

ORIGINAL ARTICLE

Impact of Remote Work on Productivity in Palmpay, Lagos, Nigeria

Yusuf Adedayo Lawal^{1*}, Ayomide Sidikat Oloyede², Omowunmi Temitope Adebayo³ and Riyanat Olasumbo Tiamiyu⁴

¹ Department of Project Management, Lagos State University, Ojo, Lagos, Nigeria

 <https://orcid.org/0000-0003-2255-746X>
e-mail: yusuf.lawal@lasu.edu.ng

² Department of Project Management, Lagos State University, Ojo, Lagos, Nigeria

 <https://orcid.org/0009-0002-5630-556X>
e-mail: siddiqaholoyede@gmail.com

³ Department of Project Management, Lagos State University, Ojo, Lagos, Nigeria

 <https://orcid.org/0009-0005-8969-8576>
e-mail: owunmiadebayo@gmail.com

⁴ Department of Project Management, Lagos State University, Ojo, Lagos, Nigeria

 <https://orcid.org/0009-0004-9374-8380>
e-mail: riyanat.tiamiyu@lasu.edu.ng

* Corresponding author



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Abstract: The transition to remote work in Nigeria's FinTech sector presents unique challenges that necessitate a thorough examination of its impact. Factors such as socio-economic conditions, cultural context, and infrastructure play significant roles in shaping remote work effectiveness, yet research in these areas remains scarce. Existing frameworks like Self-Determination Theory (SDT), Job Demands-Resources Model (JDRM), and Social Cognitive Theory (SCT) provide foundational insights but lack application in the FinTech context, particularly in emerging markets. This study aims to adapt these theories to Nigeria's FinTech sector and empirically assess the impact of remote work on productivity. Using a quantitative research design, the study collects standardized data through surveys from all remote employees at Palmpay, totaling 43 individuals, utilizing census sampling for representation. The survey incorporates validated scales measuring productivity, work-life balance, and includes both closed- and open-ended questions for comprehensive data collection. A pilot test confirmed the survey's validity and reliability, achieving a Cronbach's alpha score above 0.70. Data analysis employs statistical software for descriptive and inferential statistics, with results presented in tables and charts. Linear regression analysis indicates that communication and collaboration tools (CCT) significantly enhance observational learning and self-efficacy (OLS), with an R^2 value of 0.930 demonstrating that CCT accounts for 93% of the variance in OLS. However, the Durbin-Watson statistic suggests potential autocorrelation, hinting at other influencing factors. Overall, findings underscore the importance of CCT in remote work settings, prompting organizations to invest in effective communication technologies, provide training, and regularly evaluate their impact to optimize performance and employee productivity.

Keywords: Collaboration; Communication; FinTech; Productivity; Remote Work.

JEL Classification: J24; J81; M54.

1. Introduction

In recent years, the work landscape has seen a significant transformation, primarily due to the emergence of remote working arrangements. This change is the result of several factors that have collectively reshaped the traditional models of work.

Technological advancements have played a crucial role in this shift. The development of powerful, user-friendly communication and collaboration tools has enabled seamless remote work (Bennett et al., 2020). This leap in technology has not only made remote work possible but has also encouraged a culture of real-time collaboration, which could lead to enhanced efficiency and quicker problem-solving (Bennett et al., 2020).

The nature of work is also changing. In sectors like FinTech, jobs are increasingly knowledge-based, task-oriented, and require less physical presence in a centralized office. The emphasis is now on results and deliverables, diminishing the need for employees to be physically present in an office (Spohrer et al., 2022). This trend aligns well with remote work arrangements, enabling employees to complete tasks and make meaningful contributions from any location.

The global COVID-19 pandemic has further accelerated the adoption of remote work. Lockdowns and social distancing measures forced organizations to adopt remote work practices to continue operations (Crockett, 2020). This large-scale shift not only proved the viability of remote work but also highlighted its potential advantages for both employees and employers.

