UNDERSTANDING THE RELATIONSHIP BETWEEN TECHNOSTRESS, JOB DESIGN AND EMPLOYEE ENGAGEMENT FROM THE NIGERIAN BANKING EMPLOYEES PERSPECTIVE

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Abstract. *No doubt, information technology has provided the banking sectors with the capability to provide speedy and reliable banking services. However, ICT is believed to be a two-edged sword which offers tremendous benefits to the organization and also responsible for inducing stress amongst employees. This type of stress is referred to as technostress. Technology has created a knowledge gap for employees because of task reengineering, increased workload, multi-tasking, work-family conflict. Researches have demonstrated that technostress can affect an employee's performances, job satisfaction, and organizational commitment. However, the relationship between technostress job design and employee engagement has not been examined. Using the job characteristic model and social exchange theory this present study has examined the relationship between technostress, job design, and employee engagement. Data was collected from 319 individuals working in the Nigerian commercial banks and data was analyzed using smart PLS. The result indicated that job design has a significant influence on technostress, and technostress has a significant influence on employee engagement. Contrary to our proposed negative relationship based on job design, employee engagement and stress literature in which negative relationship is expected between job design and stress, stress and engagement, the result of this study revealed a positive relationship between job design and technostress is an indication that job design alone may not be able to moderate the effect of technostress if technological elements of job design is not addressed. While technostress does not necessarily reduce employee engagement but a moderate level of stress can serve as a motivator while extreme stress can demotivate employee. Additionally, the result of the study shows a positive relationship between job design and employee engagement and technostress mediates the relationship between job design and employee engagement.*

Keywords: *Technostress; Job Design; Employee Engagement; Information Technology; Banks.*

Introduction

Today's business atmosphere is incredibly dynamic and has undergone fast changes as a result of technological innovation. Particularly the banking industry of the twenty-first century operates in an exceedingly complicated and competitive atmosphere characterized by these ever-changing conditions and extremely unpredictable financial climate. The application of technological innovation in the services and operations of banks has become an issue of fundamental importance and prerequisite for global competitiveness (Oluwagbemi, Abah & Achimugu, 2011). Despite the advantages of using technology, scholars believed that technology is a double-edged sword because it is responsible for inducing stress in the lives of its users (Tarafdar, Bolman Pullins & Ragu-Nathan, 2014). This kind of stress is referred to as technostress a kind of stress that is caused as a result of the inability of employees to cope with the use of technology in a healthy manner (Ayyagari, Grover & Purvis, 2011). A growing body of organizational researches has been concerned about identifying precursors and effects of technostress on employees and organizations. Already published studies have shown that technostress can affect employees job satisfaction, performance, organizational commitment and employee intention to extend the use of ICTs. (Ayyagari, Grover & Purvis, 2011; Tarafdar et al., 2014; Ahmad, Amin & Ismail, 2009).

Nevertheless, numerous researches have investigated technostress in several contexts, some studies (Tarafdar et al., 2014; Fieseler et al., 2014; Weiner Maier, Laumer & Weitzel, 2014; Kumar et al., 2013; Rajput et al., 201;) have examined the impact of technostress on professionals (supply chain managers, IT professionals, sales, etc.) Telemedicine (Yan, Lee & Vogel, 2013) and on Smartphones. there is a limited study on technostress in Nigeria, particularly in the commercial banking sector. Likewise, previous researches have mainly focused on a few causes and effect of technostress, nevertheless, they have neglected the effect of job design on the perception of technostress. The nature of Job design and characteristic can determine employees' stress level (Jacobs et al., 2014), thus, it is vital to examine how job design can collectively influence technostress amongst banking employees in Nigeria. Giving the competitive nature of the banking industry in Nigeria, new technology-based products and services are constantly created. Furthermore, the effect of technostress on employees' engagement has not been examined, past researches have shown that stress can affect an employee's engagement. This gap limited our understanding of the causes and effect of technostress on employees and organizations. Understanding the relationship between job design employee engagement and technostress would provide a more practical intervention and strategies to alleviate the impact of technostress on employee engagement. To fill these gaps this study has integrated job design and employee engagement into the technostress research model. Job design represents organizational-based factors that influence technostress and employee engagement. Next we present our literature review, structural model and hypothesis, sample, methods and results, and lastly, conclude with theoretical and practical implications of our findings.
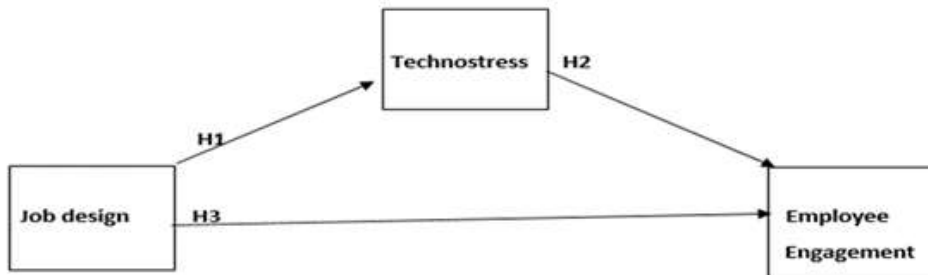
Figure 1. Research model

