

THE IMPACT OF TECHNOLOGICAL CHANGES ON EMPLOYEE PERFORMANCE: A CASE OF SELECTED RETAIL OUTLETS IN MBOMBELA, SOUTH AFRICA



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Abstract

A quantitative approach was adopted for the study. The study population consisted of four hundred retail employees, 200 research instruments were administered and 102 usable ones were retrieved. Analysis was done by using Multiple Regression and Pearson Correlation. It was revealed that the Time of Introduction has a positive effect on the perceived Relevance of New Technology and Fairness of Performance Appraisal ($F = 49.647$ with a P value of $P < .001$ and $R^2 = 501$). Pearson Moment Correlation, the result showed that the TI had a significant relationship with the Attitude of Employees. Employees' Collective Perception of New Technology positively correlated with its perceived relevance and Ease of Use. The relevancy of new technology was linked to its perceived EU, the TI, and the ECP and attitudes. EU positively correlated with collective perceptions, perceived relevancy, and employees' attitudes. FPA was positively associated with the timing of technology introduction, perceived relevance of new technology, and employees' attitudes. Employee attitudes displayed positive, significant relationships ($p < 0.0001$) with all variables of the study. To further enhance employee performance upon introducing new technology, organizations should design training and development programmes grounded in cognitive psychology that focus on enhancing employees' cognitive abilities, crucial for successful technology adoption. Organizations should involve employees in the decision-making process regarding the introduction of new technologies.

1. Introduction

The fourth industrial revolution (4IR) represents a dimension where employees alter between digital territories and offline reality by being connected to technology (Xu et al., 2018). According to Schwab (2017), this revolution symbolizes innovative methods whereby technology is integrated into communities and the human body. The 4IR promoted the relentless movement from digitalization to a much more sophisticated form of innovation based on a variety of technologies in creative ways. This affects organizations across all industries in several ways, such as shifting customer expectations and enhancing commodities. Data also promotes

asset productivity, collaborative innovation among organizations, and converting traditional operating models into new digital ones. Technology, the heart of the 4th Industrial Revolution, enables employees to perform tasks more easily, faster, and more efficiently. The fundamental proponent of growth and development within the workplace is the implementation of new technologies. Technology has negatively and positively impacted many organizations, primarily the retail industry. As goods and other services provided by retail firms become more modernized, it becomes imperative for employees to be more technologically aware and develop digital skills and competencies (Nubler, 2018; Hughes et al., 2019). Some technologies, such as artificial

intelligence, machine learning, and digital connectivity, promote fluidity and higher production rates among the workforce within retail industries.

The level of execution of work duties symbolizes employee performance. It is an intrinsic drive encouraging employees to invest in their work tasks. New technology has impacted employee performance in various ways, and South Africa can promote technological innovation to reignite productivity, growth, and job creation. As such, technological innovation positively impacts employee performance within the South African retail industries as it minimizes employee bias and errors maximizes productivity and promotes communication speed within the workforce (Mardon et al., 2020; Garcia-Murillo et al., 2018). Employees are accustomed to their work status quo or traditional ways of performing job descriptions. Since innovation revolves around inventing and implementing new methods and ideas, the process becomes disruptive to the employee. This means that employees will struggle to adapt to the new ways of performing work, ultimately resulting in many issues such as burnout, turnover, and most importantly, low levels of employee performance. Bustinza et al. (2019) state that implementing technology may be risky when it has not been tested or proven beforehand. Innovation practices are expensive and waste a lot of time for many organizations. Too much investment in innovation practices can lead to organizations losing should the innovative products and services not marketed properly. Also, the organization's reputation may be tarnished if the new products or innovative services are poorly received. An organization gets transformed upon the introduction of new technologies, and this inevitably affects employee performance (Metrick & Yasuda, 2021).

Technology is complex, and only trained workers can execute duties properly when the technical equipment is constantly updated. Poor employee performance can be anticipated if an employee receives unfavorable reviews related to the usage of new technologies. Technostress is a modern calamity triggered by incompetent employees who cannot become accustomed to new technologies, causing frustrations and poor mental health to the extent of struggling to accept the latest technology (La Torre et al., 2019). Increased workload caused by new technology, lack of information for the new technology, and lack of preparation for the new technology promote technostress, drastically affecting employee performance within the organization. According to Sithole and Kruss (2020), 69.9% of the 41 535 South African businesses are innovation-active, and the average business spends 1.97% of its income turnover on innovation. This leads to improved quality of commodities, increased revenue, profitability, range of goods and services, and production

flexibility among these organizations. This means South African organizations had participated in the scientific, commercial, financial, organizational, or technological steps toward implementing innovation. The 4IR is the current period of increasing technological advancements, significantly changing how businesses operate and employee's function. A study by Marivate et al. (2021) displayed that more than 40% of retail organizations in South Africa have not explored the 4th Industrial Revolution, and this is mainly instigated by a lack of resources, lack of corporate interest as well as the lack of exposure to the benefits of the 4IR. 30% of these organizations are in the awareness stage, 19% of these businesses are researching, creating, and applying use cases to test environments, and only 8% of retail organizations are aligning their systems and integrating 4IR technologies into certain areas of their business functions. Hence, the study examines the effect of new technologies on employees' performance in the retail industry and determines the relationship between new technology and employee performance in the retail sector.

