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Technology usage and employee behaviour: controversies, complications, and implications in the Nigerian business environment

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Technology usage and employee behaviour: controversies, complications, and implications in the Nigerian business environment

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Abstract:
Organizations are among the key units of the society. An organization comprises of several people including employees. The behaviour of employees determines the performance and efficiency of the organization. Technology is an important factor that distinguishes one organization from the other. Employee's acceptance, rejection, and adaptability to technology being used determine to a great extent how organizations will thrive in a business environment. The drive of technology usage is to ensure that work processes are made easier, faster and to improve the organization's economic efficiency. In addition, technology usage greatly influences employee behaviour. The aim of this paper is to find out how technology usage affects employee behaviour and vice versa. It is important to understand that in order to improve employee's usage of technology incorporated into the organization, individual behaviour of employees must be examined cum their attitude. The results of the study indicate that employee behaviour mainly affects technology usage, promotes individual learning, increases efficiency and effectiveness, and improves organizational performance. The paper therefore recommends periodic review of organizational policies and in addition, procure hardware and software to guide against hackers and scammers to avoid losing those important information.

Key Words:
Technology acceptance model, organisational performance, behavioural intentions

1. Introduction

Technology is one of the most relevant components of organization's business environment which offers countless opportunities for organisations to succeed in their business environment [1]. Technology and the workplace are one of the trending research areas that researchers are showing keen interest. The presence of technology in the workplace is becoming obvious and the fear that, it could replace some jobs in the next decade or less cannot be farfetched [2]. Then how are organisations responding to this? Why so much crave for latest ultra-modern and state of the art technology in business processes [3].

It was reiterated that the reason for quest for the adoption or adaptation of the latest technology was because it helps both employees and organisations to be more effective, efficient, proficient, knowledgeable and profitable [4].

Aside these direct influences of technology on both employees and organisations, the use of technology has helped to break geographical barriers, language barriers and cultural barriers, thereby allowing employees to be more effective and efficient, which are evident in organisational work processes, productivity, competitiveness and profitability [5]. Consequently, technological changes cause business practices and processes to evolve, which makes organizations to invest more in it [6]. In fact, organizations have always sought and adopted technologies that enhance the effort of their manpower in production and management in the management of organizational operations.

However, the relationship between technology usage and organisational behaviour had been controversial [7]. It has been argued that the use of technology in the workplace leads to high employee productivity as other variables interfere such as employee's high morale [8]. Another research showed also that there is loss of productivity when employees use technology in the workplace [9]. A report from Nucleus Research [10] stated that the use of Facebook at work had cost companies 1.5 percent of their total productivity. But, on the other hand, the ability to use Facebook was an added advantage to be retained in the workplace as this will allow employees to connect with their loved ones and colleagues in the workplace. To buttress this further, it was stated that AT&T discovered that the use of social networking sites at work had helped improved employees' productivity in the workplace by 65 percent [11]. Part of the advantage of introducing technology effectively in the workplace is that employees become more motivated, work processes and managerial processes in the workplace become better organised and structured [12]. Technology usage always lead to handling large volumes of work at an increased speed, while using less resources [13].

Furthermore, empirical studies conducted to assess the influence of technologies in different areas of human endeavour such as social sciences and the sciences [14], medical sciences[17], engineering (Kühnle, 2010), and in business practices [15]. However, most of the studies in the area of business focused on the influence of technological usage on employee productivity [16] or organisational productivity [18-20] without accounting for its effect on employees' behaviour at work. It is worthy of note that employees' behaviour is a crucial factor for any organization to optimise the advantages inherent in the usage of any technology. Therefore, monitoring of employees' usage of technologies is now generating debate on how to strike a balance between employer's security rights and employee's privacy issues [21].

Nigeria business environment today depends on technological innovation and the impact of its usage on employee behaviour as well as organization's business decision making process are important research area for organisational behaviour scholars, since, employees will drive any technological innovation in any organization. Therefore, this study provides systematic review of empirical studies on the influence of technology usage on employee behaviour while highlighting the controversies and complications inherent in the relationship. Implications for the Nigerian business environment were provided based on findings from the review.