Literature review

Technostress

The terminology technostress was first used by Brod, (1984, p.16). He defined technostress "a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner". Accordingly, Arnetz and Wiholm (1997) referred to technostress as "a state of arousal" prominent in employees who depend on computers for their routine task. Although prior researches on stress concentrated on the physical consequences technostress in organizations, such as fatigue, irritability headache, and restlessness (Arnett & Wiholm, 1997). While the current research has concentrated on the psychological states that create technostress by differentiating between the causes of stress (stressors) and the outcome of stress (strain) (Suh & Lee, 2017). The technostress model is composed of the five technostress creating conditions. Foremost, is "Techno-overload" "that portrays circumstances whereby utilization of ICTs increases employee's workload and compel them to work faster (Suh & Lee, 2017). Attempting to accomplish additional in less time, and encountering pressure and nervousness. Techno-overload can be seen in multi-tasking, especially in the banking job, were employees utilizes a variety of banking application simultaneously.

Second is "Techno-invasion" that depicts circumstances in which employees can presumably be reached anywhere and no matter the time and feel they must be continually connected (Tarafdar et al 2015) especially in baking were employees email official are connected to employees' mobile phones. It also connotes a situation in which working hours spills into an individual personal time because of persistent availableness, which results in work-family conflict (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2011).

The third is "Techno-complexity", a complex system is a system with high functionalities, and the higher the functionalities, the higher the level of technostress. Techno-complexity portrays circumstances whereby ICT sophistication compels banking employees to invest time and energy in learning and re-learning how to utilize new banking applications. Employees may perceive the assortment of functions and application complex and be exhausting to grasp, and therefore feel stressed (Tarafdar et al., 2011). The fourth is "Techno-insecurity" that rises in circumstances wherever workers feel destabilized by the fear of losing their jobs to people who have a superior comprehension of latest Technology. Techno-insecurity is (Tarafdar et al., 2011). Last of

all is "Techno-uncertainty" that alludes to settings whereby constant changes and upgrades of Information technology and applications do not permit employees or users to accumulate knowledge and expertise for a particular system or application. They consider this unsettling because their skills and knowledge will become obsolete because of the technological pace of change result in frustration and perceived inability to cope thereby resulting in fear of been replaced (Tarafdar et al., 2011).

Job design and technostress

Job design in the context of this study is based on the Job Characteristics Model (JCM) by Hackman and Oldham (1980) which propounded the five essential job characteristics that motivate employees. These characteristics include; firstly, task variety, which is described as the degree to which a task involves a variety of skills to be accomplished or the extent expected an individual perform multiple functions. For instance, a bank teller job requires varieties of skills, because they provide banking services such as receipt and payment of cash, selling bank drafts, traveler's checks, attending customers inquires, booking of investments and loans. The second is task identity, is the extent to which an individual can start and complete a task individually, for example resolving a customer's complaint. Third is task significance, it the level of impact a job has on the lives of people. Employees may find fulfillment from their jobs when it changes or improves the wellbeing of others e.g. when a bank offer approves loans for small business and the recipients are able to grow their businesses and improve their living standard. Fourth is task autonomy, is the degree to which an employee can make decisions on how they want to perform their task. Task autonomy is often very low in banking jobs because various transactions need to go through oversights to prevent fraud and financial losses. Lastly is task feedback, it is the extent to extent to which an employee receives accurate and timely information regarding their task performance.