The FinTech sector, in particular, has been quick to embrace remote work models due to its reliance on digital tools and processes. The sector's focus on innovation and agility is complemented by the flexibility of remote work. It allows FinTech companies to access a broader talent pool and attract skilled individuals who may not be near a central office (PWC, 2022). Additionally, the savings on overhead costs from not maintaining physical office spaces can be redirected towards technological advancements and talent development.

Despite these benefits, the impact of remote work on employee productivity in the FinTech sector is still debated. Some studies suggest that remote work can enhance productivity by reducing distractions and allowing employees to manage their work schedules around personal commitments (Gajendran & Harrison, 2007). However, there are also challenges that could impede productivity, such as communication breakdowns due to the lack of face-to-face interaction, feelings of isolation among employees who value social interaction, difficulties in maintaining work-life balance, and cybersecurity concerns due to increased reliance on remote access and cloud-based solutions.

For FinTech companies like Palmpay, understanding and addressing these challenges is essential to fully leverage the benefits of remote work. Creating a supportive remote work environment that promotes productivity and employee well-being requires fostering effective communication, offering virtual team-building opportunities, and setting clear boundaries between work and personal life. By doing so, organizations can achieve overall success and maintain a productive, motivated workforce.

The problem associated with Palmpay's transition to remote work in Nigeria's FinTech sector requires a multifaceted exploration to identify contextual, theoretical, and empirical gaps. Contextually, while the shift to remote work has been accelerated by global trends and local needs for flexibility and cost reduction, the specific impact on Nigerian FinTech companies remains underexplored. The unique socio-economic, cultural, and infrastructural aspects of Nigeria could significantly influence the effectiveness of remote work, yet there is a dearth of research focused on these local nuances.

Theoretically, existing literature provides a foundation for understanding remote work's impact on productivity through frameworks like Self-Determination Theory (SDT), Job Demands-

Resources Model (JDRM), and Social Cognitive Theory (SCT). However, there is a gap in applying these theories comprehensively to the FinTech sector, particularly in emerging markets. For instance, while SDT emphasizes the importance of autonomy, competence, and relatedness, its application in a remote work context within the FinTech industry is not well-documented. Similarly, JDRM's balance between job demands and resources offers a lens to examine employee well-being, but its implications for remote workers in FinTech have not been fully articulated. SCT's focus on self-efficacy and observational learning could be pivotal in remote settings, yet there is limited empirical evidence on how these factors play out among FinTech employees working remotely.

Empirically, studies like those by Gajendran and Harrison (2007) suggest potential benefits of remote work, such as increased productivity due to reduced distractions. In contrast, Crockett (2020) highlights the challenges of remote work, including communication breakdowns and isolation. However, these findings are not necessarily reflective of the FinTech sector's experience, particularly in the Nigerian context. There is a need for empirical research that specifically investigates how remote work affects productivity in the Nigerian FinTech sector, taking into account the unique job characteristics and environmental factors that employees encounter.

To address existing gaps, this study aims to adapt the understanding of remote work's impact on productivity specifically to the Nigerian FinTech sector, taking into account local socio-economic and cultural factors. It will theoretically apply and test the relevance of Self-Determination Theory (SDT), Job Demands-Resources Model (JDRM), and Social Cognitive Theory (SCT) within this context. Additionally, the study will empirically assess the actual impact of remote work on productivity at Palmpay by leveraging recent employee data and experiences for a current, sector-specific perspective. The focus will be on how remote work arrangements affect employees' psychological needs for autonomy, competence, and relatedness as defined by SDT, how these practices influence the balance of job demands and resources per JDRM, and the role of communication and collaboration tools in enhancing observational learning and self-efficacy within remote teams, based on SCT. The research questions will explore these influences, with hypotheses suggesting that remote work arrangements positively impact psychological needs, significantly affect job demands and resources, and play a crucial role in fostering self-efficacy and learning.

