

The Influence of Theory of Planned Behaviour on Work-Life Extension among Healthcare Professionals in Nigeria: Data Screening and Preliminary Analysis

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Abstract:*The acute scarcity of health professionals, especially registered nurses and registered midwives in Nigeria has provoked the government to suggest a policy to extend these healthcare providers' work-life after retirement. Nonetheless, not much is known about the intention and subsequent preparation among the selected healthcare providers to extend their work-life after retirement. This study's objective was to conduct data screening and preliminary analysis of some carefully chosen theory of planned behaviour constructs (attitude, subjective norm, perceived behavioural control, intention, and preparation). The study used a cross-sectional survey and a simple random sampling technique to gather data. A total of 515 questionnaires were sent to the prospective respondents, and 446 filled and usable questionnaires were retrieved and used for further analysis. The data was screened and cleaned using statistical package for social science (SPSS) v24 to fulfil multivariate analysis's fundamental assumptions, emphasizing reliable, acceptable, error-free data, and a clear interpretation of results. Explicitly, the current study carried out data screening through assessing response rate, missing values, and outliers—also, the study screens normality, multicollinearity, nonresponse bias, and common method variance. The outcome of the study demonstrated the dataset satisfied all the conditions for further multivariate analysis. The study's findings will be significant to researchers, health professionals, and policymakers vested with the responsibility of ensuring Nigeria's society's health and wellbeing. Thus, this paper recommends that the current dataset explore the association between the predictor variables and the criterion variable(s).*

Keywords:*Data screening, the theory of planned behaviour, work-life extension, healthcare professionals*

INTRODUCTION

Data screening is an essential aspect of any multivariate analysis, laying the foundation for the quantitative study (Hair, Hult, Ringle & Sarstedt, 2014 & Gorondutse & Hilman, 2014 & Babagana, Mat & Ibrahim, 2019). Specifically, data screening is a noteworthy stage for reflection among investigators in the discipline of social sciences and applied sciences

(Abdulwahab, Zulkhairi & Galadima, 2011 & Hair et al., 2014). It is imperative to identify any possible violation of multivariate analysis assumptions via data screening (Hair et al., 2014 & Yusuf, Chea, & Rabiul, 2019). Consequently, the study results and acceptability consistency depend on data screening, although sometimes researchers skip the initial crucial analysis stage because of its burden (Abdulkadir, Zabedah, & Aidi, 2017, Badara & Zabedah, 2014). In quantitative studies, failure to perform initial data screening will frequently lead to low reliability and research (Gorodutse et al., 2014).

According to Hair et al. (2014), Tabachnick and Fidell (2013), and Abubakar and Muhammad (2020), data screening could be carried out through editing the original data stored in the computer file when the dataset is small. However, when the data set is large, data screening requires more complex computer software. Thus a powerful computer software will be needed, including a statistical package for social science (SPSS) and smartPLS. The SPSS and smartPLS computer software are essential software that provides quick and precise statistical analysis results (Tabachnick et al., 2013). Computer software also reveals secret errors that mere proofreading could not be found (Hair et al., 2014 & Abdulkadir et al., 2017).

Similarly, the process of data screening increases the researcher's knowledge of the interaction between the variables of particular research (Hair et al., 2014). Thus, it is noted that studies' strength to make meaningful inferences primarily lies in the researchers' ability to conduct a thorough and meaningful data screening and preliminary analysis (Badara et al., 2014 & Shehu & Mahmood, 2014). The data screening method also enables unambiguous interpretation of the study's result and satisfies multivariate data analysis (Hair Jr. et al., 2014 & Abdulkadir et al., 2017).

The rationale for carrying out this research was to validate that multivariate analysis's main assumptions have not been violated before conducting the study's critical investigations. The initial analysis is in continuation of a pilot study carried out to determine the reliability and the validity of the research constructs that the results established (Muhammad, Suleman, Abubakar, Tajudeen, 2020). Thus, this study's objective was to assess the data gathered concerning the influence of attitude, subjective norms, perceived behavioural control on intention, and preparation to extend work-life after retirement among healthcare providers (nurses and midwives) in Nigeria. For that reason, the study examined the data collected regarding the theory of planned behaviour and correlated issues on data screening and preliminary analysis to confirm its suitability (e.g., Hair et al., 2014).