Furthering the thought on the relationship between job design and technostress, these five basic components of job design are expected to elevate positive attitudinal and behavioral outcomes. An employee with a low level of any of the above-mentioned job design characteristic is more likely to experience misfit between them and their job which can lead to technostress, thus affecting employee job satisfaction vice versa. For instance, the Humphrey et al. (2007) meta-investigation demonstrated that job characteristics (e.g., autonomy, working conditions, feedback, task identity,) were associated negatively and in a direct manner to the results of stress and fatigue. These outcomes propose that working under poor conditions and on job low on the motivational attributes can antagonistically affect worker psychological well-being. (Alam Sageer, 2012). In other words, lack of autonomy, skill variety, task significance, task identity, task feedback can amplify the perception of technostress. Giving the nature and structure of banking task, there is limited, task identity, task autonomy, were a single employee is not allowed to initiate and complete without going through the process of verification by various line officers through technology interdependency. thus, the sense of task identity is not present. This situation may amplify the perception of technostress amongst employees. Therefore, we proposed that following hypothesis:

H1 Job design is negatively associated with technostress

Technostress and employee engagement

The variable employee engagement was at first defined by Kahn (1990) "the harnessing of organizational members 'selves to their work roles" (p.694). What is central in Kahn's (1990) viewpoint is the measure of vitality and sense of commitment that employees have for work, and the manner in which they are heterogeneously actuated, amid such a setting, employee who is engaged is vigorously and viably associated with their work, as they are physical, psychologically and sincerely involved (Tims, Bakker & Derks, 2013). On the other hand, disengaged employees are emotionally separated with work and associates and even physically less involved" (Truss et al., 2013). In this present study employee engagement is based on Saks (2006) components of employee engagement. Accordingly, Saks (2006) divided employee engagement into job engagement and organizations engagement. Furthering the thought on the relationship between technostress and employee engagement Researches Kahn (1990) proposed emotional, physical and psychological resources are an essential precondition for engaging at work. This implies that is those physical and emotional resources can be depleted due to technostress, that means employees may become disengaged. Contrarily, disengaged employees detach themselves from work physically and withdraw emotionally and cognitively and resulting week role performance and effortless, robotic task performance behaviors (Ongori & Agolla, 2008). Therefore, we argue that technostress is theoretically related to employee engagement. Stress literature commonly proposed a negative relationship between work-related stress and employee engagement (Velnampy & Aravinthan, 2013) which imply an excessive level of technostress decreases employee engagement. Therefore, we hypothesized as follows:

H2 Technostress is negatively related to employee engagement

Job design and employee engagement

According to Michael Armstrong (2003), "Job Design is the process of deciding on the contents of a job in terms of its duties and responsibilities, on the methods to be used in carrying out the job, in terms of techniques, systems and procedures, and on the relationships, that should exist between the job holder and his superior subordinates and colleagues. Job design in this present study is conceptualized based on the Job Characteristics Model (JCM) proposed by Hackman and Oldham (1980). JCM Posit that a job should contain the five job characteristics which include task feedback, job autonomy, skill variety, task identity, task significance and skill variety. Supporting the thought on the relationship between job design and employee engagement Prominent scholars of employee engagement literature has emphasized the role of job design in promoting employee engagement. For instance, Kahn's theory of engagement (1990) is derived from Hackman and Oldham's theory (1980) that characteristics of jobs affect an employee's attitudes and behaviors. Kahn (1990) argued that the nature of job design precondition for the extent to which employees would engage with their work. In associate anthropology study, he found that once individuals were doing work that was difficult and varied, they were a lot of probably to be engaged (Shantz, Alfes, Truss & Soane, 2013). Similarly, Bakker and Demerouti's (2007) job-demands-resources (JDR) model additionally highlights the importance of job design in creating engagement. Predominantly, the model argued that organizational, physical and social facets of a job may be associated with engagement. This because jobs design can result of the

availability of job resources that can buffer excessive work demands, thereby enhancing the achievement of organizational goals, and encouraging personal development and learning (Bakker & Demerouti 2007). The relationship between job design and employee engagement is supported by the social exchange theory. According to the social exchange theory, the relationship between an organization is based on the exchange rules (Shantz et al., 2013). An organization can only get what it gives, that is to say, when a job is enriched with job autonomy, task feedback skill variety, task significance and task identity, employees will reciprocate in form of job and organizational engagement. Therefore, our third hypothesis is as follows;

