

## The Relationship Between Remote Work and Employee Productivity in the Educational Technology Organisation in South Africa

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**Abstract** – Over the past decade, the rise of globalisation and advancements in technology have led many organisations to shift from traditional office environments to remote settings to boost employee productivity and achieve organisational goals. Remote working offers notable advantages including increased flexibility, improved work-life balance, and cost savings, with organisations cutting on office space expenses and employees saving on commuting costs. However, it is not without its challenges, such as difficulties in monitoring performance, slower problem resolution, reduced personal interaction, and increased stress levels. The study examines the relationship between remote working and employee productivity in a selected educational technology sector in South Africa. The study is exploratory, and a quantitative research approach was utilised. The target population for the study consisted of employees in the educational technology organisation based in Cape Town, South Africa. A questionnaire was distributed using survey links where, 115 randomly sampled employees from the office of the chief executive officer, sales, operations, people and culture, finance and governance responded (response rate of 94%). The data was analysed using the IBM Statistical Package for the Social Sciences (SPSS) 29.0 version. Descriptive statistics using means and standard deviation for each variable were used to analyse the data. Cronbach alpha coefficients were used to assess the reliability of the measuring instruments. The findings revealed a positive relationship between remote working and employee productivity. It is recommended that the educational technology organisation invest in reliable internet connections, high-speed internet, and secure communication tools to foster a remote work culture.

**Keywords** – Remote Working, Employee Productivity, Teleworking, Self-Efficacy, Working from Home

## 1 Introduction

Over the past decade, globalisation and technological advancements have made remote work a growing trend in organisations as a competitive alternative to traditional office-based work. This shift has led millions of people worldwide to transfer their work to the home office, impacting their perceptions and attitudes toward work. Remote work has transformed homes into workspaces, allowing students to continue their studies, teachers to deliver lectures, employees to perform their duties, and managers to engage in conferences and meetings using various computer programmes (Al-Rfou, 2021). The shift in how work is done has sparked conversations about how remote working impacts various aspects of both professional and personal life, with a particular focus on how it affects employee productivity, which is the main topic of this study (Mamatha & Thoti, 2023). The concept of employee productivity is described as the correlation between individual performance and the operating environment in achieving the organisation's goals. It directly affects the revenue of an organisation and may be evaluated at the initial employment interview. It is influenced by factors such as working conditions, HR motivating programmes, supervisor support, individual competence, and organisational structure. The higher a company's productivity, the greater its competitive advantage (Elaho & Odion, 2022). Remote working has been identified as a flexible approach to balancing employee productivity with the organisation's goals (Gifford, 2022). While remote working is a well-known concept and widely practised, there is still much to be understood about its effects on employees' productivity. Nille introduced the notion of remote work in 1988 (Saurombe, Rayners, Mokgobu & Manka, 2022). Reshma, Shailashree, and Acharya (2015) define remote working as when an employee works away from the organisation's main office and uses communication and information technology such as computers, mobile smartphones, computer applications, and the Internet to do so. This type of work aims to reduce costs and increase productivity while maintaining a centralised structure. Research on the impact of remote work on productivity has shown varied results. Mubashira and Kumar (2024) pointed out that working remotely can boost productivity by minimising distractions and giving employees more control over their work. However, other research points out possible challenges such as visibility, security, communication issues, time zone differences, cultural differences, and strain (Chmeis & Zeine, 2024). Employees face financial burdens, including covering expenses for electricity and internet usage. The blurred boundaries between work and family life can lead to excessive work hours and difficulty detaching from work-related activities (Chiguvu & Bakani, 2023). Employees may experience isolation due to physical separation, leading to potential productivity declines. Managers express apprehension about potential negative impacts on interpersonal connections (Ansari, Chimani, Baloch, & Bukhari, 2015). Factors such as limited internet access, load shedding, inadequate working space, lack of necessary equipment, and insufficient training are not considered in remote work arrangements (Meles, 2020). In Botswana, many families lack access to internet connectivity and technological devices (Sucheran & Olanrewaju, 2021). The main issue with remote work is its

differences from traditional work and its benefits. The study examines the relationship between remote working and employee productivity in a selected educational technology organisation based in Cape Town, South Africa. The research findings contribute to the existing body of knowledge by offering a deeper insight into the extent and relationship between remote work and employee productivity. Therefore, the following hypotheses were formulated to address the aim of the study:

*H<sub>1</sub>*: There is a positive relationship between remote working and employee productivity.