2. Review of Relevant Literatures
2.1 Conceptual Framework
Technology usage is all about uptake and continuance [22] while employee behaviour is the manner in which employees react to certain situations at the workplace [23]. It is also interesting to note that the behaviour of employees is shaped and nurtured by both the culture of the organisation they work and their own culture [24]. Every organizational culture emphasised that employees must be well behaved so that they can remain in the organization and earn promotion [24].

The conceptual framework in figure 1 shows that when a new technology is deployed for a task or an activity, that new technology may influence employee's performance if the technology is adopted (employee behaviour) which could improve the productivity of the organisation justifying management investment in the technology.

Conversely, if an employee rejects the new technology (employee behaviour) they will either refuse or abuse it resulting in shortfall in management's expectations. The introduction of new technology creates a perception of job insecurity in the mind of the employees due to the changes that will be made to their job description which could result in their redundancy or retrenchment [25]. The introduction of robotics and artificial intelligence, for example, is enough to cause psychological trauma for employees that work in an organisation.
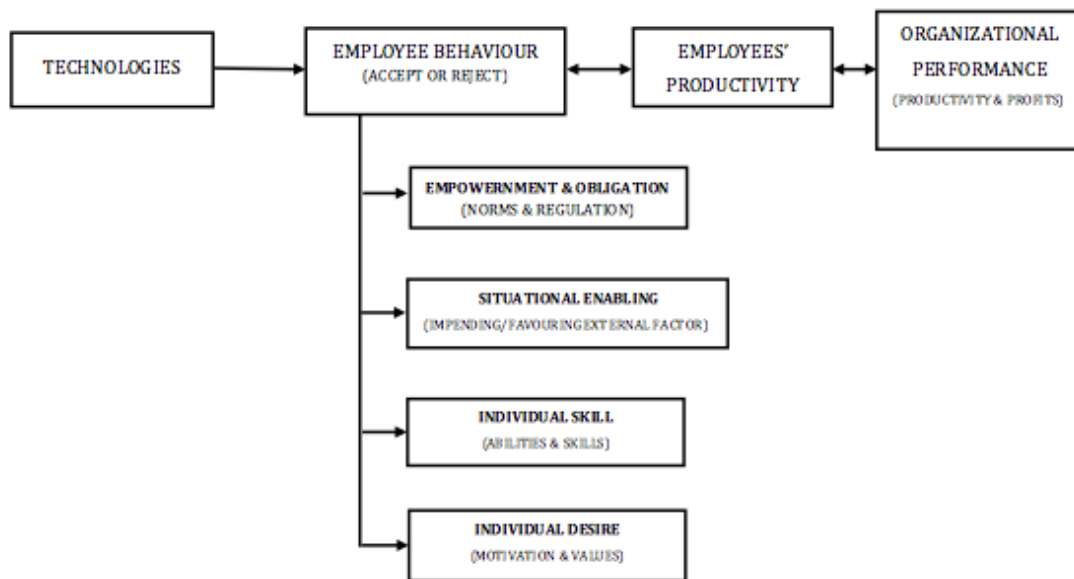

Figure 1: Conceptual Framework
Source: Adapted from [26]

2.2 Theoretical Background
This paper reviewed four related theories namely the theory of planned behaviour (TPB), the theory of reasoned action (TRA), the technology usage model (TUM), the unified theory of acceptance and use of technology 2 (UTAUT2) and the technology acceptance model (TAM). Each of these theories or models is described briefly below.