H3 Job design is positively related to employee engagement

The mediating effect of Technostress on Job design and employee engagement

In other, for scholars to test for mediating the relationship between independent and dependent variables, it requires three criteria (Alias, Noor & Hassan, 2014). Firstly, there ought to be a direct association between the independent variable and the dependent variable, secondly a directed association between the independent variable and the mediating variable and thirdly a direct association between the mediating variable and the dependent variables (Alias, Noor and Hassan, 2014). Drawing from the first criteria, it has been established that job design is positively related to employee engagement, the meta-analysis by Humphrey et al. (2007) and a study by Saks (2006) both found a positive relationship between the five facet of job design, Job autonomy, task feedback, task significance, skill variety and task identity and employee engagement. More recently, the study by Shantz, Alfes, Truss and Soane (2013) revealed that employees whose jobs offer high levels of task variety, autonomy, task feedback significance are more likely to be highly engaged. Also considering the second criteria, on the relationship between technostress and employee engagement, a study by Alarcon and Edwards (2011) engaged employees generally gain sufficient job resources. Abundant resources can reduce stress brought by job demands, which is negatively related to job satisfaction. Lastly based on the third criteria, on the relationship between job design and technostress, recent studies by Suh and Lee (2017) revealed that job characteristic jointly induces technostress. Thus, the fourth hypothesis is formulated as follows:

H4. The relationship between job design and employee engagement is mediated by technostress

Methods

Measures

This study adopted existing validated scales. All items were measured on a five-point Likert scales, that ranges from "strongly disagree to strongly agree". The independent variable in this study is job design (skill variety, task identity, task significance, task feedback and job autonomy) was measured by 15 items adapted from Pee and Lee (2015) as unidimensional. To measure the mediating variable technostress, three out of the five dimensions was selected (techno-overload, techno-complexity and techno-invasion) and was measured by 14 items adapted from Tarafdar, Pullins and Ragu-Nathan (2014) as unidimensional. Lastly, the dependent variable employee engagement

was measured by 11 items adapted from Saks (2006) measuring job engagement and organizational engagement. All dimension was combined and measured as unidimensional to provide the greatest basis for theory and construct validation test. (Smith, McCarthy & Zapolski, 2009) Likewise, it increases the precision of the understanding of the phenomenon of technostress and its relationship with Job design and employee engagement. Smart PLS 3 was utilized for data analysis because of its ability to measure complex model.

Data collection

The data for this study was collected from 319 front desk employees working in Nigerian commercial banks. A self-administered questionnaire was used and data was collected within the space of 5 months. A total of 400 questionnaires was distributed only 338 questionnaires was retrieved and 19 questionnaires were removed because of the error of omission.

Result and analysis

Data were analyzed using the partial least square (PLS) technique of analysis (Hair et al., 2016) to test the research Model. PLS is a second-generation SEM technique that can be used to estimate loadings of indicators on the constructs and the casual connections between constructs in a complex model. Accordingly, in comparison with the SEM techniques, PLS can be used to measure small samples (Hair et al., 2016) which is the case in this study that is why PLS was considered.

Measures reliability and validity

Confirmatory Factor analysis (CFA) was used to examine the reliability and validity of the measures adopted from the literature. The result's given in Table 1. To examine the reliability of the measure, we utilized the inter-item consistency reliability of the Cronbach's alpha. the worth ranges from 0.847 to 0.872 which is above the specified threshold 0.7 suggested by Nunnally and Bernstein (1994). Furthermore, convergent validity that demonstrates the extent to which the multiple efforts to measure a related concept ought to be connected was conjointly examined. Hair et al. (2012), suggested that composite reliability, factor loading and average variance extracted should be utilized to examine the convergent validity. Composite reliability ranges between 899 to 918 that is on top of the counselled price of zero.7 by Hair et al. (2010). The loading for all the indicator exceeded the suggested value of 0.6 (Chin et al., 1997). the average variance extracted, that the overall quantity of variance among the indications ranges from 506 to 528 which within the specified threshold value of 0.5 by Hair et al. (2010). to boot, discriminant validity is examined by comparison the squared correlations between constructs and variance extracted constructs (Fornell & Larcker, 1981). As given in Table two, the square correlation for individual construct is smaller than the average variance extracted by the indicators measuring the construct, that indicates adequate discriminant validity.