*H<sub>2</sub>*: There is a negative relationship between remote working and employee productivity.

## 2 Literature Review

This section outlines relevant theory, dimensions supporting remote working, factors influencing employee productivity, benefits of employee productivity and the relationship between remote working and employee productivity.

### 2.1 The Self-Efficacy Theory

The self-efficacy theory focuses on individuals' belief in their ability to succeed. The self-efficacy theory developed by Albert Bandura in 1977, is a crucial aspect of understanding a person's motivation and performance. It is based on four sources of knowledge: operational achievements, virtual experience, social persuasion, and physiological and emotional states. The theory is particularly relevant to studying online organisations, where employees often work with little supervision and rely heavily on their abilities and initiative (Bandura, 1982). Technology improvements serve as the primary means of communication with management, and remote employees have a high degree of job autonomy. Their motivation and self-belief may have a bigger impact on their performance results than employees whose activities are frequently scrutinised (Silver, Mitchell, & Gist, 1995). Remote employees often operate in environments with few or no coworkers, resulting in significant solitude and minimal coworker support. This results in significant work autonomy, with the influence of motivation and skills beliefs on outcomes being greater than for closely monitored employees (Bandura, 1978).

### 2.2 Dimensions Supporting Remote Working

The evaluation of remote working support comprises organisational, supervisory, employee, and technological support dimensions, requiring a comprehensive and integrated approach to understanding the well-being of remote employees, highlighting the interdependence of these aspects (Kurtessis, Eisenberger, Ford, Buffardi, Stewart & Adis, 2017).

### 2.3 Organisational support

Organisational support is crucial for employees' well-being and job satisfaction (Kohont & Ignjatović, 2022). Addressing employees' socio-emotional needs and encouraging them to be more interested in their jobs can lead to increased motivation, job satisfaction, and reduced turnover rates (Bentley, Teo, McLeod, Tan, Bosua, Gloet 2016). It is especially important in remote working environments, as it promotes happiness, reduces psychological strain, and boosts employee identification (Tan, 2012). Personal disposition and work design also influence employees' need for support (Tang & Hu, 2017). Ensuring fairness in resource distribution norms and procedures, providing fair incentives, decent working conditions, effective performance evaluation and pay systems, career advancement opportunities, and skill development training programs are essential aspects of organisational support (Wang, 2018). In remote working, employers are responsible for their employees beyond regular office employment, as research shows that organisational support enhances job satisfaction and reduces psychological strain. Clear organisational guidelines and processes are essential for remote employees to feel a sense of belonging and security (Zheng & Hu, 2018).

### 2.4 Supervisory Support

Managers' support is crucial in valuing employees' contributions and helping them adapt to the workplace (Pattnaik & Panda, 2020). It includes instrumental and socio-emotional support, such as helping distribute resources and prioritising duties (Swanzy, 2020). Supervisors play a vital role in directing staff, removing barriers, and providing constructive feedback. They also help employees understand the organisation's goals and culture, fostering a positive attitude towards the company (Rabbani, Akram, Habib & Sohail, 2017). Perceived supervisor support refers to how employees perceive the level of care and help they receive from their superiors (Qureshi & Hamid, 2017). Effective support enhances job satisfaction and emotional commitment, leading to greater job involvement, knowledge sharing, and positive behaviours that benefit the organisation (Talukder, 2019). Supervisory assistance serves as a resource in the workplace, representing the organisation's gratitude and support for its employees. Employees who feel supported, especially when working remotely, are more likely to develop themselves, overcome challenges, and solve problems to return the organisation's and top supervisors' support (Ahmad, Danish, Ali, Shahid, Ahsan Khan, & Nadeem, 2019).