2. Overview of Technology in Retail Industry

A retail business entails the economic sector, where organizations sell goods and services directly to customers for personal use. It involves many activities, from brick-and-mortar stores to online marketplaces (Sorescu et al., 2011). The main objective of a retail business is to address the customers' needs and wants by providing them with a broad basket of goods and services (Dal Mas et al., 2022). Retail firms acquire goods from manufacturers and wholesalers and then sell to target markets through physical storefronts and e-commerce websites. The retail sector plays a fundamental role in the global economy and frequently uses various departments such as merchandising, marketing, inventory management, customer service, and logistics. Popular retail businesses accommodate customer preferences, market trends, and opportunities for adaptation during decision-making (Haas, 2019; Norman & Kabwe, 2015). Nowadays, retail companies can't maintain continuity through competitive advantage without adopting the latest technology. Every organization's primary goal is to generate profits, which are heavily influenced by how employees perform within the workplace. Technological innovation has revolutionized the retail industry over the past few decades, promoting wide expansion in product diversity, retail store sizes, and employee performance (Basker, 2016). Advanced technology accelerates the retail employees' performance and operational effectiveness of retail firms and addresses the customers' needs (Liu et al., 2013).

South African retail industry is the second biggest employer after the government. However, the potential for the retail industry to fully prosper has been affected by the recent load shedding and

the Covid-19 pandemic (Louw et al., 2022). With the electricity supply constraints that South Africa has been experiencing for the past few years, load shedding has proved to be extremely disruptive to the maximum success of the retail industry (Goldberg, 2015). The Covid-19 pandemic forced most South African retail companies to be technologically innovative. Pick N Pay launched its online same-day delivery service, while Shoprite launched its Sixty60 application, which delivers products to customers in less than an hour (Masojada, 2021). Hirsch (2012) asserts that the South African retail sector has enormous potential for growth and expansion because of the Chinese entrepreneurs' interest in opening retail businesses across South Africa.

The internet phenomenon is a form of technology that has minimized the time delays between international and South African trends, promoting the perceived attractiveness of the South African retail sector. Other factors that maximize its attractiveness are the general perception that South Africa is the key to the rest of Africa and the increasing support by the local emerging middle class and wealthy foreign shoppers (Schmidt et al., 2016). The retail industry in South Africa is notable for being environmentally friendly, introducing new technology, training staff to meet the customers' needs, taking social responsibility, and offering a wide range of quality products and services (Hirsch, 2012). Retail customers and employees in South Africa still prefer to touch and feel products. Therefore, there is a combination of online shopping and physical shopping depending on the type and cost of goods (Gielens & Steenkamp, 2019). Online shopping might increase in South Africa in the coming years. Millennials comprise the most significant percentage of South Africa's population and are expected to be the main users of online shopping methods in the coming years (Schmidt et al., 2016).

2.1. The required procedure for the adoption of new technology

In today's unpredictable business landscape, investing in new technology is not an option but a compulsion for an organization's workforce to remain competitive and relevant. Training is fundamental in providing employees with the appropriate skills and knowledge required to operate the latest technologies introduced in the workplace. While some employees can easily be trained and eager to embrace innovation, some face challenges adapting to it due to a lack of familiarity, fear of change, or other factors. In such circumstances, organizations must consider dismissing inept employees based on operational requirements to align the appropriate workforce with evolving technology needs (Gandidze, 2007). In the course of introducing new technology, some positions might become redundant. The employer has no choice but to dismiss employees whose roles have become

redundant due to the introduction of new technology or to try to deploy them into new positions within the organization if possible. Any existing employee who struggles to adapt to new technology and cannot be deployed to another position within the organization must be dismissed (DeCenzo et al., 2016). A dismissal triggered by operational reasons does not result from the actions or faults of the employee. Operational requirements dismissal could be a result of a change in the employer's economic, technological, structural, and similar needs.