Specifically, the study verifies that multivariate analysis's basic assumptions were not violated before the primary research. The caution is crucial because ignoring the preceding part of preliminary data analysis would affect the study's result value and the suitability of the type of analysis required (Hair et al., 2014). So, based on Hair et al. (2014)'s recommendation on the need to conduct data screening and preliminary analysis, this study examined response rate, missing values, and outliers. Also, the study examined normality, multicollinearity, nonresponse bias, and common method variance test. This study was structured into the following: section one consists of the introduction, section two problem statements, followed by a literature review in section three. Section four deliberates on the methods and material for the study. Next, section

five presents the result of the preliminary analysis. Finally, section five offers a conclusion and recommendations.

Problem Statement

As a part of strong multi-disciplinary healthcare teams, nurses and midwives have an important influence on delivering primary healthcare close to the community (WHO, 2019). Nurses and midwives account for nearly 50% of the global health workforce (WHO, 2019). However, in the worldwide context, shortages in healthcare services have become more widespread in nursing and midwifery practitioners, expected to decrease from the existing 9 million by 2030 to 7.6 million; within the next 20 to 30 years, this condition will dominate global healthcare (Duffield, Graham, Donoghue, Griffiths, Bichel-Findlay & Dimitrelis 2014 & Perry, Xu, Duffield, Gallagher, Nicholls, Sibbritt 2017).

According to the World Health Organization (WHO, 2019), at least 2.5 nurses and midwives are required for 1,000 people to provide adequate coverage with primary healthcare intervention. Also, the most massive needs-based shortages of nurses and midwives are in South East Asia and Africa. In line with the preceding, Monaco has the highest value for nurses and midwives globally, estimated at 20.26. In contrast, Somalia has the least number of healthcare providers, estimated at 0.06 per population.

Nigeria is one of the worst-hit by the shortage of nurses and midwives (NMCN, 2020), as indicated below, in Table 1. An estimate shows that, in 2013, Nigeria has a 1.45 nurses and midwives ratio per 1,000 population (WHO, 2019). Also, by 2015, there were 1.03 nurses per 1000 people and 0.67 midwives per 1000 population (Peter, Oya-ita, Robert, Anthony, Francis, & Patrick, 2015). The health workers' shortage is perhaps due to a high population growth rate in Nigeria, with the current rate estimated to about 200 million (WHO, 2019). Also, perhaps Nigeria is currently experiencing a shortage of nurses and midwives due to the growing requirements for registered nurses and midwives (RNs & RMs). The current workforce is aging and retiring (Petr et al. 2015 & Markowski, Cleaver, & Weldon, 2016). However, not much is known about the intention and subsequent preparation among the selected healthcare providers to extend their work-life after retirement. A constructive approach to support older people over a more extended retirement period and sustain retirement services is to allow RNs and RMs to work or bridge employment after retirement (Markowski et al. 2016). After retirement from one's primary profession, extending skilled employment needs part-time or full-time jobs, either in the same area or in another work (Duffield et al. 2014 & Markowski et al., 2016).

Therefore, for all nations to achieve Sustainable Development Goal 3 on health and wellbeing, WHO (2019) approximates that the world will need an extra 9 million nurses and midwives by 2030. According to the Nursing and Midwifery Council of Nigeria, achieving health for all is contingent on the availability of a well-trained and regulated workforce. Also, for the nurses and midwives to be efficient, they need to be supported and retained where necessary (NMCN, 2020).

Amazingly, involvement in the extension of professional practice is usually a decision made before retirement. It is irregular for individuals to engage suddenly in preparation after retirement (Duffield et al. 2014). Individuals who want to extend their work-life after retirement are more likely to be interested in work-life after retirement (Duffield et al. 2014, & Wonpen & Karl, 2019). Intention to take up employment after retirement and preparation tasks will also help retire workers be allocated and updated about jobs when they are available (Uthaman, Chua, & Yuh, 2015 & Markowski et al., 2016). Background information on individuals' purpose to extend their work-life can help employees and companies plan for late-career development and management (Markowski et al., 2016).

