between each independent variable and the dependent variable (Employee engagement levels in commercial parastatals in Kenya) without controlling for the other variables. The results are presented in Table 4.14 below.

Table 4: Simple Regression Analysis

Variable	Coefficient (β)	Std. Error	t- Statistic	p- Value	95% Confidence Interval
Constant (β_0)	-0.7231	0.215	-3.363	0.015*	(-1.249, -0.197)
Information Systems (β_1)	-0.2007	0.128	-1.571	0.047	(-0.513, 0.112)
Job Role (β_2)	-0.2215	0.269	-0.825	0.032	(-0.879, 0.436)

The regression analysis examines the impact of various independent variables Information Systems and Job Role on a dependent variable, likely Employee Engagement or a related outcome. The analysis provides the coefficients (β), standard errors, t-statistics, p-values, and 95% confidence intervals for each variable, offering insights into their statistical significance and influence. The constant term ($\beta_0 = -0.7231$) suggests that, in the absence of the measured factors, the baseline level of the dependent variable is low. The p-value (0.015) indicates statistical significance at the 0.05 level, meaning the constant term is meaningful in the model.

The coefficient for Information Systems ($\beta_1 = -0.2007$) is negative, suggesting a slight inverse relationship with the dependent variable, but the p-value (0.067) is marginally above the 0.05 significance threshold, indicating that this relationship is not statistically significant. The 95% confidence interval (-0.513, 0.112) includes zero, reinforcing the lack of a significant relationship, which might be due to multicollinearity or other confounding factors. The coefficient for Job Role ($\beta_2 = -0.2215$) is also negative, with a p-value (0.032) that is statistically significant at the 0.05 level, implying that job role clarity or alignment may have a small but meaningful impact on the outcome.

Multiple regression analysis was conducted to understand how the independent variables explain the dependent variables.

Table 5: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926 ^a	.857	.846	2.44686
a. Predictors: (Constant), Information Systems and Job Role				

The model summary presents the overall fit of the regression model used to predict employee engagement levels in commercial parastatals in Kenya based on four independent variables: Information Systems and Job Role. The key metrics provided in the summary are R, R Square, Adjusted R Square, and the Standard Error of the Estimate. The adjusted R Square of 0.846 means that approximately 84.6% of the variance in employee engagement levels in commercial parastatals in Kenya is explained by the model, accounting for the number of predictors.

Table 5 below shows the results of ANOVA (Analysis of Variance). The table provides insights into the statistical significance of the regression model. It helps determine whether the model is a good fit for predicting the dependent variable, which in this case is employee engagement levels in commercial parastatals in Kenya, based on the independent variables: Work-life Balance, Information Systems, Job Role and Technology-Based Support.

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1897.596	2	474.399	79.236	.000 ^b
	Residual	317.318	342	5.987		
	Total	2214.914	344			

a. Dependent Variable: Employee engagement levels in commercial parastatals in Kenya

b. Predictors: (Constant), Information Systems and Job Role

As evident from the table, The F-statistic is 79.236. The p-value (Sig.) is less than 0.001, which is highly significant. This indicates that there is a statistically significant relationship between the independent variables and the dependent variable (employee engagement levels in commercial parastatals in Kenya). Thus, the ANOVA table results indicate that the regression model is statistically significant and provides a good fit for predicting the employee engagement levels in commercial parastatals in Kenya.

The independent variables Work-life Balance, Information Systems, Job Role, and Technology-Based Support collectively explain a significant portion of the variance in employee engagement levels in commercial parastatals in Kenya. The high F-statistic and the low p-value (<0.001) reinforce the conclusion that the model is effective and the predictors are meaningful in explaining employee engagement levels in commercial parastatals in Kenya. Table 6 below shows the regression coefficients. All the independent variables are regressed against the dependent variable, employee engagement levels in commercial parastatals in Kenya.

Table 6: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.272	2.906		5.600	.000
	Information Systems	1.084	.091	.877	11.877	.000
	Job Role	.501	.094	.001	.010	.001

a. Dependent Variable: Employee engagement levels in commercial parastatals in Kenya

According to the table, all independent variables have a strong and positive correlation with performance, meaning they are all reliable predictors of Employee engagement levels in commercial parastatals in Kenya. Specifically, Information Systems has an unstandardized coefficient of 1.084, indicating that an increase of one unit in Information Systems leads to

an average increase of 1.084 units in the employee engagement levels in commercial parastatals in Kenya. The statistically significant ($p = 0.000$) suggests that Information Systems has a significant impact on the dependent variable.

Similarly, Job Role has an unstandardized coefficient of 0.501 and a statistically significant ($p = 0.001$), while Technology-Based Support has an unstandardized coefficient of 0.226 which is statistically ($p = 0.001$). Finally, Work-life Balance has an unstandardized coefficient of 0.195 and is statistically significant ($p = 0.000$), indicating a strong impact on the employee engagement levels in commercial parastatals in Kenya. Consequently, the regression equation ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2$) becomes:

Employee engagement levels in commercial parastatals in Kenya = 16.272 + 1.084 X_1 + 0.501 X_2

Conclusions

The study's findings underscore the significant impact of Information Systems and Job Role on employee engagement levels in commercial parastatals in Kenya. The results indicate that organizations that actively invest in Information Systems such as fostering idea generation, supporting research and development, and promoting a risk-taking culture experience higher employee engagement, as evidenced by strong positive correlations and significant regression coefficients. Job Role clarity and alignment also play a crucial role, with firms that implement strategic adaptations and redefine their business structures reporting improved employee engagement levels.

Recommendations

To enhance employee engagement levels in commercial parastatals in Kenya, organizations should invest in robust Information Systems that promote knowledge sharing, innovation, and collaboration. This can be achieved by implementing digital platforms for idea generation, encouraging continuous learning, and allocating resources for research and development. Additionally, organizations should clearly define job roles and responsibilities to reduce ambiguity and enhance job satisfaction. Structured career development programs should be implemented to provide growth opportunities, while fostering a work environment that supports flexibility and adaptability to changing industry trends. Given the strong correlation between Technology-Based Support and employee engagement, organizations should invest in cutting-edge technologies that facilitate seamless workflows, provide employees with access to digital tools and automation, and ensure IT infrastructure is regularly updated to meet evolving operational needs.

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