2.2.1 The Technology Usage Model (TUM). Nakarin Pinpathomrat propounded the technology usage model in 2015 at a conference tagged International Conference on Science and Technology (TICST). The model was fallout of three other theories of technology, which are: technology acceptance model (TAM), the adaptation level theory (ALT) and cognitive dissonance theory (CDT). It was in this theory that [27] explained that technology is used in two ways. These two forms, as earlier mentioned, are uptake and continuance. The uptake explains the first-time experience of the user of Information Technology (IT), which is expressed as t_0 to t_1. On the other hand, the continuance was explained as the period the technology is being or was used, which is expressed as t_1 to t_2. The major reason for this approach was to examine the explanatory power of the model of technology, assess the factors that affect the uptake and continuance of technology. From the study of the technology usage model, it was opined that the use of technology had a moderating explanatory power over the uptake and continuance of technology.

It was concluded that the expectations of the technology users were major elements affecting the uptake and continuance of technology usage in the two time periods expressed earlier (Pinpathomrat, 2015).

2.2.2 Theory of Planned Behaviour (TPB). The theory of planned behaviour (TPB) is an advancement of the theory of reasoned action (TRA) based on the limitations that were identified with respect to the behaviour of people studied. The theory of planned behaviour introduced a new element, known as the perceived behavioural control (PBC) [28]. Perceived behavioural control has to do with determining whether an individual possess the ability to behave in a certain way [29]. The theory of planned behaviour is a model that forecasts an intentional behaviour because it is believed that behaviour may be planned or deliberates [30]. According to the model, the best predictor of behaviour is the behavioural intention. The elements that predict the behavioural intention of an individual are attitude, subjective norms and the perceived behavioural control. Furthermore, there are three beliefs that guide the behavioural intention of an individual, which include: behavioural beliefs, normative beliefs and control beliefs [31]. The behavioural beliefs have to do with the outcome of behaviour and the evaluation of behaviour. On the other hand, normative beliefs have to do with perceived behavioural expectations from important referral persons around the person, while control beliefs have to do with beliefs on certain factors present that can facilitate the performance of behaviour and the power behind these factors.

2.2.3 Extended Technology Acceptance Model (TAM2). The extended technology acceptance model (TAM2) described the intention of users of IT and their behaviour towards the use of IT as propagated by Davis, Bagozzi, and Warshaw [32] and extended Chen, *et al*. [33]. Two very vital elements were identified in the model, which were perceived ease of use and perceived usefulness to predict users' behaviour. Perceived usefulness has to do with the extent that a user thinks that an IT will improve his or her performance in a workplace, while perceived ease of use has to do with the extent to which a user thinks that using an IT will require little or no effort. It was believed that the attitude of a user will likely influence the behavioural intention to use IT as it in turn influence the actual behaviour to use IT. From the model, it was assumed that perceived usefulness has a straight impact on behavioural intention, aside its indirect impact through users' attitude [32]. Other researches have shown a strong relationship between perceived ease of use and perceived usefulness. Also, researches have shown that perceived usefulness, over time, has been the major predictor of a user's attitude in the use of IT (Chen, *et al*., 2017). There is still a controversy on whether attitude should be part of the model or not as some researcher had remove attitude completely from technological models.

2.2.4 Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). UTAUT2 is the extended version of the UTAUT model looking at it from a consumer point of view, while the first version of the UTAUT model was the extended version TAM2 from a worker's point of view. It was introduced by Venkatesh, Morris, Davis and Davis in 2003. The idea of the UTAUT was to examine the already existing technological acceptance models, to do an empirical comparison of eight technological models, to express the UTAUT model and validate the UTAUT model (Agboola, 2014). On the other hand, the UTAUT2 model was formulated as an extended version of the main UTAUT model. The UTAUT2 model presented three new concepts, which are habit, price value and hedonic motivation. Other moderating variables such as age, gender and experience were assumed to moderate the effect of the three new concepts and others on technology usage and behavioural intention. Another study supported the introduction of the new concepts, which had further improved the explanation of the variance that the three concepts had on technology usage and behavioural intention [34]. The authors posited that with the three concepts, one can create a strategy of market segmentation to arouse consumers to use technology. In the context of this paper, consumers, which are users can be seen as workers or employees who actually use the technology in the workplace. Finally, the authors suggested that the producers of technology should make the designs of technologies much better and categorise their technologies based on the demographic nature of the users at different stages of use.