The technological needs of an organization refer to the introduction of the latest technology, such as machines and computers, that has led to the redundancy of employees. The dismissal process must be promoted with sensitivity and fairness. Therefore, the employer must provide authentic economic justification for retrenching employees. An employer must consult with employees or their representatives before implementing a retrenchment programme. Therefore, a discussion must be had among all parties about the motives for the retrenchment. When considering dismissing employees based on their operational requirements, the employer must consult with various stakeholders, including the affected individual, in terms of the collective agreement, a workplace forum if it is available, a registered trade union if a workplace forum is not available, and employees' nominated representatives or the employees themselves if a trade union is not available. The purpose of the consultation is to agree on the need for staff reductions based on operational requirements and how they will take place (Venter & Levy, 2015; Bendix, 2019; Grogan, 2015; Du Plessis & Fouche, 2006). During the consultation phase, the employer must give reasonable written notice to the relevant parties to the proposed reductions. This allows employees or their representatives to have the opportunity to influence management decisions so that alternative measures to deal with the need for retrenching can be considered. The only exception to giving prior notice for employee dismissal occurs when the employees in question hold occupations that allow them to disrupt or sabotage the organization (Venter & Levy, 2015).

A range of alternatives for retrenching employees can be considered. Firstly, voluntary retrenchment may be implemented, which is a mutually beneficial avenue. It occurs when employers offer employees the choice to embrace retrenchment packages voluntarily. This retrenchment is effective for a workforce willing to depart the organization independently and open to acquiring benefits in return, such as severance pay (Adesina, 2015). Another alternative may be early retirement, which focuses on the much older segment of the workforce in organizations. Employers may encourage older employees to accept early retirement by offering them retirement benefits greater than

typical severance packages (Casillas et al., 2019). A third option may be redeployment, whereby the affected employees are placed in different organizational occupations or departments. Redeployment allows employers to keep valuable employees while minimizing the negative effects of retrenchment (Rico et al., 2021). Temporary layoffs may also be considered, whereby the employer suspends the affected employees during challenging periods to invite them to the organization when the organization's changes improve. When employers consider a retrenchment strategy, they must consider the circumstances and needs of their organizations, and the way it is implemented should be aligned with the legal and contractual requirements (Nekoei & Webber, 2020). When retrenchment occurs within an organization, employers are expected to ensure that the affected employees receive settlements and support. Severance pay is a once-off payment that the employer may give to the affected employees. The amount of the severance pay may be based on the affected employee's years of experience and remuneration packages (Holzmann et al., 2011). Older employees who are considering retirement will be offered retirement benefits (Dorn & Sousa-Poza, 2010). Some employers assist the affected employees' job-seeking goals by offering outplacement services. Such services include CV writing, job searches, and career counseling. In some circumstances, employers may allow the continuation of some employee benefits, such as healthcare coverage for a specific period, to the affected employees (Kilcrease, 2013). In the case of technological change, employees who adapt easily and have relevant skills to operate the new technology will be retained, while posts will become redundant for those who could not adapt, which could result in retrenchment.

2.2. The general perception of employees towards technology in the retail industry

Organizations of all calibres are adopting the latest technologies to manage their operations flawlessly, maintain continuity in the market, possess a competitive advantage, increase communication speed, decimate human errors, and maximize organizational performance (Basker, 2016). Technology has significantly changed how jobs are performed, converting traditional working methods into more sophisticated and high-technology methods. The adoption of new technology not only strengthens the organization but also assists employees. Nevertheless, due to an established set of norms and attitudes in the workplace, some employees consider introducing new technology a threat to their jobs and livelihoods. Ultimately, they experience negative feelings such as anxiety and fear towards new technology. The anxiety formed by employees on the basis that new technology will render human labor obsolete is not new. Such conceits stem from the popular perception that machines

produced out of technology do not create jobs but destroy the need for manual labor.

Furthermore, humans have restrictions that machines do not have. Machines are likely to be error-free and faster. Ultimately, companies prefer machines more than humans, resulting in the loss of jobs for many people worldwide (Baysal et al., 2020; Kelly, 2022; Yarlalagadda, 2018). Technology is continuously progressing, and humans are struggling to keep pace. When a new technology is announced, employees subconsciously decide whether to use it. The perception that technology is complex and sophisticated creates fear and anxiety, which causes employees to avoid using it despite its benefits. In some cases, such fear and anxiety escalate to palpitations, sweating, shivering, and negatively impacting job performance (Christensen, 2013). When forced to interact with new technology, reluctant employees make more errors, take more time to master the basics, and experience dismal levels of job performance. Therefore, employees become disadvantaged as they cannot use the innovations. In desperation to solve this problem, the South African government and various non-profit organizations are trying necessary to mitigate these fears and anxieties by providing technological resources, infrastructure, and skills acquisition programmes. However, South Africans' reluctance to use new technologies remains obstinate, limiting its introduction in organizations (Faloye et al., 2022). The black South African are relatively more disadvantaged in education, asset ownership and exposure to opportunities. Thus, they are less likely to have access to technological resources and are most likely to view the introduction of new technology negatively. Various other studies have revealed that anxiety triggered by employees who refuse to use the latest technologies positively correlates with age and gender. Males interact much earlier with various multiple forms of technology than females. Studies have shown that males are more open to technological adaptation than females. This can be attributed to societal norms, cultural expectations, and historical gender roles that may influence how people perceive new technologies in organizations. This is noteworthy because early use of technology minimizes anxiety and maximizes readiness to use it in day-to-day life (Shahzad et al., 2021; Awofala et al., 2019). This implies that a person's age when they first interact with technology impacts the anxiety levels they experience. Like gender, age also influences the anxiety related to the employees' resistance to adapting to technological work environments. Younger employees often show higher levels of comfort and willingness to use the latest technologies in the workplace than older generations (Hershatter & Epstein, 2010).