2. Literature Review

Remote work, or telework, refers to performing job duties outside a traditional office, typically from home or co-working spaces. Its popularity has surged due to technological advancements and events like the COVID-19 pandemic. Originally associated with roles requiring minimal physical presence, remote work has expanded to encompass knowledge-based jobs, especially in FinTech, which prioritize results over physical presence. While proponents highlight benefits such as flexibility and improved work-life balance, critics raise concerns about communication challenges and isolation.

Employee productivity quantifies the value brought by individuals in their roles, encompassing quantity, quality, and efficiency of work. In remote settings, traditional oversight is absent, complicating productivity measurement. Modern metrics focus on project outcomes and customer satisfaction rather than hours worked, reflecting a shift toward valuing innovation and problem-solving. Studies indicate that remote work can enhance job satisfaction and reduce turnover, provided organizations foster trust and provide necessary support.

FinTech, or Financial Technology, leverages advanced technology to improve financial services. This sector includes innovations like mobile payments and online banking, disrupting traditional institutions and offering consumers more convenient options. The knowledge-

intensive nature of FinTech makes it well-suited for remote work, allowing employees to maintain productivity while enjoying flexible work arrangements. FinTech's growth reflects a broader digital transformation in the economy, influencing both consumer expectations and work practices.

Remote work arrangements range from telecommuting to fully remote operations, characterized by flexibility and reliance on digital communication. Research indicates that such arrangements can boost productivity by reducing commute times and distractions, though their effectiveness depends on job nature and digital tools available. Organizational support and clear policies are crucial for successful remote work.

Effective communication and collaboration tools are vital for remote work success, enabling teams to interact across distances. Tools like email, video conferencing, and collaborative platforms enhance team cohesion and knowledge sharing, fostering a sense of community that is crucial for motivation and productivity.

The FinTech sector is marked by rapid innovation and disruption of traditional financial services, utilizing technologies like big data and blockchain. Remote work adoption in FinTech is facilitated by its digital nature, offering flexibility and responsiveness. However, challenges like regulatory compliance and cybersecurity must be managed in remote environments.

Measuring employee productivity in remote settings is complex, as traditional metrics may not capture the value in knowledge-intensive sectors like FinTech. New approaches emphasize outcomes and deliverables over hours worked, aligning with the shift toward results-oriented work cultures.

The relationship between remote work and employee productivity remains a topic of ongoing research. This section delves into existing empirical studies to understand the impact of remote work on employee performance, with a particular focus on the FinTech sector, if applicable. We will then analyze and synthesize the findings, identify any common themes or contradictions, and highlight gaps in existing research that this study aims to address.

Several studies have explored the link between remote work and employee productivity. Some studies suggest potential benefits for productivity. For instance, studies by Bloom et al. (2015) and Frost et al. (2017) demonstrate that remote workers can be significantly more productive than their office-based counterparts, citing factors like reduced commute times and increased autonomy as contributing factors. Research conducted by Gajendran and Harrison (2007) through a meta-analysis also suggests a positive association between remote work and employee well-being, which can indirectly improve productivity.

However, other studies highlight potential drawbacks. Crockett (2020) points to potential challenges associated with remote work, such as communication breakdowns, feelings of isolation, and difficulty managing distractions, which can negatively impact employee engagement and ultimately, productivity. Furthermore, research suggests that the effectiveness of remote work arrangements can vary depending on individual characteristics, job type, and organizational culture (Bailey, & Kurland, 2002).

While there is a growing body of research on the impact of remote work on productivity, studies focusing specifically on the FinTech sector are scarce. The unique characteristics of FinTech work, such as its emphasis on collaboration, information security, and knowledge-based tasks, necessitate further investigation. Understanding how these specific elements interact with remote work arrangements in terms of employee experience and productivity is crucial for this sector.

3. Theoretical Review

Understanding the complex interplay between remote work and employee productivity requires exploring relevant theoretical frameworks. This examination will focus on three key theories: Self-Determination Theory (SDT), Job Demands-Resources Model (JDRM), and Social Cognitive Theory (SCT).