Table 1. The Result of CFA for measure model

Construct	Item	Internal reliability Cronbach's alpha	Factor loading	Convergent validity composite reliability	Average Variance extracted
Employee engagement	EE-JOB_5	0.860	0.714	0.891	0.506
	EE-ORG_6		0.643		
	EE-ORG_7		0.763		
	EE-ORG_9		0.798		
	EE-OR_10		0.699		
	EE-OR_11		0.715		
	EE=ORG_8		0.694		
	EE_JOB_3		0.654		
Job Design	JD-JA_1	0.872	0.711	0.899	0.528
	JD-JA_2		0.750		
	JD-JA_3		0.687		
	JD-SV_2		0.742		
	JD-SV_3		0.710		
	JD-TI_1		0.788		
	JD-TI_2		0.663		
	JD-TI_3		0.752		
	TS_1	0.847	0.791	0.884	0.522
	TS_3		0.794		
	TS_4		0.659		
	TS_5		0.732		
	TS_6		0.639		
	TS_7		0.754		
	TS_9		0.673		

Note: A Composite reliability = (square of the summation of the factor loadings)/ {(square of the summation of the factor loadings) + (square of the summation of the error variances)} b Composite reliability = (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variances)}

Table 2. Discriminant validity of constructs

	Employee engagement	Job design	Technostress
Employee Engagement	0.712		
Job Design	0.725	0.726	
Technostress	0.542	0.516	0.723

Note: the figures highlighted represents the average variance extracted while the other entries represent the squared correlations.

Table 2 presents the result of the discriminant validity. We utilized the two test for discriminate validity. Firstly, the contrast of the item loadings with items Crosses loading and the comparison of average variance extract. Each item should load higher on its intended construct than on the lower construct (Hair et al., 2015). We found that all our items satisfied this conditions (see table 2 and 1) Secondly, constructs variance extracted or shared variance between the constructs and the items should be greater than the shared variance amongst the construct and other constructs. This was measured by equating the square root of the construct's average variance extracted (AVE) to its connection with other constructs. For each construct, result established that the square root of the AVE is significantly larger than its correlation with other constructs (see table 1). Thus discriminate validity is established.

PLS structural model

Model fit

Having established the discriminant and convergent validity of the constructs, we verified the overall structural model. Generally, our proposed model has a good fit for the data. The result is presented in Table 3.

Table 3. Model Fit indices

Fit Index	Study	Recommended value	Source
SRMR	0.9	≥ 0.10 or of 0.08	Hu and Bentler, 1999)
d_ULS	2.5	≥ 0.05	Dijkstra and Henseler (2016)
d_G1	0.1	> 0.05	Dijkstra and Henseler (2016)
d_G2	0.1	> 0.05	Dijkstra and Henseler (2016)
Chi-Square	2.294		
NFI	0.6	≥ 0.9	Dijkstra and Henseler (2016)

Table 3 showcases the model fit index. There are numerous tests of model fit. When conducting a model fits test, it is important to define the approximate model. The only approximate model fits measure by PLS path modelling is that the standard root of mean square residual (SRMR) and NFI The SRMR is represented the dissimilarities between the experiential correlation and the model inferred matrix. SRMR price of under zero.10 or of 0.08 is considered as a good fit (Hu & Bentler, 1999). In this present study, the SRMR value is 0.09 and NFI 0.5. Thus, the model fit has been established.

Structural Model Result

The overall structural model of the was measured by calculating the extent of variance explained by the independent variable and the altitudes of the strength of its paths and the extent of correspondence of each of our hypothesis to a specific structural model path. We used the R^2 to measure the model exploratory ability. Synonymous with the description of the regression analysis, the variation is anticipated to exceed 10% to qualify for an experimental study. The result confirmed that the independent variable explained above 20% variance. Has specified in table 5, employee engagement R^2= 0.564 and Technostress R^2=0.265 demonstrate that Job design explains a substantial sum of the variance in technostress and employee engagement. Thus, this result offers a support for H1, H2 and H3 (See table 4).