The general perception among the South African workforce towards new technology demonstrates a common global concern. South African employees, like those elsewhere, fear that the latest

technologies are designed to decimate their occupations gradually, deeming manual labor unnecessary (Kotze et al., 2016). This perception leads to stress and anxiety, which can harm their job performance and productivity in organizations. Employees' negative views towards using new technologies are also derived from a fear of the unknown and a lack of understanding of how humans and machines can collaborate to promote the highest levels of job performance (Kessler, 2013). To foster work environments with positive employee perceptions towards technology, employers can consider providing detailed and meaningful training, demonstrating the advantages of new technology to their occupations, and creating a healthy work environment that motivates employees to welcome technological advancements to organizations (Stewart et al., 2017).

3. Methodology and Results

A quantitative approach was adopted for this study. The closed-ended questionnaire comprised seven sections, including the demographic variables. Close-ended questions are restrictive as participants select an option from a Likert-type scale consisting of a fixed set of answers (Islam et al., 2022). The questionnaires were directly assigned to the employees during working hours since most employees will only be identified with their organization. The choice of language for the questionnaire was English, as the eligible participants consisted of educated and semi-educated employees such as cashiers, supervisors, and managers in the retail industry. The research instrument was a

self-developed questionnaire that focused on the study's objectives. The participants were expected to respond to the questions at their convenience and return the instrument to the researcher. The questionnaire was self-administered to acquire information on the impact of introducing new technology on employee performance within Mbombela's retail industry.

Both descriptive and inferential statistics were used for data analysis. The descriptive data was analyzed in the form of frequencies and percentages to explain the demographic variables, and inferential statistics such as Pearson Correlation and Multiple Regression were used to determine the effect and the relationship between new technologies and employee performance. Multiple regression is a popular analytical alternative in scientific studies because it assists researchers in understanding how other factors influence an outcome. Therefore, the impact or effect a factor has on an outcome may be discovered (Kelley & Bolin, 2013). The respondents were employees of retail stores in different departments occupying various posts in semi-skilled and skilled positions who had used technology to perform the job. The study used purposive convenience sampling whereby respondents were approached based on their availability and willingness to participate in the study. A total of 180 questionnaires were distributed and 102 useful ones were returned for analysis. This represented a 56.7% response rate.

Table 1. Demographic characteristics of participants

Characteristics	Category	Frequency	Percentages
Gender	Male	55	53.9
	Female	47	46.1
	Total	102	100
Marital Status	Single	47	46.1
	Married	40	39.2
	Divorced	10	9.8
	Widowed	5	4.9
	Total	102	100
Age	<20 years	3	2.9
	21-50 years	88	86.3
	51-60 years	9	8.8
	>60 years	2	17.6
	Total	102	100
Years of working in the retail industry	< 5years	21	20.6
	6-15years	65	63.7
	16-21years	16	15.6

	Total	102	100
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Multiple regression was used to examine the effect of new technologies on employee performance in the retail industry. Pearson correlation measures the strength of the linear relationship between two quantitative variables. It is only suitable for establishing linear relationships. Therefore, the Pearson correlation was suitable for determining the relationship between new technologies and employee performance within the retail industry. A multiple regression was employed to analyze the effect of new technologies on employees' performance in the retail industry. A total of six variables can be noticed within the contents of the self-designed research instrument used for the study. Furthermore, three of the six variables were selected to represent the dependent and the independent variables. Time of Introduction (TI) and the Relevance of New Technology (RNT) represented the new technologies (independent variable), while Fairness of Performance Appraisal (FPA) measured the employees' performance (dependent variable).

Table 2. Correlations for Multiple regression Analysis

		<u>FPA</u>	<u>TI</u>	<u>RNT</u>
Pearson Correlation	FPA	1.000	.515	.668
	TI	.515	1.000	.462
	RNT	.668	.462	1.000
Sig. (1-tailed)	FPA		<.001	<.001
	TI	.000		.000
	RNT	.000	.000	
N	FPA	102	102	102
	TI	102	102	102
	RNT	102	102	102

In order to analyze the first hypothesis, the table above illustrates that in terms of Fairness of Performance Appraisal (FPA), the Time of Introduction (TI) and Relevance of New Technology (RNT) had Pearson correlation values of 0.515 and 0.668, respectively. These values lie between 0.3 and 0.7. Therefore, a conclusion can be made that the Fairness of Performance Appraisal positively affects the Time of Introduction and Relevance of New Technology, thus accepting the alternative hypothesis and rejecting the null hypothesis.