2.3 Empirical Background

The systemic review of literature relating to technology usage, job and organizational performance revealed confirmed that the introduction of technology influence both enhances both job and organizational performance but adversely affect employee behaviour.

In fact, two studies found that successful implementation of technology were adversely affected by the attitude of employee towards it. Hence, the controversy that how could technological usage boost job and organizational performance without appreciable improvement in employee behaviour.

Year	Country	Author(s)	Objective(s)	Methods	Findings
2018	Nigeria	Adeniji, C., Adeyeye, O., Iyiola, O., Olokundun, M., Borishade, T., Falola, H., & Salau, O.	Data on impact of technological change on employees' cognitive attitude and organizational performance	Primary data 600 questionnaires to 3 tiers management employees of 3 manufacturing industry in Lagos ANOVA, Hierarchical regression	technological change significantly increase employees' cognitive attitude and organizational performance
2015	Nigeria	Onu, C.A., Olabode, I. O & Fakunkunmoju, S.K.	Effect of Information Technology Investment on Organisational Productivity and Growth of Small and Medium Scale Enterprises in Developing Countries	Primary data 100 questionnaires Frequency tables, percentages and simple regression	Technological usage boost productivity
2014	South Africa	Binuyo, A. O. & Aregbeshole, R.A..	Effect of ICT investment and cost efficiency on bank performance	Secondary data sourced from 4 big banks in S/Africa (Absa, FirstRand, NedBank & standard bank Ordinary Least Square and Dynamic Panel Regression	ICT investment and ICT cost efficiency improve bank performance
2013	USA	Moqbel, M., Nevo, S. & Kock, N.	Organization member use of social networking sites and job performance	Primary data Questionnaires to 193 employees Variable-based structural equations modelling	Social network usage significant increase job performance
2011	Nigeria	Dauda & Akingbade	Effect of technological change on employee performance	Primary data 1256 questionnaires to 30 manufacturing industries in Lagos (beverages, textile, steel, cement and chemical industries) ANOVA	Technological change significantly raise employee skills and performance
2008	Nigeria	Osabuohien, E.	Assessed anticipated role of ICT and operation of selected banks in Nigeria	Primary data 3 commercial banks in Lagos 180 questionnaires	ICT raise the speed of bank operations, productivity and profitability
2003	Nigeria	Agboola, A. A.	Assess attitude of workers on the application of IT in banking industry	Primary data 6 commercial banks in Lagos 60 questionnaires Descriptive; frequency & percentage	Usage of ICT complicate work and alter the skills required
2003	Nigeria	Ehikhanenor, F. A.	Assess application of ICT in Nigeria banks	Primary data 56 banks in Lagos	54.6% of them achieve successful implementation of ICT

Source: Author's Review (2019)

3 Controversies, Complications and Implications of Technology Usage in the Nigerian Business Environment

3.1 Controversies of Technology Usage in the Nigerian Business Environment

Despite the advantages of technology usage within and among organisations in the Nigerian business environment, there is one major controversy militating against the use of technology in the workplace among employees, and in turn influences employee behaviours to work, which is known as employee monitoring. This is a major point of conflict between employees and management [35]. It is worthy to note, even though the advent of technology is not intended to replace workers, those without basic technological skills and are unwilling to acquire it will soon be replaced [36]. The question is how can balance be established when an employee is tech savvy and uses it more for personal gains instead of the organisation?

A scenario was illustrated by Perchstone and Graeys [37] as quoted below:

"It was about noon. Samuel had concluded some routine workplace assignments but had a few more to attend to. He heaved a sigh, and thought- 'I'll resume to those, after this well-deserved time-out'. Yes, time-out to look up the social media messages piling up, and the intermittent flashing notifications which never ceased to teasingly announce their arrival (into his smartphone). He was soon engrossed with this very absorbing act...far too busy to notice his Line Manager standing a few steps away, making a hand gesture in an apparent bid to get Samuel's attention. This continued for almost a minute, until he (the Line Manager) had to call out sharply, visibly irritated. Samuel was visibly startled. He had been animatedly responding to a thread message on a recent Facebook posting. The Line Manager left angry, only to return issuing Samuel with a query. Later that week, the office churned out a new policy on the use of social media in the workplace" (para. 1).