Self-Determination Theory, proposed by Deci and Ryan (2000), offers insights into human motivation in the workplace. It posits that motivation stems not only from external rewards but also from intrinsic factors that drive individuals to perform and find satisfaction in their work. SDT identifies three core psychological needs—autonomy, competence, and relatedness—that are essential for fostering intrinsic motivation, ultimately enhancing performance and well-being. In remote work contexts, especially in the FinTech sector, employees often experience greater autonomy, allowing them to manage their schedules and environments. This flexibility can boost motivation and productivity; however, it can also lead to feelings of isolation, which may hinder relatedness and social connection. FinTech companies must therefore balance the autonomy provided by remote work with the need for collaboration and community, employing strategies like virtual team-building activities and regular video conferences to maintain social interaction and support.

The Job Demands-Resources Model is a pivotal framework for understanding workplace dynamics related to employee well-being and performance. It posits that job demands—such as physical and emotional stressors—must be balanced with job resources, which aid employees in managing those demands. In the rapidly evolving FinTech sector, remote work introduces unique job demands, including distractions in non-traditional settings and the need for proficiency in digital tools. Conversely, job resources might include access to communication platforms and opportunities for professional development. The JDRM emphasizes the importance of balancing these demands and resources to foster well-being and enhance productivity. For FinTech companies like Palmpay, this means implementing remote work policies that alleviate stress while providing necessary support systems, thus promoting a healthy work environment.

Social Cognitive Theory, introduced by Bandura (1986), provides a comprehensive framework for understanding how individual traits, environmental contexts, and behaviors interact. Central to SCT is the concept of self-efficacy, which influences choices and persistence in facing challenges. High self-efficacy encourages employees to tackle difficult tasks and maintain effort, enhancing their chances of success. Observational learning, another key component of SCT, occurs when individuals replicate the behaviors of others, particularly when those behaviors are reinforced. In remote work environments, communication and collaboration tools can facilitate this learning, allowing employees to share knowledge and improve collective skills. The autonomy inherent in remote work can enhance self-efficacy by granting employees control over their tasks, leading to increased motivation. However, isolation can undermine the social connections vital for motivation and well-being. To counteract this, FinTech companies can cultivate a supportive culture through virtual team-building exercises and recognition programs, thereby fostering self-efficacy and community among remote employees.

In summary, the research will utilize these theoretical frameworks to explore the dynamics of remote work and its effects on employee productivity within the FinTech industry. The investigation will focus on how remote work arrangements influence the psychological needs outlined by SDT, the balance of job demands and resources according to the JDRM, and the role of communication tools in promoting self-efficacy and observational learning as described by SCT. By analyzing employee perceptions and experiences through surveys or interviews, the study aims to provide insights that will help FinTech companies like Palmpay refine their remote work policies to enhance employee well-being and motivation, ultimately fostering a productive remote workforce.

4. Research Methods

The study employed a quantitative research design, utilizing surveys to gather data from employees at Palmpay. This quantitative approach enabled the collection of standardized data from a large sample, facilitating statistical analysis and the generalization of findings to a broader population. It was well-suited for investigating specific employee experiences and perceptions related to remote work and its impact on productivity.

The target population comprised all employees who were currently engaged in remote work at Palmpay, including those working from home, coworking spaces, or any non-traditional office locations. adopted census sampling, ensuring that every remote employee was included in the survey.

Data was collected primarily through a self-administered online survey developed from existing literature and validated scales to measure constructs like remote work arrangements, employee productivity, work-life balance, and self-efficacy. The survey included closed-ended questions with Likert-scale responses

Before administering the final survey, a pilot test was conducted with a small, representative group of employees. This pilot test evaluated the survey's clarity, comprehensiveness, and ease of use, as well as refined questions to ensure they accurately captured the intended information. It also assessed the survey's internal consistency and reliability.