Table 3. Coefficients model

COEFFICIENTS													
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-1.589	2.065		-.769	.444	-5.687	2.509					
	TI	.400	.122	.262	3.272	.001	.158	.643	.515	.312	.232	.786	1.272
	RNT	.609	.089	.547	6.832	<.001	.432	.785	.668	.566	.485	.786	1.272

a. Dependent Variable: FPA

Multiple regression was employed at 95% confidence levels. The analysis illustrated a significant model summary: $F = 49.647$ with a P value of $<.001$ and $R^2 = .501$. The results indicated that the model significantly predicts improvement in Fairness of

Performance Appraisal (FPA). Additionally, the model displayed that the predictor variables explained 70% of the variance in Fairness of Performance Appraisal (FPA), thus accepting and rejecting the alternative hypothesis. Furthermore, the analysis

showed that an effect exists between the Time of Introduction ($\beta = .262$, $t = 3.27$, $P < .001$), Relevance of New Technology ($\beta = .547$, $t = 6.83$, $P < .001$), and Fairness of Performance Appraisal signifying that the alternative hypothesis is accepted and the null hypothesis is rejected. The results of the VIF factors show no evidence of multicollinearity in the dataset.

Multiple regression was used to analyze the results of the study objective. It was discovered that both Time of Introduction (TI) and Relevance of New Technology (RNT) had a significant impact on the Fairness of Performance Appraisal (FPA). Ukpere et al. (2014) revealed that entrepreneurs and employees perceive new technology as very relevant and innovative, enabling them to manage their time and work activities adequately. This has allowed them to be present in all dimensions of their business spaces, resulting in high-performance maintenance in organizations.

Similarly, the study revealed that employees perceive new technology as relevant and appropriate by applying it to boost their work performance and productivity. However, a study by Autor and Salomons (2018) revealed that automating manual labour does not necessarily guarantee high employee productivity and performance, thus making new technology irrelevant to employees. Employees feel that new technologies are irrelevant to them and their work as they cause project experiences to fail, destroying work performance. Motivated employees are open to embracing and applying the latest technologies in their daily operations. Motivation encourages a workforce to adapt to technological changes within their job structures and enhance their work performance. Therefore, motivated employees perceive contemporary technologies as relevant to their operations, enhancing their work performance (Dobre, 2013). Dobre (2013) further revealed that the timing of introducing new technology in the workplace can also influence performance in organizations. The latest technologies at a particular period when employees are free, receptive and adequately trained can increase their workplace performance. Introducing technology relatively early can improve engagement in organizations. Engaged employees tend to perform better, resulting in greater employee performance. Technology introduced relatively early positively influences the efficiency and productivity of a workforce within an organization. Employees can perform work better and quicker, signifying major symptoms of enhanced employee performance in the workplace (Boothby et al., 2010).

Furthermore, it was discovered that the early introduction of new technology empowers the employees within organizations and can contribute to greater productivity and performance. On the other hand, Rivard and Lapointe (2012) revealed that poorly

introduced technology may result in resistance and negatively affect employee morale. Employee morale is crucial to ensure employee performance and productivity occurs in organizations. Thus, it can be concluded from the study's findings that the poor introduction of new technologies can decrease employee performance in organizations. The organizational culture also determines the timing of introducing new technology in the workplace. Introducing new technology that aligns with the employees' values and norms in organizations can result in successful technology acceptance and integration, which results in greater employee performance in organizations (Brown et al., 2010). Sibanda and Ramathan (2017) assert that the timing of introducing the latest technologies should be aligned with an organization's strategic objectives. Therefore, introducing new technology must be done to align it with broader organizational strategies for it to contribute meaningfully to the performance of organizations and employees.

The fairness of performance appraisal was revealed to be connected to increased motivation and commitment in an organization's workforce. When employees perceive the performance appraisal process as fair, their organizational performance is maximized through motivation and commitment (Selvarajan & Cloninger, 2012). Furthermore, it was indicated that positive perceptions of performance appraisal systems are associated with high levels of job satisfaction. Thus, employees who feel rated objectively in their performance will be more content with their work roles and tasks, resulting in increased performance. The findings also discovered that fairness of performance appraisal is positively associated with high levels of employee engagement. This means that when employees believe their performances are rated fairly, they will be more involved in their work activities, resulting in greater performance in organizations and amongst the employees. Selvarajan et al. (2018) revealed that the perceived fairness of performance appraisal among employees can minimize their stress and anxiety. Stress and anxiety are major barriers to employee performance; thus, their elimination promotes greater performance among organization workers. Performance appraisals perceived to be fair were discovered to be closely linked to organizational justice. When employees are convinced that their performance is assessed fairly, they develop positive perceptions of their employing organizations, which enhances their workplace performance (Selvarajan et al., 2018). Brown and Hyatt (2010) revealed that when employees perceive their performance appraisals as fair and objective, they are most likely to seek employment elsewhere. Therefore, the perceived fairness of performance appraisals can reduce employee turnover in organizations, which results in organizational stability and continuity. However, a study by Buckner (2023) revealed that a lack of transparency in the