The above scenario illustrates what typically happens in the workplace and the reason why most organisations monitor their employees. The Nigerian business environment is a very dynamic one and organizations are poised to ensure continuous productivity and performance to maintain competitive advantage over other organisations. One major way they do this, as earlier mentioned, is to have a close monitoring of every employee within the organization from when they resume to when they close for the day and assess their contribution to the organization each day, week and month. Some other employers go as far as knowing their employees' family and the relationships they keep. This is gradually becoming typical of the Nigerian business environment as advanced technologies are employed to gather all the required information all in the name of knowing their employees.

Whereas, it has been argued that the data gathered from employees is way too much and sensitive that it has encroached into the privacy of employees [38]. Another question that bothers one is that, what is being done to protect employees after gathering all their required data? In some indications, there are justified reasons for using technology to monitor employees such as to alleviate the misuse of resources, to ensure proper usage of organizational time, to avoid gossip, to monitor the illicit visit of inappropriate webpages and to protect both employee and customers' profile or information from cybercrimes[39].

Yerby [40] conducted a study which tressed the need to monitor employees in the workplace. It was made clear in the study that aside the fact that organisations desire increases in productivity, there are other challenges, such as, mis-use of email clients, internet and potential legal liability, which gives reason to employee monitoring. It was further supported that the major reason for employee monitoring in the Nigerian business environment has to do with attack of viruses due to employees visiting pornographic sites and online gaming sites [41]. This was earlier mentioned that there was a study carried out for two years, which showed that the word "sex" was the number one most searched word on the internet, while the word "porn" was the fourth most searched word on the internet.

Other words that were mostly searched were, "nude", "erotic", "playboy" and "xxx", which were also among the top twenty most searched words on the internet [42]. The authors also posited that 70% of these searches occurred during working days (Mondays to Fridays) and during working hours (8 am to 5 pm) leading organisations to discipline such employees found using the internet for that purpose.

Employee monitoring within organisations or at workplace is made possible through several software and hardware which are easy to use but costly depending on its sophistications and specifications. The extent of employee monitoring in an organisation will determine the hardware or software to be deployed, which ranges from technological solutions for monitoring website visit, social media chats, monitoring of email conversations and many others [40]. These technological solutions can provide daily reports of technology or internet usage and more sophisticated ones sends alerts once employees visit unapproved websites and monitor conversations via the phone. In this case, some organisations create the awareness that phone calls are being monitored for better feedback purposes.

In more advanced and developed countries, the government have set policies, rules and regulations for organisations to protect sensitive information going in and out. According to Yerby [40], it was opined that there is no law against monitoring employees since organisations had raised evidences as reasons to monitor employees. In the Nigerian business environment, it has been observed that depending on the organisation, the legal part of employee monitoring varies depending on the relationship the organisation has with the labour union and the nature of the organisation in terms of what it does.

The subject of employee monitoring raises some ethical issues, such as privacy rights on the part of employees. What an organisation may consider unethical may be ethical for the employee and vice versa. Technology solutions deployed for employee monitoring do not have sensors to determine when an employee is feeling ill and perhaps needs rest, thereby giving a wrong or incomplete data about the employee, which may lead to suspension because it would be assumed that the employee was taking rest instead of working. This is where there must be a balance. There are other cases where employees feel brain or mind fatigue due to information overloading and they need to just relax with an online game or social media chat to ease off the stress. When organisations are strict and rely on their technology for employee monitoring, then they are likely to cause more harm than good to the entire organisation. On the other hand, while it seems that there are no provisions from the law in Nigeria to govern employee monitoring in the workplace, there are constitutional provisions for right protections [35]. The Nigerian constitution of 1999 as amended states *"...the right to privacy of citizens, their homes, correspondence, telephone conversations and telegraphic communications is hereby guaranteed and protected"*. Based on this premise, it seems the law is in favour of employees, but that is when the organisation is found misusing their employees' information.