To ensure the validity of the instrument, the survey was designed with content and construct validity in mind. Content validity was established through reference to existing literature and validated scales, while construct validity was assessed via pilot testing and analysis of the relationships between different scales. Internal consistency reliability was evaluated using Cronbach's alpha coefficient during the pilot phase, with a score exceeding .70 indicating acceptable reliability.

Data analysis was conducted using IBM SPSS Statistics. Inferential statistics, including correlation and regression analyses, were employed to assess relationships between remote work arrangements, employee productivity, and other variables. Open-ended responses were analyzed thematically to capture employee experiences. The findings were presented in tables, charts, and figures to clearly communicate the results.

4.1. Data Analysis and Hypothesis Testing

4.1.1. Analysis of Research Hypothesis One

H₁: Remote work arrangements at Palmpay positively influence employees' psychological needs for autonomy, competence, and relatedness.

To evaluate the hypothesis that remote work arrangements at Palmpay positively influence employees' psychological needs for autonomy, competence, and relatedness, a linear regression analysis was conducted. In this analysis, Remote Work Arrangements (RWA) served as the independent variable, while Employees' Psychological Needs (PNA), encompassing autonomy, competence, and relatedness, were treated as the dependent variables. The results are presented in the Table 1.

Table 1. Results of Hypothesis 1

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Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.859 ^a	.739	.732	.50090	.796	
a. Predictors: (Constant), RWA						
b. Dependent Variable: PNA						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.067	1	29.067	115.854	.000 ^b
	Residual	10.287	41	.251		
	Total	39.354	42			
a. Dependent Variable: PNA						
b. Predictors: (Constant), RWA						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.652	.283		2.305	.026
	RWA	.764	.071	.859	10.764	.000
a. Dependent Variable: PNA						
Residuals Statistics ^a						
		Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value		1.4151	4.4692	3.5814	.83191	43
Residual		-1.62687	.62764	.00000	.49490	43
Std. Predicted Value		-2.604	1.067	.000	1.000	43
Std. Residual		-3.248	1.253	.000	.988	43
a. Dependent Variable: PNA						

Source: Researchers (2024).

Table 1 shows the results of the linear regression analysis provide a comprehensive view of how remote work arrangements at Palmpay influence employees' psychological needs for autonomy, competence, and relatedness.

The regression model indicates a strong relationship between remote work arrangements (RWA) and employees' psychological needs (PNA), with an R value of 0.859. This high correlation suggests that remote work arrangements are closely related to the fulfilment of these psychological needs. The R Square value of 0.739 means that approximately 73.9% of the variability in employees' psychological needs can be explained by the remote work arrangements. The adjusted R Square value of 0.732 accounts for the number of predictors in the model, indicating a good fit and suggesting that the model effectively captures the relationship between RWA and PNA. The standard error of the estimate is 0.50090, reflecting the average distance between the observed values and the values predicted by the model. The Durbin-Watson statistic of 0.796 indicates some positive autocorrelation in the residuals, though it is still within an acceptable range for regression analysis.

The ANOVA table shows that the regression model is statistically significant, with an F value of 115.854 and a p-value of 0.000. This result indicates that the model significantly improves the prediction of employees' psychological needs compared to using a model with no predictors, affirming the hypothesis that remote work arrangements positively influence these needs.

The coefficients table provides detailed information about the impact of remote work arrangements on psychological needs. The unstandardized coefficient for RWA is 0.764, which indicates that each unit increase in remote work arrangements determines a change of only 0.764 of the influence of this variable on the psychological needs score. The standardized coefficient (Beta) of 0.859 shows a strong positive influence of remote work on psychological

The residuals statistics show the distribution of the predicted values and residuals. The mean of the residuals is very close to zero (0.00000), which suggests that the model's predictions are unbiased on average. The standard deviation of the residuals is 0.49490, indicating the average deviation of the observed values from the predicted values. The range of the residuals (from -1.62687 to 0.62764) and the standard predicted, and residual values show some variability but within reasonable limits for a well-fitting model.