The predictors of intentions to take up jobs after retirement have been examined by several studies (Uthaman et al., 2015; Behera, Behera, & Prutipinyo, 2020 & Dobek, 2020). However, only a few studies (Duffield et al., 2014 & Peng & Min, 2020) have concentrated on the influence of attitude, subjective norms, perceived behavioural control on intention, and older employees' actual preparation post-retirement jobs. Studies (Uthaman et al., 2015, Wonpen et al., 2019 & Peng et al., 2020) have explored predictors of work-life extension intentions; the researchers only scrutinized a limited number of predictors (e.g., lighter and more flexible working environments, not being respected, job demand exclusion). Even at that, the preceding researches have not paid emphasis on data screening and preliminary analysis.

The previous research (Duffield et al., 2014) suggests future studies on nurses' and midwives' intention to extend work-life to concentrate on replicating studies in multiple samples in an area distinct from the Asia and United States. Previous studies (Peng et al., 2020) also indicate that future studies on real employment preparation should focus on researching predictors such as financial, health, and family commitments, among others. It is crucial to remember that the behaviours, values, and aspirations of individuals regarding the intention and real preparation to extend the work-life will influence the retirement decisions of individuals (Behera et al., 2020 & Peng et al., 2020). Nevertheless, theory, such as the theory of planned behaviour (TPB) and experience is still needed to understand the cognitive perspective and actual readiness to extend work-life after retirement and to bridge the previous knowledge gaps on the influence of aged employees' mentality and cognition precisely regarding the intention and actual preparation to extend-work-life.

Table 1: Statistics of Registered Nurses and Midwives in Nigeria from 2016-2019

| S/N | Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total as of June 2020 |
|-----|------------------------------|-------|-------|-------|-------|-------|-----------------------|
| 1 | General Nurses | 4,921 | 6,299 | 4,922 | 6,084 | 3,465 | 190,927 |
| 2 | Midwives | 2,609 | 3,353 | 4,351 | 4,409 | 1,283 | 126,863 |
| 3 | Mental/Psychiatric Nurses | 291 | 197 | 209 | 247 | 168 | 8,752 |
| 4 | Public Health Nurses | 496 | 548 | 893 | 790 | 99 | 10,116 |
| 5 | Public Health Nurse Educator | 0 | 35 | 5 | 4 | 4 | 199 |
| 6 | Nurse Educators | 96 | 194 | 216 | 263 | 69 | 4,312 |
| 7 | Midwives Educators | 45 | 63 | 73 | 64 | 10 | 1,204 |
| 8 | Nurse Administrators | 1 | 19 | 11 | 12 | - | 1,328 |

| | | | | | | | |
|----|-------------------------------|-------|--------|--------|--------|-------|---------|
| 9 | Orthopedic Nurses | 98 | 14 | 70 | 107 | 52 | 1,759 |
| 10 | Nurse Anesthetics | 65 | 88 | 78 | 223 | 81 | 1,765 |
| 11 | Perioperative Nurses | 278 | 144 | 191 | 169 | 169 | 4,314 |
| 12 | Ophthalmic Nurses | 142 | 45 | 90 | 223 | 121 | 1,909 |
| 13 | Accident and Emergency Nurses | 146 | 44 | 99 | 93 | 122 | 2,218 |
| 14 | Pediatric Nurses | 90 | 49 | 109 | 248 | 174 | 1,755 |
| 15 | Cardio-Thoracic Nurses | 30 | 2 | 28 | 58 | 26 | 421 |
| 16 | Burns and Plastic Nurses | 27 | 29 | 20 | 58 | 20 | 46 |
| 17 | Occupational Health Nurses | 1 | 0 | 0 | 0 | 6 | 178 |
| 18 | Otorhinolaryngology Nurses | 6 | 25 | 68 | 152 | 46 | 719 |
| 19 | Critical Care Nurses | 69 | 63 | 47 | 91 | 58 | 731 |
| 20 | Nephrology Nurses | - | - | - | - | 41 | 81 |
| 21 | Licensed Community Midwives | 15 | 161 | 111 | 38 | 24 | 549 |
| | Grand Total | 8,740 | 12,333 | 11,588 | 13,275 | 6,038 | 360,361 |

Sources: Nursing and Midwifery Council of Nigeria (2020).