Table 4. Path coefficient Result

	Mean	STDEV	T-Value	P-Value
Job design-> Employee engagement	0.608	044	13,950	0.000
Job design -> Technostress	0.517	046	11,137	0.000
Technostress -> Employee engagement	233	049	4,700	0.000

Table 4 presents the synopsis of the path relationship in the model. The relationship between job design and employee engagement is highly significant, the mean value = 0.608 and t-value =13,950. Thus hypothesis 1 is supported. Additionally, there is a significant relationship between job design and technostress, the mean value is = 0.517 and t-value =11,137, therefore, providing support for hypothesis 2. Lastly, the relationship between technostress and employee engagement is significant, the mean score =233 and t-value= 4,700, hence hypothesis 3 is supported.

Table 5. Indirect effect

	Mean	STDEV	T-value	P-value
Job design-> technostress -> employee engagement	0.120	0.028	4,196	0.000

Table 5 present the result of the indirect effect. The mean score = 120 and the t-value = 4,196, thus mediating effect of technostress on job design and employee engagement is established.

Discussion

The major objective of the study is to examine the how job design (job autonomy, skill variety, task identity, task significance and task feedback) jointly influence banking employees' technostress and engagement and the influence of job design on employee engagement. Researches have shown that Poorly designed job can serve as a source of stress in itself and can influence employee engagement. Additionally, technostress can influence the level of employee engagement, while job design can also influence the level of employee engagement. The findings of the study are as follows.

Firstly, Job design (job autonomy, skill variety, task identity, task significance and task feedback) conjointly explained techno- stressors (sources of strain). Job design had positive significant by increasing technostress instead of reducing the effect of technostress as suggested by job design and stress literature. This result shows curvilinear relationship or inverted "U" between job design and technostress contrary to the dominant trend in the job design and job stress literature and posits a one-way directional relationship in which job design is negatively related to job stress. No doubt, job design is significantly related to technostress and can reduce the impact of technostress on employees. However, job design alone may not be able to mitigate the effect of technostress if the job context or hygiene factors (e.g. banking policies, pay salary, working hours, supervision, and interpersonal relationship) and technological aspect of a job are not addressed. Therefore, management needs to consider sociotechnical elements of job design when redesign task.

Secondly, the result shows that technostress has a strong influence on employee engagement. According to work stress and employee engagement literature, work stress is negatively related to employee engagement. The result of this study is contrary to the theorized relationship. The result reflected a positive relationship between technostress and employee engagement. This means the outcome of technostress or stress most not necessarily be negative. The presence of stress could serve as a motivating factor. This is supported by Yerkes-Dodson law proposes that the height of performance is attained when people experience a moderate level of work pressure. Similarly, Schmitt et al.

(2016), based on the activation theory, submit that time pressure and work engagement have a curvilinear relationship. This is also an indication that banking employees in Nigeria are exceedingly engaged or they are stressed-engaged employees. On the other hand, it can be said that because banking employees are exceedingly engaged they find it easy to cope technostress. The engaged employee often gains more job resources, which help them to overcome stress on the (Schaufeli & Bakker, 2004).

Thirdly, hypothesis 3 which proposes a positive relationship between job design and employee engagement is highly significant and supported, the mean value = 0.608 and t-value =13,950. This finding is consistent with the findings of previous studies on job design and employee. Past researches on engagement have shown that employees whose possess high task autonomy, task significance, task identity, task feedback and skill variety are more engaged (Shantz et al., 2013).

Practical implication

The first practical implication of this study is that organizations and management should note that despite all the advantages associated to the use of technology in workplaces, technology could induce stress in the lives of employees, which can affect performance. The first practical implication of the present study is the importance of Job design (task feedback, job autonomy task identity, skill variety and task significance in alleviating the impact of technostress on employees, however, the present findings may be of particular interest to practitioners given that we found a positive relationship between job design and technostress. The result shows that job design alone may not be able to mitigate the effect of technostress if the job context is or hygiene factors (e.g. banking policies, pay salary, working hours, supervision, interpersonal relationship) and socio-technological aspects (Task-technological interdependency, system failure and poor IT infrastructure) is not addressed. Thus, management and practitioners should always consider the socio-technical (social and technical) aspect of job design.
The second practical implications of this study are that management should make employee engagement one of its top priorities because employee engagement is related to various organizational outcomes. Employee engagement can assist employees to deal with stress brought about by excessive job demand. Even though we proposed a negative relationship between technostress and employee engagement in line with the proposition by stress and engagement literature, our result revealed a positive relationship between technostress and employee engagement contrary to the negative relationship posit by stress and engagement. It shows that the outcomes of technostress may not always be negative if employees are highly engaged. According to the Yerkes-Dodson law state that the height of performance is attained when people experience a moderate level of work pressure Nevertheless, a low and very high level of time pressure de-motivates workers from work (Schmitt et al., 2015). Likewise, job design is an essential element of ensuring employee engagement. Therefore, management should ensure that jobs are designed based on the five core job characteristics.