Overall, the analysis supports the hypothesis that remote work arrangements at Palmpay positively influence employees' psychological needs for autonomy, competence, and relatedness. The significant relationship and strong coefficients highlight the effectiveness of remote work in enhancing these fundamental psychological aspects, which are crucial for employee satisfaction and motivation.

H₂: Remote work practices significantly affect the balance of job demands and resources for employees at Palmpay.

Multivariate Analysis was chosen for this study because it allows for the simultaneous examination of multiple dependent variables, providing a more comprehensive understanding of how remote work practices influence both job demands and resources. The results are presented in the Table 2, detailing how changes in remote work practices impact the balance between job demands and job resources among employees. This approach enables a nuanced analysis of the relationships between these variables and the overall effect of remote work practices on employee experience.

Table 2. Results of Multivariate Analysis

Multivariate Tests ^a						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.340	10.314 ^b	2.000	40.000	.000
	Wilks' Lambda	.660	10.314 ^b	2.000	40.000	.000
	Hotelling's Trace	.516	10.314 ^b	2.000	40.000	.000
	Roy's Largest Root	.516	10.314 ^b	2.000	40.000	.000
RWP	Pillai's Trace	.093	2.052 ^b	2.000	40.000	.142
	Wilks' Lambda	.907	2.052 ^b	2.000	40.000	.142
	Hotelling's Trace	.103	2.052 ^b	2.000	40.000	.142
	Roy's Largest Root	.103	2.052 ^b	2.000	40.000	.142
a. Design: Intercept + RWP						
b. Exact statistic						

Table 2 (cont.)

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	BJD	2.405 ^a	1	2.405	1.985	.166
	RE	1.345 ^b	1	1.345	.993	.325
Intercept	BJD	18.712	1	18.712	15.443	.000
	RE	26.189	1	26.189	19.344	.000
RWP	BJD	2.405	1	2.405	1.985	.166
	RE	1.345	1	1.345	.993	.325
Error	BJD	49.677	41	1.212		
	RE	55.508	41	1.354		
Total	BJD	577.667	43			
	RE	659.667	43			
Corrected Total	BJD	52.083	42			
	RE	56.853	42			
a. R Squared = .046 (Adjusted R Squared = .023)						
b. R Squared = .024 (Adjusted R Squared = .000)						

Source: Researchers (2024).

The results from the Multivariate Analysis reveal that remote work practices at Palmpay do not significantly impact the balance between job demands and resources for employees.

The overall multivariate tests for the effect of Remote Work Practices (RWP) on the balance of Job Demands (BJD) and Resources for Employees (RE) indicate that RWP does not have a significant effect. The values for Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root all produced p-values of 0.142. These non-significant p-values suggest that remote work practices do not substantially influence the combined dependent variables of job demands and resources. This implies that, from a multivariate perspective, the variations in remote work practices do not lead to significant changes in how employees perceive their job demands and available resources.

Examining the effects on the individual dependent variables provides further clarification. For Job Demands (BJD), the results show a p-value of 0.166, with an F-value of 1.985, indicating that remote work practices do not have a statistically significant impact on the perceived job demands. The R-squared value of 0.046 (adjusted R-squared = 0.023) highlights that only a small fraction of the variability in job demands can be attributed to remote work practices, reinforcing the conclusion that these practices do not meaningfully alter job demands.

Similarly, for Resources for Employees (RE), the p-value is 0.325 with an F-value of 0.993. This lack of statistical significance further supports the idea that remote work practices do not significantly affect the resources available to employees. The R-squared value of 0.024 (adjusted R-squared = 0.000) indicates that remote work practices explain virtually none of the variance in the resources employees perceive as available.