### 2.5 Employee Support

Organisational members are considered representatives of the organisation, and employees perceive appropriate attention from colleagues as a show of care (Kurtessis et al., 2017). Remote workers perceive themselves as significant, valuable, and respected, encouraging them to put in more effort to achieve the organisation's objectives (Arasanmi & Krishna, 2019). However, the intensity of remote employees influences the expected aid from

colleagues. Full-time remote employees seek help from established connections, while low-impact distant workers appreciate assistance from office-based colleagues (Collins, Hislop, & Cartwright, 2016). Distant employees may be impacted by a lack of interaction with colleagues, while others enjoy it (Khajuria & Khan, 2022).

## 2.6 Technology-related Support

Remote employees are increasingly relying on Information and Communication Technology (ICT) for effective information transmission and communication. To support these employees, organizations must provide the necessary equipment, training, and skills for both in-person and online interactions. There are two types of technological assistance: direct aid for technical concerns and IT professional training (Hartman, Townsend, and Jackson, 2019). ICT systems play a crucial role in remote work by facilitating job-related activities and promoting social interactions and emotional relationships among coworkers (Yadav, Gupta, and Khetrapal, 2018). Workflow Control Systems and Management Control Systems facilitate task management and decision-making, while Informatics systems facilitate effective interactions and cognitive trust (Bisbe & Sivabalan, 2017). These systems help to maintain personal and professional ties and foster a sense of belonging among remote employees (Kimble, 2011). Overall, ICT plays a vital role in enhancing the work environment for remote employees (Singhavi & Basargekar, 2019).

## 2.7 Factors Influencing Employee Productivity

### Work environment

The work environment encompasses various aspects such as relationships with coworkers, organisational culture, and self-development opportunities (Sasidhar, 2021). It significantly impacts employees' productivity, with physical and behavioural aspects influencing their behaviour and productivity (Lelei, 2018). A positive work environment can enhance employee behaviour and reduce stress-related feelings. Compensation, awards, job security, and the work environment contribute to increased dedication and a sense of belonging to the organisation (Amin & Islam, 2022). A pleasant working environment promotes job satisfaction and the fulfilment of organisational objectives. Managers play a crucial role in creating a pleasant work environment, as maintaining specific working conditions and atmosphere can lead to higher employee productivity. Overall, a positive work environment can significantly impact employee performance and overall productivity (Kahindi, 2022).

### Technology Advancements

Technology advancements are revolutionising industries, including the workplace, by enabling faster, more efficient, and more enjoyable experiences (Conceição, Rocha, Silva & a Conceição, 2020). These innovations, such as artificial intelligence, machine learning, and natural user interfaces like voice recognition, have significantly increased staff productivity by automating tasks

previously considered impossible or impractical. The rise of health applications in the workplace has also contributed to productivity (Younus, 2021). Organisations must adapt to new technologies to remain competitive and relevant in this technologically advanced era. Advanced technological tools have been shown to improve employee productivity, human error, job duties, communication, efficiency, and work management effectiveness (Anuwar & Kamruzzaman, 2017).

## 2.8 Benefits of Employee Productivity

Enhancing employee productivity has been one of numerous organisations' top priorities. This is because increased levels of employee productivity give several benefits to an organisation and its personnel (Hanaysha, 2016). Higher productivity contributes to positive economic growth, high profitability, and improved social advancement. Furthermore, more productive employees should expect higher wages or salaries, better working conditions, and more job prospects. Additionally, better productivity tends to maximise organisational competitive advantage by reducing costs and improving output quality (Singh et al., 2022). All these advantages have made employee productivity worthy of consideration. As a result, understanding its antecedents is critical to ensuring organisational longevity and long-term success (Sharma & Sharma, 2014).