employees' performance appraisal can undermine its perceived fairness. The employee's perception of new technology in relation to performance can be access based on the time the technology is introduced and the relevance of the technology to the current job responsibilities of the employee. The workforce is likely to perceive a performance appraisal based on a new technology if there is no adequate preparation for the usage of the technology.

Further analysis was done by using Correlation coefficients to determine the strength and the direction of a relationship between variables. A Pearson correlation measures the degree of a linear relationship between two variables that follow a normal distribution. Therefore, it is used to determine the relationship between dependent and independent variables (Schober et al., 2018). In terms of correlated data, changes in one variable influence changes in another, either through negative or positive correlation. Correlation coefficients are standardized to a scale

that ranges between (+1) and (-1) with 0 signifying no linear relationship between the variables. As the correlation increases, it approaches a perfect linear relationship as illustrated by the Pearson Correlation in the form of a straight line (Baak et al., 2020). For this study, a correlation ranging between 0.01 and 0.05 was selected to determine the positive relationship between the variables in question.

A total of six variables were identified from this research study. The Time of Introduction (TI), Ease of Use (EU), and Relevance of New Technology (RNT) represented the new technology (independent variable) while the Fairness of Performance Appraisal (FPA), Attitude of Employees (AE), and the Employees' Collective Perception (ECP) signified employee performance (dependent variable). The table below clearly displays these variables and their respective coefficient correlations.

Table 4. Pearson Correlation Coefficient analysis of variables

		TI	ECP	RNT	EU	FPA	AE
TI	Pearson Correlation	1	-.013	.462**	-.057	.515**	.225
	Sig. (2-tailed)		.897	<.001	.569	<.001	.023
	N	102	102	102	102	102	102
ECP	Pearson Correlation	-.013	1	-.234*	.399**	-.156	-.499**
	Sig. (2-tailed)	.897		.018	<.001	.118	<.001
	N	102	102	102	102	102	102
RNT	Pearson Correlation	.462**	-.234*	1	-.241*	.668**	.615**
	Sig. (2-tailed)	<.001	.018		.015	<.001	<.001
	N	102	102	102	102	102	102
EU	Pearson Correlation	-.057	.399**	-.241*	1	-.132	-.305**
	Sig. (2-tailed)	.569	<.001	.015		.185	.002
	N	102	102	102	102	102	102
FPA	Pearson Correlation	.515**	-.156	.668**	-.132	1	.538**
	Sig. (2-tailed)	<.001	.118	<.001	.185		<.001
	N	102	102	102	102	102	102
AE	Pearson Correlation	.225*	-.499**	.615**	-.305**	.538**	1
	Sig. (2-tailed)	.023	<.001	<.001	.002	<.001	

	N	102	102	102	102	102	102
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* Correlation is significant at the 0.05 level (2-tailed).

The research study explored the correlation between the introduction of new technology and employee performance. To discover whether a link existed, the study employed six different variables: Time of Introduction (TI), Employees' Collective Perceptions (ECP), Relevance of New Technology (RNT), Ease of Use (EU), Fairness of Performance Appraisal (FPA), and Attitude of Employees (AE). The main aim of this section was to look at the relationship among variables to establish the study's second hypothesis. Dividing the six variables into two pairs was necessary as one pair consisting of Time of Introduction (TI), Ease of Use (EU), and Relevance of New Technology (RNT) represented the independent variable. The second pair encompassed the different aspects of employee performance comprising Fairness of Performance Appraisal (FPA), Attitude of Employees (AE), and Employees' Collective Perceptions (ECP). A positive correlation is determined at a range of 0.01 to 0.05, which was highlighted in yellow within the above table. Various notable correlations were discovered that made it easier to analyze the relationship between the independent and dependent variables. Firstly, a positive correlation of 0.023 was noticed between the Time of Introduction (TI) and the Attitude of Employees (AE), implying that the timing of new technology introduction to a firm is related to the employees' attitudes towards it. The Pearson correlation analysis further revealed a highly significant correlation between Time of Introduction (TI) and Relevance of New Technology (RNT) with a p-value of < 0.001, indicating a close connection between the timing of technology introduction and employees' views on its relevance. Additionally, a significant correlation was discovered between the Time of Introduction (TI) and Fairness of Performance Appraisal (FPA) with another p-value of < 0.001. This suggested a strong relationship between the timing of technology implementation and employees' perceptions of how fair the performance appraisal process is.