It is therefore important to note that employee monitoring in various aspects could decrease the morale of employees to work and the sense of trust that ought to be established between the employee and organisation could be eroded adversely affecting his behaviour and the attainment of organisational goals [43].

3.2 Complications of Technology Usage in the Nigerian Business Environment
Whether we like it or not, from what we are experiencing around the world, technology is a major factor that is determining how things are done in any environment. Technology serves and plays a major role in every works of life ranging from government, military, manufacturing, education, entertainment, commerce, banking and any entire industry at large [44]. Despite the role technology plays in the Nigerian business environment, there are difficulties it poses and negative effects it has already on the human behaviour. As earlier explained, technology usage has caused major ethical issues resulting to employee behavioural feedbacks.

There are three ethical issues of concern, which are access rights, personal privacy and harmful actions [44].Unknowing to several people is the fact that they grant many hardware and software application access right to their personal information during installation of some software. Access rights simply means giving a user or application the permission to read, store, write, transfer and erase files or information on a device [45]. Before now, applications, when installed, automatically have access to personal stuffs on devices, but now, the way it goes is that, when applications are installed, they further ask for permissions to grant them access rights. However, in most cases when access is not fully granted usability of the software of device is not optimised. Now that international commerce and online shopping has become very popular on the internet, access right has moved from low priority to high priority for most organisations [44]. The issue of access right has led to lots of cybercrimes committed by hackers thereby creating lots of illegal access rights [46]. With this situation, employees within organisations have put up some sort of negative behaviour towards the use of devices and applications by offering fake and untrue personal information [47].

The second ethical issue is personal privacy. Total dependence on the use of technology has resulted to the high transfer and exchange of large data and information on a large scale among people or organisations around the world from one location to another resulting to big data [48]. It has been made clear that since large data are transferred around the world, there is tendency that there will be disclosure or leakage of personal information, thereby resulting to violation of the privacy of individuals or groups around the world [44]. This becomes a very important ethical issue since sensitive information are involved. This is another reason why employee behaviours are negative towards the use of technology at the workplace in the Nigerian business environment.

Over the years, there had been several cyber-attacks that had resulted to loss and destruction of vital information with respect to various individuals [49]. Various governments are investing a lot in dealing with cyber wars, where a simple and small device can be used as a weapon to cause damages that the entire world will feel. The virtual space is the battlefield and there are moves to intentionally destroy and modify files or programmes, which could lead to loss of information [44]. With such awareness, individuals and employees are always showing fear leading to negative behaviours towards the use of technology in the workplace. These harmful actions mostly come in the form of malicious codes usually through emails and employees are not always aware of such strategies, for example, phishing, password attack, birthday attack, malware attack and so on [50]. When organization suffers these cyber-attacks the private and sensitive information of the employee is exposed. Thus, organisation and the employee should constantly be sensitized of these trends; Based on the above scenarios, employee behaviour towards the usage of some technologies in the workplace becomes complicated and a very critical issue or challenge that an organisation must need to deal with especially in a very volatile business environment such as the Nigerian business environment. Other ethical issues regarding the use of technology that may affect the behaviour of employees in the workplace include plagiarism, piracy, hacking, files sharing, education [44].

According to Jegede and Olowookere [51], there had been quite some complications experienced with the use of technology that has caused trauma to users in the Nigerian business environment which include areas like e-business where money and products are usually transferred through the internet. Based on the study carried by the authors, it asserted that e-commerce is the most prominent platform that scammers or "opportunists" take advantage of to use the internet for their illicit benefits. In view of the related threats, there had been cases where intrusion of privacy was associated with local institutions like commercial/deposit banks, telecommunication companies and e-commerce firms, thus, establishing the basis of negative exposures [52]. Other complications that were identified relating to the use of technology in the workplace within the Nigerian business environment are issues regarding health of the employees, job insecurity and pressure on users of technology [44].