Literature Review

The TPB has been successfully applied to early retirement research (Wonpen et al., 2019) and retirement preparation (Peng et al., 2020) as a relevant and commonly used psychological theory to explain individuals' intention and preparation in such behaviour. The TPB proposes that a person's intention to conduct a behaviour is the product of attitude, subjective norm, and perceived behavioral control (Ajzen, 2011 & Muhammad & Abubakar, 2020a). The intent to act also defines the likelihood of one's actual behaviour (Muhammad & Abubakar, 2020b). The impact of intention, therefore, influences the actual preparedness of individuals to work after retirement. The TPB has been applied to research early retirement and retirement intention (Griffin, Loe, & Hesketh, 2012 & Muhammad & Abubakar, 2020c). However, the theory has not been used to study the influence of attitude, subjective norm, and perceived behavioural control on elderly health workers' intent, resulting in real preparation for extending work-life after retirement. Therefore, the current study used TPB to assess the influence of attitude, subjective norms, and perceived behavioural control on the intent and subsequent work-life preparation after retirement among aged nurses and midwives in Nigeria.

Attitude

Attitude towards behaviour implies the degree to which the individual has a satisfactory evaluation of the specific action (Ajzen, 2011). Aged employees intend to prepare for work-life after retirement based on TPB's premise when they have employment after retirement right attitude. Previous studies have assessed the influence of attitude on individuals' early retirement (Van Dam, Van der Vorst, and Van der Heijden, 2009 & Peng et al., 2020). For example, Van Dam et al. (2009) found a positive association between early retirement attitudes and workers' early retirement intentions. Previous research (Muhammad & Abubakar, 2020a) has confirmed that positive attitudes positively predict individuals' intention to carry out a particular action.

Subjective Norm

The TPB also implies that subjective norms may contribute to a person's intention to carry out a particular action (Ajzen, 2011 & Muhammad, 2018). Subjective norm means what other individuals (closed by associates, family members, excreta) think about the success of specific actions and the degree to which such actions were accepted by the significant others (Ajzen, 2011 & Muhammad & Abubakar, 2020b). The present study delineates subjective norms based on the above conceptualization by Ajzen (2011) as the perceived degree to which one's significant other views his/her engagement in employment and how significant others are likely to support one's preparations in work-life after retirement. One's significant others' influence is essential for one's career changes; it should be remembered. Thus, for example, the encouragement of the next of kin or otherwise may significantly affect people's retirement decisions (Markowski et al., 2016). Aged employees are more likely to leave early while under pressure from their next of kin than people without pressure (Maresova, Prochazka, Barakovic, Barakovic. and Kuca, 2020). Griffin et al. (2011) have found that older employees often choose to engage in retirement preparation because they feel it would be accepted by their next kin and close friends or expect them to do so. If a wife or husband thinks they have insufficient retirement assets, then the wife or husband should strongly support the worker's work-life extension after retirement.

Perceived Behavioural Control

Perceived behavioural control refers to the perceived ease or complexity of carrying out a given action (Ajzen, 2011 & Muhammad & Abubakar, 2020b). Self-efficacy and controllability are perceived behavioural controls (Ajzen, 2011), which imply one's confidence in variables that can promote or hinder behavioural success (Muhammad & Abubakar, 2020b). According to Garcia, Milkovits, and Bordia (2014), the self-efficacy of working at and past the age of 60 predicts older workers' propensity to seek paid jobs beyond 60. Therefore, when older workers believe that they are out of reach of the decision and ability to engage in employment after retirement, they are not likely to participate in the work. Sketchy evidence also suggests that a positive correlation exists between perceived early retirement behavioural control and one's intention to retire early (Van Dam et al., 2009).

Intention refers to the individual or group's plans and actions with specific challenges intended to find a solution to a particular problem (Muhammad & Md Dahlan, 2020). Moreover, behavioural intention involves commitments from the personalities who face distinct challenges; in that, the individuals must be ready to accept that they want to make progress by getting recommendations from experts to improve their status (Ajzen, 2011 & Peng et al., 2020). The preceding definition of the intention concept signifies that aged employees intend to work after retirement by demonstrating their interest through gathering information about potential employers that could retain or engage their services.