## 2.9 The Relationship between Remote Work and Employee Productivity

A study by Sucheran and Olanrewaju (2021) on the impact of working from home in South Africa found that most people were either very productive or productive when telecommuting. Only a small number of respondents said they were not productive. The research also showed that households with just one person working remotely tended to have higher productivity (Silungwe, 2020). However, as more people in the same home start working remotely, the home environment may become less suitable for this (Sutarto, Wardaningsih & Putri, 2021). This is likely because they need to share resources like the internet, workspaces, and furniture, which can be difficult. The noise generated by multiple people working in the same space can also negatively affect productivity (Kurdy, Al-Malkawi and Rizwan, 2023). Patanjali and Bhatta (2022) explored how factors within organisations affected employee productivity in the IT sector while working from home during the pandemic. The study found that 39.22% of respondents enjoyed remote work and saw an improvement in productivity due to the elimination of commuting, which also helped lower stress and boost efficiency. Moreover, 20.59% of the respondents felt that working remotely had negatively impacted their productivity (Atoko, 2021). The respondents mentioned working long hours, often up to 14 hours a day, without formal breaks, which made them feel constantly on call. This led to a sense that their managers did not respect their time, resulting in disruptions to their home life (Kazekami, 2020). Farooq and Sultana (2022) examined how the COVID-19 pandemic affected remote work and its link to

employee productivity. The findings revealed that as remote work became more common, there was a noticeable decline in productivity. On another hand, a study by Kurdy, Al-Malkawi, and Rizwan (2023) examined the various factors that influence the productivity of employees who worked remotely in the United Arab Emirates (UAE) during the COVID-19 pandemic and found that workload, job satisfaction, work-life balance and social support have a significant positive impact on employee productivity. Fathima and Kumar (2024) in their study analyzed how the shift to remote work has impacted various aspects of employee performance and well-being, with a focus on productivity and satisfaction. The findings suggest that remote work has led to both positive and negative outcomes for employees. On one hand, many employees report increased autonomy, flexibility, and efficiency when working remotely, leading to higher productivity levels and job satisfaction. On the other hand, challenges such as blurred boundaries between work and personal life, feelings of isolation, and communication barriers have also been observed, contributing to decreased satisfaction and well-being for some individuals. Anakpo, Nqwayibana, and Mishi (2023) conducted a comprehensive review that explored the relationship between remote work and employee performance. The findings indicated that, overall, remote work tends to enhance productivity, but this depends on several factors such as the nature of the job, the specific organisation or sector, and the employee's home environment.

### 3 Research Methodology

The study focuses on the educational technology industry, a private organisation based in Cape Town, South Africa. The organisation specialises in the development, distribution, and use of technology-based tools and solutions for educational purposes, especially for higher education institutions in the country. This study is exploratory and adopts a quantitative approach. The target population for the study comprised a total of 122 employees in the educational technology organisation regardless of their status within the organisation. They were from different departments namely the office of the chief executive officer, sales, operations, people and culture, finance, and governance. A questionnaire was distributed using survey links where 115 randomly sampled employees. They were from the office of chief executive officer (1), sales (9), operations (82), people and culture (Human Resources department) (19), and finance and governance (4). The Raosoft calculator was used for the sample size and there was a response rate of 94 percent. The research questionnaire was designed with different sections, aligned with the study's objectives. Section A gathered information about the respondent's demographic profile. Section B focused on remote working, and Section C explored employee productivity. The remote working questionnaire (RWQ) was developed by Prasad et al (2020). The original survey includes 18 questions divided into four categories: organisational climate, technology, workplace isolation, and teamwork. However, for this research, only 12 questions were selected. The scale is valid and reliable, reporting a reliability of 0.701. The individual work performance questionnaire (IWPQ) was developed by Koopmans (2015). The scale is valid

and reliable, reporting a reliability of 0.778. For both sections, the items are measured using a five-point Likert-Scale varying from 1 (strongly disagree) to 5 (strongly agree). Data was analysed using IBM's Statistical Package for the Social Sciences (SPSS) version 29.0. Descriptive statistics using means and standard deviation for each variable were used to analyse the data. The Spearman's rank correlation was used to analyse the inputs of the data collected. The Cronbach alpha coefficients were used to assess the reliability of the measuring instruments. The ANOVA was used to determine whether the differences between group means are statistically significant. Regression analysis was then applied to determine and anticipate how the independent factors affect the dependent factor, particularly in terms of cause and effect. The Turfloop Research Ethics Committee (TREC) and the educational technology organisation permitted researchers to conduct the study.