Overall, the MANOVA results suggest that remote work practices at Palmpay do not significantly affect the balance of job demands and resources. Both the multivariate and univariate analyses demonstrate that changes in remote work arrangements do not lead to meaningful changes in how employees experience job demands or the resources available to them. This finding implies that either the current remote work practices are not having a substantial impact, or other factors may be influencing the balance of job demands and resources more significantly.

4.1.3. Analysis of Research Hypothesis Three

H₃: Communication and collaboration tools play a crucial role in facilitating observational learning and fostering self-efficacy within remote workers at Palmpay.

To test the hypothesis that communication and collaboration tools play a crucial role in facilitating observational learning and fostering self-efficacy within remote workers, linear regression analysis was employed. In this analysis, Communication and Collaboration Tools (CCT) served as the independent variable, while Observational Learning and Self-Efficacy (OLS) were the dependent variables. The regression model aimed to determine how variations in the use of these tools impact employees' opportunities for observational learning and their levels of self-efficacy in a remote setting. The results of this regression analysis are detailed in the Table 3, providing insights into the effectiveness of communication and collaboration tools in enhancing these key aspects of remote work.

Table 3. Results for Hypothesis 3

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.964 ^a	.930	.928	.31058	.498	
a. Predictors: (Constant), CCT						
b. Dependent Variable: OLS						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.479	1	52.479	544.041	.000 ^b
	Residual	3.955	41	.096		
	Total	56.434	42			
a. Dependent Variable: OLS						
b. Predictors: (Constant), CCT						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.769	.132		5.815	.000
	CCT	.859	.037	.964	23.325	.000
a. Dependent Variable: OLS						
Residuals Statistics ^a						
		Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value		1.6280	5.0621	3.6512	1.11781	43
Residual		-.62795	.65498	.00000	.30686	43
Std. Predicted Value		-1.810	1.262	.000	1.000	43
Std. Residual		-2.022	2.109	.000	.988	43
a. Dependent Variable: OLS						

Source: Researchers (2024).

The results from the linear regression analysis provide a comprehensive view of how communication and collaboration tools (CCT) impact observational learning and self-efficacy (OLS) among remote workers at Palmpay.

The regression model reveals an extraordinarily strong relationship between communication and collaboration tools and the combined dependent variables of observational learning and self-efficacy. The model's R value is 0.964, indicating an elevated level of correlation between CCT and OLS. The R Square value of 0.930 signifies that approximately 93% of the variability in observational learning and self-efficacy can be explained using these tools. The Adjusted R Square of 0.928 further confirms the robustness of the model while accounting for the number of predictors. The standard error of the estimate is 0.31058, reflecting the average deviation of

the observed values from the predicted values. The Durbin-Watson statistic of 0.498 suggests some positive autocorrelation in the residuals, but it is still within an acceptable range for regression analysis.

The ANOVA table shows that the regression model is highly significant, with an F value of 544.041 and a p-value of 0.000. This indicates that the model significantly improves the prediction of observational learning and self-efficacy compared to a model with no predictors, thereby affirming the hypothesis that communication and collaboration tools play a crucial role in these areas.

The coefficients table provides detailed insights into the effect of communication and collaboration tools on observational learning and self-efficacy. The unstandardized coefficient for CCT is 0.859, meaning that for each unit increase in the use of these tools, determines a change of only 0.859 of the influence of this variable on observational learning and self-efficacy. The standardized coefficient (Beta) of 0.964 highlights a strong positive influence of CCT on OLS. The t-value of 23.325 and the associated p-value of 0.000 indicate that the effect of communication and collaboration tools is statistically significant and substantial.

The residuals statistics show that the mean residual is remarkably close to zero (0.00000), suggesting that the model's predictions are unbiased on average. The standard deviation of the residuals is 0.30686, indicating the average deviation from the predicted values. The range of residuals from -0.62795 to 0.65498 and the standardized residuals suggest some variability, but within reasonable limits for a well-fitting model.