This study suggests that attitude, subjective standard, and perceived control to work after retirement are positively related to employment after retirement intentions. Since the chance of actual preparation for a career is affected by one's intention to participate in that activity (Ajzen, 2011 & Muhammad & Md Dahlan, 2020), work-life after retirement intentions represents an

essential concept on employment after actual retirement preparation (Griffin et al., 2012). Consequently, in line with the theory (Ajzen, 2011) and study (Peng et al., 2020), this study suggests that work-life after retirement intention influences actual preparation to extend work-life after retirement.

Based on the preceding discussion, there are few studies (Ajzen, 2011, and Garcia et al. 2014, Markowski et al., 2016, and Peng et al., 2020) that examined the five constructs of attitude, subjective norms, perceived behavioural control, intention and actual preparation among RNs and MWs in Nigeria. There is no single study that examines the influence of the constructs on extending work-life after retirement among the sampled health care providers in Nigeria to this researchers' knowledge.

Therefore, this study's objective was to explore the data collected regarding the influence of attitude, subjective norms, perceived behavioural control, intention, and subsequent preparation to extend work-life after retirement among healthcare providers (nurses and midwives) in Nigeria. Specifically, the study focuses on the data collected about planned behaviour theory and related issues on data screening and preliminary analysis to confirm its suitability (Hair et al., 2014).

Methods and Materials

This study primarily conducted data screening and preliminary analysis to satisfy the assumptions of multivariate analysis, which focuses on ensuring reliability, acceptability, error-free data, and unambiguous interpretation of results, in line with the recommendation Hair et al. (2014). Thus, this study used a descriptive cross-sectional survey research design and simple random sampling to explore the perceived influence of attitude, subjective norm, perceived behavioural control on intention, and preparation to extend work-life after retirement among RNs and RMs in Nigeria. This study used the sample population of 40 years and older registered nurses and midwives in Nigeria by sending a recruitment email to them. Out of the 515 questionnaires distributed to the healthcare providers, a total of 446 questionnaires were retrieved and usable, representing an 86.6% response rate. In contrast, 69 questionnaires were not functional and, therefore, were discarded. The study employed three items of questionnaire associated with extending work-life after retirement among the nurses and midwives. The study questionnaire was adapted from the prior researches of Griffin et al. (2012), Ramayah, Rouiba, Gopi & Rangel (2009), and Peng et al. (2020). The questionnaire's items were designed and administered through a 5 point Likert scale, in which the healthcare providers were required to answer strongly disagree, disagree, neutral, agree, and strongly agree. Professors from Universiti Utara Malaysia (UUM), and Usmanu Danfodiyo University, Sokoto, Nigeria, examined the study items' face and content validity; the measurement items were found appropriate for the study. Also, using SPSS software v24, the adapted instruments' reliability was examined, which the result shows as 0.90, 0.92, 0.89, 0.89, and 0.91 for attitude, subjective norm, perceived behavioural control, intention, and preparation, respectively.

Results and Discussions

Demographic Characteristics of the Respondents#

Table 2 shows the analysis of the demographic characteristics of the study's respondents. The result shows that the majority, 333 (74.7%) of the respondents, are 56 years above, while the least respondents, 113 (25.3%), are within the age range 40-55 years old. This result is similar to the findings of Peng et al. (2020) and Uthaman et al. (2015).

Again, about the respondents' genders, Table 2 shows that the majority, 224 (50.2%), are male, while the least 222 (49.8%) are female, suggesting that majority of the respondents of this study are male. This finding is inconsistent with those of other studies such as Duffield et al. (2014) and Markowski et al. (2016).