3.3 Implications of Technology Usage in the Nigerian Business Environment
The permeability of the use of internet have been widely study in research [37, 451-52,53-56].

Hence, how do these controversies and complications affect employee behaviour and use of technology in the Nigerian business environment as well as its implications? Organisations around the world have different policies that govern the use of technology at the workplace. Ironically, these policies are not at the reach of employees, which makes employers continue to monitor their employees [37]. Use of technology policies are one of the commonest organisational policies that govern the manner in which employees use an organisation's technology in terms of what is expected of them and what they should expect, such as privacy issues, ethical issues and so on in developed countries [44].

Despite the fact that the use of technology may allow for fraud and other forms of cyber security breaches, it also results in generating threats to personal (employee) details or information and banking details too, while using the internet to transact, which negatively affect employee behaviours to use technology in the work place. Securing the internet from cyberwars and hackers is not cheap especially for private individuals. Currently, it is very expensive to manufacture goods and services as there are many challenges in the Nigerian business environment ranging from unstable power supply, bad roads, obsolete infrastructures and economic instability [57-58]. Therefore, there is no one organisation that may be facing these challenges within the Nigerian business environment that would want to spend so much on the state-of-the-art technological software and hardware to fight scammers and hackers, which on the other hand leaves their employees and customers at large to take precautions by themselves. Instead, organisations would prefer to go for insurance policies that will cover them in the event of loss of data or information [59]. Operating a business in Nigeria comes with a lot of cost in production of goods and services, which affects the interest to purchase software to tackle and enhance cyber security of their online services or even take an insurance policy to cover in the event of loss of employee data or information. This can sufficiently affect the behaviour of employees towards technology usage in their organisations.

4. Conclusion and Recommendations

Technology has played a vital role in most facets of organizations in the Nigerian business environment, which has contributed to the behaviour of employees as well as global interactions among business subsidiaries, customers and all stakeholders. Despite all the benefits and advantages of technology, there are a lot of negative experiences in the Nigerian business environment resulting to several complications and controversies, which brings about the implications discussed. The law governing the Nigerian business environment is clear on the right to privacy for employees in the workplace but with a few exceptions. The law may have permitted employers to monitor employees, but they must be duly informed, while their personal information and data must not in any way be misused. If this is properly implemented, a positive behaviour from employees towards the use of technology could be achieved, thereby improving their productivity and performance of the organisation at large.

Every employee has a right to privacy, and this is essential (Perchstone & Graeys, 2018). This means that every employee needs their own personal space to communicate and share information as they will. No matter the rate of advancement of technology being experienced, it has not taken the right of privacy from employees. Even if employers want to monitor the employees' usage of technology, it has not changed the fundamental rights of privacy that the employees have. It is therefore needed that an "acceptable use policy' be crafted to tackle the issue of monitoring employees and the issue of privacy, which should not only be drafted by an IT department alone, but getting contributions from other departments in an organisation. Other departments such as human resource, legal, finance and so on need to come together to determine what activities, how, where and when should employees should be monitored, also, what level of data or information should be available in reports and who should monitor.

When this is done and it is in place, employees would be motivated having known their extent of privacy rights and to what extent they are being monitored, thereby not prompting a negative behaviour to work. It is therefore recommended that organisations should review their policies from time to time as there are constant and sporadic changes experienced in and use of technology. Policies in the Nigerian business environment should be well explicit and understandable for all employees within an organisation to avoid misinterpretation, misrepresentation and to make it consistent with the best practices of the world business environment. The sensitiveness of data and information with respect to employees, customers and the organisation cannot be overemphasized and overlooked. Therefore, the procurement of hardware and software to guide against hackers and scammers should not be considered expensive because loosing those data and information into the wrong hands would cause an organisation much more than the cost of procurement.

Acknowledgements

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