## 4 Results

### 4.1 Descriptive Statistics Results

Descriptive statistics in the form of arithmetic means and standard deviations were calculated. Table 1 below shows the mean and standard deviations for remote working and employee productivity.

Table 1: Descriptive Statistics on Remote Working and Employee Productivity

	N	Mean	Standard Deviation
Remote Work	115	4.1833	.44029
Employee Productivity	115	3.9992	.44509

Source: Authors

From Table 1 above it is evident that the respondent's mean score on remote work is 4.1833. The results revealed a generally positive view of remote working among the respondents, as the score exceeds the benchmark of 4. The standard deviation for remote work is .44029. This implies that employees favour remote working over conventional office settings and consider it effective. Furthermore, the mean score of the respondents on employee productivity is 3.9992. the mean for employee productivity is slightly lower at 3.9 (0.44), but still close to 4. The standard deviation for employee productivity is .44509. The results indicate that the respondents agree somewhat positively with statements regarding their productivity while working remotely.



## 4.2 Correlation Analysis

Correlational analysis was used to test the relationship between remote working and employee productivity in an educational technology organisation in South Africa.

### Relationship between remote working and employee productivity

At the beginning of the study, hypothesis one (H1) predicted that there is a positive relationship between remote working and employee productivity. The results in Table 2 present a highly significant positive relationship between remote work and employee productivity.

Table 2: Spearman Correlation Coefficient between remote work and employee productivity

			Remote Work	Employee Productivity
<b>Spearman's rho</b>	Remote Work	Correlation Coefficient	1.000	.355**
		Sig. (1-tailed)		<.001
		N	115	115
		Employee Productivity	.355**	1.000
	Employee Productivity	Correlation Coefficient	.355**	1.000
		Sig. (1-tailed)	<.001	
		N	115	115

\*\* . Correlation is significant at the 0.01 level (1-tailed).

Source: Authors

The overall results indicate a highly significant relationship between remote work and employee productivity ( $r=0.355$ ,  $p\text{-value}=0.001$ ). Therefore, the above hypothesis (H1) is acceptable. Hypothesis two (H2) states that there is a negative relationship between remote working and employee productivity. The results indicate a very low relationship between the two variables. Therefore, the above hypothesis is rejected. The results revealed that as respondents work more from remote locations, their productivity tends to increase. The data supports this as the  $p\text{-value}$  falls well below the 0.05 threshold, emphasising the reliability of the results.

### Analysis of Variance

In this subsection of analysis, the ANOVA<sup>a</sup> model analysis is reported. The ANOVA<sup>a</sup> model is used to determine whether the differences between group

means are statistically significant. The results show variance between the groups' means at the 0.05 significance level, with a significance level of 4.786 and a p-value of 0.004, indicating that at least one group's mean differs from the others. The findings suggest that employees in educational technology have different perspectives on contributing to remote work environments while maintaining production levels.

### Regression of the Variables

The model summary for regression shows that the dependent variable (employee productivity) can explain 11.5% of the variability of the predictor variable. Plus, based on the value of R, the results suggest that there is a correlation of 0.91% between remote working and employee productivity. The multiple regression analysis results for remote working and employee productivity indicate that remote working does predict employee productivity this is demonstrated by ( $B = 0.298$ ,  $sig = 0.003$ ).

### Reliability of the Variables

The reliability of remote working and employee productivity were determined using Cronbach's alpha coefficient and is presented in Table 3. Tavakol and Dennick (2011) state that reliabilities with less than 0.60 indicate poor consistency while those in the range of 0.70 – 0.80 are deemed acceptable and those above 0.80 are considered very excellent.