Table 2: Characteristics of the Respondents (n=446)

| Demographic Variables | Categories | Frequency | Percentage |
|-----------------------|-------------------------------|-----------|------------|
| Age | 40-55 years | 113 | 25.3 |
| | 56 years above | 333 | 74.7 |
| Gender | Male | 224 | 50.2 |
| | Female | 222 | 49.8 |
| Educational status | Registered Nurse | 196 | 43.9 |
| | Registered Midwife | 80 | 18.0 |
| | RN/RM | 170 | 38.1 |
| Work Pattern | Day Work | 391 | 87.7 |
| | shift work | 55 | 12.3 |
| Position | Chief Nursing Officer | 238 | 53.4 |
| | Assistant Director of Nursing | 118 | 26.5 |
| | Director of Nursing | 90 | 20.1 |
| Income per month | N150000-250000 | 385 | 86.3 |
| | N251000-350000 | 61 | 13.7 |

Furthermore, concerning the respondents' educational qualification, the result of this study shows that the majority of the sample, 196 (43.9%), are registered nurses. In comparison, the least 80 (18.0%) are registered midwives. Regarding work patterns, most of the respondents, 391 (87.7%), run day work, while the least of the 55 (12.3%) respondents run shift work. The initial finding is similar to the finding elsewhere by Peng et al. (2020). Again, the majority, 385 (86.3%) earned N150000-250000 (approximately USD 397-659 per month) concerning the respondents' monthly income. While, the least 61 (13.7%) respondents earned N251000-350000 (USD 661-923 per month).

Thus, from the above preliminary result, the respondents' age, coupled with their salary earning, may well be essential variables in influencing the intention and actual preparation for work-life after retirement among the nurses and midwives.

Response Rate

Earlier, this study indicated that 515 questionnaires were collected, and 446 were productive for further analysis. The response rate of this study translated into 86.6%. The preceding result implies that 69 questionnaires were not filled correctly; thus, they were finally removed from further data screening and preliminary analysis. Consequently, the valid response rate of this study was still 86.6%. Therefore, the above response rate is adequate for the conduct of this study based on the suggestion of Hair et al. (2014). The preceding scholars contend that a 30% response rate is acceptable for further analysis.

Missing Value

A researcher comes across missing value in a study when the study respondents refused to answer some questions (Hair et al. 2014). Missing values create problems in data analysis (Hair et al. 2014). Therefore, it is essential for the investigator always to identify and replace missing values (Hair et al. 2014). In the dataset coded and entered into SPSS by these investigators, eight were missed randomly from the 8,474 data points that explained 0.094 percent missing values. Specifically, the constructs of attitude had two missing values, subjective norm had one missing value, perceived behavioural control had three missing values, the intention had two missing values, and preparation had 0 missing values.

Although there is not a specific percentage of missing values that are allowable in a data set for making valid statistical inferences, however, researchers believe that in a dataset, missing values that attain the rate of 5% or less should be replaced (Tabachnick and Fidell. 2013). Researchers have also recommended that mean substitution is the easiest way to substitute missing values (Tabachnick et al. 2013). Hair et al. (2014), for example, suggested that an investigator should replace the missing entries through the mean substitution if the values are less than 5% missing values to each item. Therefore, these investigators substituted eight missing values through mean replacement.

Table 3: Total and Percentage of Missing Values

| Variable | Number of Missing Values |
|--------------------------------|---------------------------------|
| Attitude | 2 |
| Subjective norm | 1 |
| Perceived behavioural control | 3 |
| Intention | 2 |
| Preparation | 0 |
| Total number of missing values | 8 out of 8,474 data points |
| Percentage | 0.094% |

Note: Percentage of missing values were obtained by dividing the total number of missing values for the whole data by the total number of data points multiplied by 100

Assessment of Outliers

Outliers are the observations that are inconsistent with the remaining data (Hair et al., 2014). In data analysis, outliers' presence can enormously lead to estimates' distortions, consequently creating a result that is not dependable (Hair et al., 2014). Firstly, to detect observations outside the SPSS value labels due to improper data entry, these investigators displayed frequency tables for all the variables through minimum and maximum statistics. Hence, based on the primary analysis of frequency statistics, no value is outside the expected range.