Implications for research

Our studies contribute to technostress studies in two essential ways, first we examine for the first time the job design as an antecedent of technostress combining the five job characteristics proposed by Hackman and Oldham into a single model, shows that autonomy, skill variety, task identity, task significance and task feedback are positively

related to technostress, unlike Suh nd Lee (2017) who utilized selected job characteristic and measure with selected technology characteristics instead of technostress. Second, our study examined for the first time the relationship between technostress and employee engagement and we adopted the unidimensional approach to measuring employee engagement importantly to provide the greatest basis for theory and construct validation test. (Smith, McCarthy & Zapolski, 2009) Likewise, it increases the precision of the understanding of the phenomenon of employee engagement and its relationship with technostress.

Limitations and future research

Despite the intriguing finding of our study, parallel to other studies in this area (Suh & Lee, 2017; Tarafdar et al., 2015; Jena, 2015; Fuglseth & Sørebø, 2014; Yan et al., 2013; Ayyagari et al., 2011; She et al., 2011). This study used a cross-sectional and self-reported data. This limits the conclusions that we can make about causality and raises concern for common bias. Additionally, there may be sample biases because survey respondents are from Nigerian commercial banks, therefore results may not be generalized across different countries and industries, hence future research can replicate this study in another country and industry using longitudinal study. Future research may also expand the technostress-job design and employee engagement model, by including the social and job context characteristic of job design (e.g. banking policies, career development, working hours, supervision, interpersonal relationship).

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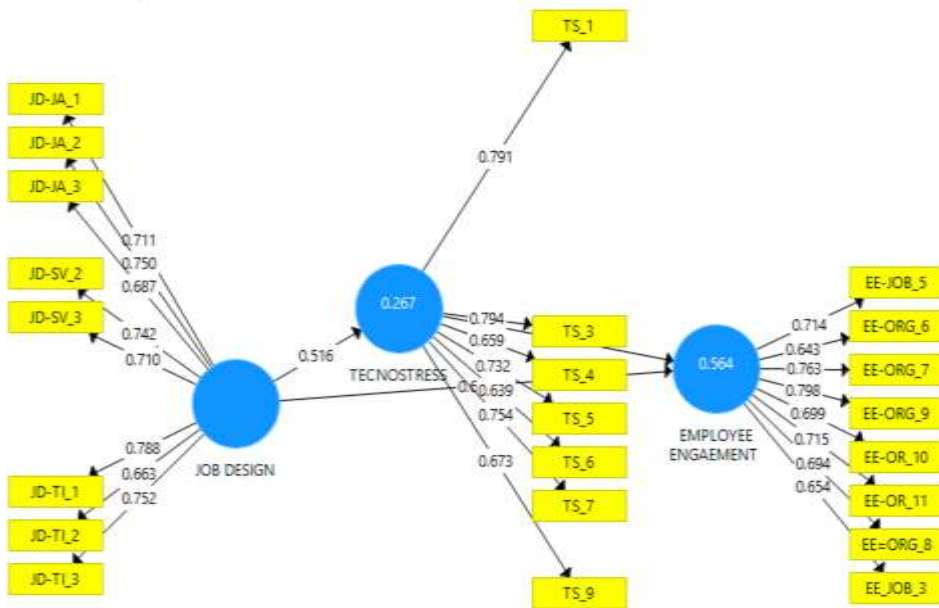
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Appendixes

Path Coefficients

	Mean, STDEV, T-Values, P-Values		Confidence Intervals		Confidence Intervals Bias Corrected	
	Original Sampl...	Sample Mean (	Standard Devia...	T Statistics (|O...	P Values	
JOB DESIGN ->...	0.607	0.608	0.044	13.950	0.000	
JOB DESIGN ->...	0.516	0.517	0.046	11.137	0.000	
TECNOSTRESS ...	0.229	0.233	0.049	4.700	0.000	