Overall, the regression analysis supports the hypothesis that communication and collaboration tools significantly enhance observational learning and self-efficacy among remote workers at Palmpay. The strong statistical significance and high model fit metrics underscore the critical role these tools play in improving key aspects of remote work, demonstrating their effectiveness in fostering learning and self-confidence among employees.

4.2. Discussion of Findings

The results of the linear regression analysis indicate that communication and collaboration tools (CCT) have a substantial and statistically significant impact on observational learning and self-efficacy (OLS) among remote workers at Palmpay. The R^2 value of 0.930 signifies that CCT explains approximately 93% of the variance in OLS, underscoring a robust relationship between the use of these tools and the enhancement of employees' learning and self-confidence.

The high standardized coefficient (Beta = 0.964) and the F statistic of 544.041, with a p-value of 0.000, demonstrate a strong and significant effect of CCT on OLS. These findings align with recent studies emphasizing the importance of advanced communication technologies in remote work environments. For instance, research by Houghton et al. (2021) highlights that digital tools facilitate effective knowledge transfer and skill development, which are crucial for remote teams. Similarly, Kohn and Macdonald (2022) assert that such tools are vital for fostering a sense of competence and confidence among remote workers, which directly impacts their job performance.

However, the Durbin-Watson statistic of 0.498 suggests some positive autocorrelation in the residuals, implying that there may be additional factors influencing OLS that were not accounted for in the model. This observation is consistent with findings from Smith and Johnson (2023), who noted that residual autocorrelation often signals the presence of omitted variables or complex patterns in the data that require further investigation.

In examining the impact of communication and collaboration tools, it is crucial to consider the types of tools used. Recent research by Liu et al. (2023) indicates that different tools offer varying levels of functionality and user experience, which can affect their efficacy in promoting observational learning and self-efficacy. For example, synchronous communication tools such

as video conferencing platforms might be more effective for real-time feedback and learning, while asynchronous tools like project management software can support ongoing self-directed learning (Vartabedian et al., 2021).

Furthermore, while the regression model provides strong evidence of the relationship between CCT and OLS, it is important to acknowledge the potential limitations of this study. For instance, the focus on a single organization (Palmpay) might limit the generalizability of the findings. Future research could benefit from examining a broader range of organizations and industries to validate these results and explore how different contexts may influence the effectiveness of communication tools (Gibson & Gibbs, 2022).

Additionally, the reliance on quantitative data alone may not capture the full extent of how communication tools impact observational learning and self-efficacy. Incorporating qualitative methods, such as interviews or focus groups, could provide richer insights into employees' experiences and the specific ways in which these tools facilitate or hinder their learning and confidence-building processes (Nicolajsen et al., 2023).

Overall, the findings underscore the significant role of communication and collaboration tools in enhancing remote work practices, particularly in fostering observational learning and self-efficacy. Organizations should therefore invest in and optimize these tools to support their remote workforce effectively. Further research exploring different tool types, organizational contexts, and mixed-method approaches will be valuable in deepening the understanding of these dynamics and improving remote work practices.

6. Conclusions

The analysis confirms the hypothesis that communication and collaboration tools are essential for facilitating observational learning and fostering self-efficacy in remote work settings. The high R^2 value and significant F statistic indicate a substantial impact of these tools on how employees learn from peers and build confidence in their roles. This aligns with previous research emphasizing the importance of effective communication technologies in remote environments. The results highlight the value of investing in advanced communication tools to enhance learning outcomes and self-efficacy, which are crucial for maintaining high performance and job satisfaction among remote teams.

In light of these findings, organizations should prioritize investing in and optimizing their communication and collaboration tools to enhance remote work effectiveness. Specific recommendations include investing in high-quality communication technologies, such as video conferencing and collaborative platforms, to improve interaction and knowledge sharing among remote employees. Additionally, providing training programs focused on maximizing the use of these tools will ensure that employees can fully leverage their features to boost learning and self-efficacy. Finally, organizations should regularly evaluate the effectiveness of these communication tools and gather employee feedback to make necessary adjustments and improvements.

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