Secondly, the Employees' collective perceptions towards new technology (ECP) variable positively correlated with the Relevance of New Technology (RNT) at 0.018, insinuating that employees who positively perceived the new technology, found the technology to be more relevant to them and vice versa. Moreover, a highly significant relationship was noticed between Employees' collective perceptions towards new technology (ECP) and Ease of Use (EU) at a p-value of <0.001, which suggested that the workforce's collective perceptions were closely linked to the perceived easiness of applying new technology. Lastly, a significant relationship was noted between EPT and the Attitude of Employees (AE). With a p-value of <0.001, this hinted that a powerful relationship existed between the workers'

collective perceptions towards new technology and their overall attitudes in organizations.

Furthermore, a positive link was discovered between the Relevance of New Technologies (RNT) and Ease of Use (EU) at 0.015. This meant that the relevance of new technology according to the employees was aligned with the technology's difficulty level for the workforce in terms of operating it. A positive connection was also realized between the Relevance of New Technologies (RNT) and Employees Collective Perceptions (ECP) at 0.018. The Pearson correlation analysis revealed strong relationships involving the Relevance of New Technology (RNT) and Time of Introduction (TI), Fairness of Performance Appraisal (FPA), and Attitude of Employees (AE) all with p-values of <0.001. This means that highly significant correlations could be discovered between the Relevance of New Technology (RNT) and all other variables of the study.

The Pearson correlation analysis discovered a positive significant relationship between Ease of Use (EU) and Employees' Collective Perceptions towards New Technology (EPT), with a highly significant p-value of < 0.001. This suggested that as the perceived ease of using new technology increases, there was a corresponding positive association with how employees perceived the technology. Additionally, the Ease of Use (EU) positively correlated with the Relevance of New Technology (RNT) at 0.015, hinting that the employees judged the relevancy of the new technology introduced in the workplace based on how easy or difficult it was to operate it. Furthermore, Ease of Use (EU) was found to possess a positive correlation value of 0.002 with the Attitude of Employees (AE), suggesting that employees had different attitudes towards new technology in relation to how convenient the technology was for the workforce to operate.

The Pearson correlation analysis revealed that the Fairness of Performance Appraisal (FPA) and the Time of Introduction have a highly significant correlation value of 0.001, indicating a connection between the employees' perception of fairness during performance appraisals and the timing of technology implementation. Similarly, Fairness of Performance Appraisal (FPA) and Relevance of New Technology (RNT) exhibited a positive relationship symbolized by a p-value of <0.001, symbolizing that the perceived fairness of performance appraisals increased when the perceived relevance of new technology increased. Additionally, a positive association (p<0.001) was observed between Fairness of Performance Appraisal (FPA) and Attitude of Employees (AE). The Pearson correlation analysis indicated that Attitude of Employees (AE) positively correlated with all five other variables of the study. With a p-value of 0.023,

the Attitude of Employees (AE) positively correlated with the Time of Introduction. Additionally, the Attitude of Employees (AE) displayed highly significant positive correlations with Employees' Collective Perceptions towards New Technology (ECP) ($p < 0.001$), Relevance of New Technology (RNT) ($p < 0.001$), and Fairness of Performance Appraisal (FPA) ($p < 0.001$). More so, the Attitude of Employees (AE) positively correlated with Ease of Use (EU) at 0.002. These results highlight that the Attitude of Employees is positively linked with every other variable in the study, emphasizing its central role in shaping perceptions across diverse aspects of technology implementation in the workplace. Therefore, for all statistically significant relationships, the null hypothesis is rejected, and the alternate hypothesis is accepted. Similarly, for variables that lack correlation, the null hypothesis is accepted, and the alternate hypothesis is rejected.

Schilke (2014) suggested that introducing new technology relatively early can increase an organization's competitive advantage in its operating sector market. This symbolizes its relevance to an organization and the workforce as early adopters of the latest technologies can gain a head start in exploiting the benefits of the latest technologies, enhancing employee performance in the process. Furthermore, the results suggested that the rapid introduction of the latest technologies to respond to unpredictable markets enhances an organization's and its employees' relevance. According to Leonard (2011), organizations that introduce the most advanced technologies at the right time demonstrate adaptability. Adaptability is essential in industries when technological advancements occur rapidly, enabling organizations and employees to remain relevant in dynamic markets. However, Tulenheimo's (2015) findings argue that introducing new technology too early can present challenges as immature technologies may not present the expected advantages. In that regard, the employees question the relevance of the new technology, which in turn decreases employee performance. Similarly, introducing new technology too early may face resistance from users who may require time to adapt. In that regard, the poor timing of technology may disrupt the employees' performances, and it is deemed rather irrelevant (Tang et al., 2012). De Veer et al.'s (2011) findings emphasize the importance of strategic timing when introducing new technology in organizations. When new technology is introduced too late, it may be irrelevant to employees as organizations may miss crucial opportunities.