Table 3: Cronbach alpha coefficient for remote working and employee productivity

Scale	Number of Items	Cronbach Alpha	Level of Reliability
Remote Working	12	.701	Acceptable
Employee Productivity	13	.778	Acceptable

Source: Authors

Table 3 clarifies the Cronbach Alpha values for both variables, remote working and employee productivity. The Cronbach's Alpha coefficient for the remote working scale was above 0.70, which is at 0.701, and employee productivity at 0.778. The study reveals that Cronbach Alpha coefficients were above 0.70, confirming therefore that the items were reliable and acceptable.

## 5 Discussion

The study examined the relationship between remote work and employee productivity in the educational technology organisation in Cape Town, South Africa. The results revealed that there is a highly positive relationship between remote work and employee productivity. The results are supported by Mubashira and Kumar (2024) who argued that working remotely can boost productivity by minimising distractions and giving employees more control over their work. Although employees work remotely, the work environment is crucial to employee productivity. Amin and Islam (2022) pointed out that compensation, awards, job security, and the work environment contribute to increased dedication and a sense of belonging to the organisation. However, it is important for organisations to adapt to new technologies and use advanced tools to remain relevant. In South Africa, the reality is that people working remotely have been affected by the electricity load reduction due to ageing infrastructure and other reasons. Furthermore, the cost of data bundles and electricity is high, and most employees sign contracts privately with network providers to have reliable connections. In addition, challenges such as loneliness, job and personal life limitations, technological disruption, and load-shedding must be addressed. On the other hand, a study by Patanjali and Bhatta (2022) found that respondents enjoyed remote work and saw an improvement in productivity due to the elimination of commuting, which also helped lower stress and boost efficiency. Previous studies by Kurdy, Al-Malkawi, and Rizwan (2023) and Fathima and Kumar (2024) have also found a positive correlation between remote work and productivity. Their study found that remote work allows for more flexible working hours, increasing productivity and improving workforce mental health. They found that the benefits of remote work outweigh the potential disadvantages. Raghaw (2024) emphasises the importance of remote work as a fundamental shift in work, requiring a re-evaluation of traditional management techniques. Furthermore, the results are in line with the self-efficacy theory where individuals believe in their ability to succeed and adapt to improve their productivity. Bandura (1982) argued that the employees involved in remote work use technology and communicate with their supervisors and co-workers when necessary. The employees must be trusted by their organisation to deliver under little supervision while working remotely. Organisations will benefit as profits increase due to increased employee productivity. Employees' salaries together with benefits will increase. This is supported by Singh et al. (2022) who emphasised that better productivity tends to maximise organisational competitive advantage by reducing costs and improving output quality.

## 6 Conclusion

The study aimed to examine the relationship between remote working and employee productivity in a selected educational technology organisation based in Cape Town, South Africa. The interplay between remote work and

employee productivity in South Africa reflects a complex landscape influenced by practical and theoretical implications.

### **6.1 Theoretical Implications**

The results of the study revealed that there is a relationship between remote work and employee productivity. Regarding theoretical implication, the current study-

- contributes to the body of knowledge concerning remote work and employee productivity not only for educational technology organisations but all organisations worldwide.
- assists organisations to understand that employees are willing to adopt new tools, which are crucial for productivity.
- highlights specific challenges faced by employees working remotely in access technology and rising electricity costs which affects their productivity.
- shows that through organisational support investing in technology, communication and infrastructure, can enhance the productivity of employees working remotely.

### **6.2 Practical Implications**

The following are the practical implications-

- The results assist educational technology organisations in managing the productivity of employees working remotely better.
- The organisations need to invest in digital tools and software to facilitate remote work. Proper technology can enhance collaboration and communication, which are vital in maintaining productivity in a remote environment.
- Increased reliance on technology raises cybersecurity risks, therefore educational technology organisations must develop robust security protocols to protect sensitive information, which require additional resources and training.
- The educational technology organisation must invest in reliable internet connections, high-speed internet, and secure communication tools to foster a remote work culture.
- Training on effective remote work strategies, such as time management and clear communication, can further support workplace culture.
- Regular check-ins and feedback mechanisms ensure employees are supported and productivity issues are promptly addressed.

By aligning organisational practices with theoretical insights, organisations can create effective remote work strategies that benefit both employees and the organisation as a whole.

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