The timing of introducing new technology in organizations can affect its implementation. This means that the timing of introducing new technology in the workplace can determine how well employees adapt to it, potentially influencing perceptions of

fairness in their performance appraisals and overall employee performance. More so, the timing of introducing the latest technologies impacts employee acceptance or resistance to using new technology. If employees feel the timing is rushed or poorly planned, it may potentially impact their performance appraisal process, ultimately decimating their employee performance (Leonard, 2011). There are hardly any studies that have compared the time of introducing new technologies and fairness of performance appraisal together, but there is literature that has studied each variable independently.

Dobre (2013) revealed that when employees develop positive perceptions of new technology, which is viewed as essential and meaningful, higher levels of employee engagement can be experienced. Engaged employees are more likely to accept and effectively apply new technologies, contributing to their relevance to the workforce. Additionally, Hartnell et al. (2011) revealed that employees' positive collective perceptions towards new technology are associated with a collaborative organizational culture. The results suggest that when employees view new technologies as tools that accommodate innovation and collaboration, it improves the technology's relevance in promoting teamwork and innovation. Collective perceptions are generally triggered by the degree of organizational support for implementing technology. When a workforce perceives strong support from leadership and organization, it maximizes the relevance of the new technology and fosters positive perceptions (Hartnell, 2011). Lau (2011) revealed that positive collective perceptions towards new technologies, such as being user-friendly and easy to navigate, can positively influence the latest technologies' adoption rate and ease of use. The perceptions that new technologies are easy to use are closely linked to productivity and performance. When they formulate positive perceptions, employees are more likely to use new technologies frequently as part of their daily tasks.

Lin and Chang (2011) further assert that employees with positive collective perceptions towards new technologies are most likely to possess positive attitudes towards its introduction to the workplace. In other words, if employees perceive new technology to be useful and meaningful, they will most likely embrace it with a positive outlook. Furthermore, positive collective perceptions towards implementing new technology in the workplace can improve job satisfaction. Employees who consider technology a tool that makes work easier and more efficient experience high levels of job satisfaction and, consequently, their attitudes. Positive collective perceptions towards new technology are also associated with enhanced employee engagement. Employees who consider new technology valuable and useful tend to engage with it actively, leading to positive attitudes toward their work (Barrick

et al., 2015). Reichert (2019) also suggested that organizations that foster positive collective perceptions toward new technology tend to cultivate an innovation-friendly environment. Employees immersed in such work environments develop positive attitudes toward adopting new technologies.

A correlation was determined between the Relevance of New Technology and the Time of Introduction. According to Taherhoost (2018), the relevance of new technology is significantly influenced by the user acceptance of new technology. This suggests that when new technology is introduced relatively early when employees are ready and willing to use it, the organization and employees may experience the positively perceived relevance of new technologies. Technologies perceived as relevant by employees and easy to use tend to be employed the most in organizations. Employees gravitate towards new technology when they find it user-friendly and relevant to their work activities. The relevance of new technology is often associated with ease of use when the new technology is aligned with the users' needs and preferences. New technologies that foster positive attitudes among employees are also deemed relevant and easy to use.

Lee et al. (2013) revealed that the ease of use of technology for employees depends on the training and support assigned to them by their employees. If employees receive comprehensive training and support, they will find the technology easy to use, reducing barriers to adoption. The success of the training provided to the workforce can ultimately enhance their attitudes toward the new technology, resulting in improved organizational performance. Hanna et al. (2022) suggested that when new technology is compatible with existing systems in organizations, it is easier for the workforce to use. While existing systems do not form a component of the study's variables, it can be argued that if new technology is successfully incorporated into existing systems, the attitude of employees towards the innovation will be more receptive, resulting in greater employee performance in organizations. The findings of Lee et al.'s (2013) study highlighted that employees' attitudes towards new technology are linked to its time of introduction. Early introduction of new technology may foster positive employee attitudes as they continuously learn how to use it daily.

4. Conclusion

The relationship between the workforce and technology usage has become inseparable in the contemporary scenery of retail and anywhere in general. Technology has become a fundamental driver of operations as it constantly evolves and redesigns how employees engage with their tasks. However, this transformative phenomenon is not without its difficulties. The speedy rate of

technological change frequently triggers stress, anxiety, depression, and an inability to cope among employees. This study established the relationship between the elements of technology explored in the study such as Time of Introduction (TI), Ease of use (EU), and Relevance of New Technology (RNT), and elements of performance which were fairness of performance, attitude of employees, and employee collective perception. Likewise, Fairness of performance appraisal has been shown to impact on time of introduction and relevance of new technology. Hence, the study concluded that employees' performance can be optimized with the use of technology provided the employees were prepared and equipped ahead of the time of introduction.

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