Besides, apart from the use of minimum and maximum statistics, data were assessed for the presence of univariate outliers through the standardized value criterion with a cutoff mark of ± 3.29 ($p < 0.01$), that is in line with the views of Tabachnick et al. (2013). Thus, using the preceding criterion, univariate outliers were not found from the dataset, and the final datasets were 446. After checking univariate outliers via standardized values, the study also assessed multivariate outliers, using Mahalanobis distance (D2). Mahalanobis distance (D2) is the distance of an item from the centroid of the extraordinary things, in which the centroid is the point made by the meeting of means of all the variables on the dataset (Tabachnick et al. 2013). From the 19-1=18 observed items of the current study's variables, the chi-square suggested threshold is 30.14 ($p=0.05$). Therefore, in this study, no Mahalanobis value exceeds the threshold of 30.14 because the highest was 19.32. From the preliminary result of Mahalanobis D2, no outlier was found from the dataset. Hence, the final data utilized for further analysis was 446.

Normality Test

Normality refers to distributing data towards a particular variable and its compliance to a normal distribution (Hair et al., 2014). In recent times, Hair et al. (2014) proposed that researchers carrying out quantitative studies need to conduct a normality test on their data since highly skewed or kurtotic data can impact bootstrapping. By causing it to swell bootstrapped standard error estimation, by implication, this undervalues the importance of path coefficients (Hair et al., 2014).

There are two methods for assessing normality, i.e., statistical and graphical techniques. Specifically, to establish data normality of the current study, skewness and kurtosis statistics were used (Hair et al., 2014). Though the study sample is more significant than 200, such as the present study with 446 samples, the deviation from the normality of skewness and kurtosis sometimes may not show a fundamental variation in the analysis (Tabachnick et al., 2013). Furthermore, Hair et al. (2014) argue that when the total value of skewness is more than two, and kurtosis value more significant than seven could indicate a problem. A preliminary analysis of normality conducted for the entire items used in the present study showed the absolute value for skewness is 1.58, and kurtosis is 3.41, suggesting that both values are within the accepted range of $< 2 < 7$, respectively.

Multicollinearity Test

Multicollinearity refers to a situation in which one or more predictor or independent variables are significantly correlated (Hair et al. 2014). The lack of multicollinearity is an essential supposition of multiple regressions. Examination of multicollinearity is one of the preliminary analyses that need to be carried out in regression analysis. Nonetheless, in statistical analysis, predictor variables are likely to be correlated with their matching outcome or dependent variable (Hair et

al., 2014). But, when one predictor variable is positively associated with one or numerous other predictor variables, at that moment, multicollinearity arises (Hair et al. 2014).

The occurrence of multicollinearity among exogenous latent constructs can significantly distort the outcome of regression coefficients and their significance test (Hair et al. 2014). Precisely, multicollinearity increases the coefficient's standard errors, thereby causing the coefficients to be statistically insignificant (Tabachnick et al. 2013). To identify multicollinearity, the current study used two techniques. In the first technique, the correlation matrix of exogenous latent constructs was examined. Hair *et al.* (2014) estimate that when correlation coefficients are 0.90 and above, it shows multicollinearity between the constructs. Table 4 shows the correlation matrix of the exogenous latent constructs used in the current study. The correlation among the exogenous latent constructs was satisfactorily below the threshold values of 0.90, suggesting that all the constructs are autonomous and not significantly correlated.

Table 4: Correlation Matrix of the Exogenous Latent Construct

| | Construct | 1 | 2 | 3 | 4 | 5 |
|----|-------------------------------|----------|----------|----------|----------|----------|
| 1. | Attitude | 1 | | | | |
| 2. | Subjective norm | .16 | 1 | | | |
| 3. | Perceived Behavioural Control | .39 | .62 | 1 | | |
| 4. | Intention | .47 | .52 | .48 | 1 | |
| 5. | Preparation | .33 | .61 | .50 | .63 | 1 |

Also, in the second method of multicollinearity analysis, Tolerance and VIF were considered. Hair et al. (2014) recommended that multicollinearity is challenging if the value of VIF is more significant than five, while Tolerance values are less than 0.20. On the other hand, Pallant (2010) proposed that Tolerance values less than 0.10, and VIF values beyond ten show high collinearity. So, the outcome in Table 5 indicates that there is no multicollinearity among the exogenous latent construct because the result shows the tolerance values between 0.456 to 0.532, considerably higher than 0.1 (for tolerance), and the VIF ranges from 2.01 to 2.31, substantially less than 10.

Table 5: Multicollinearity Test based on Tolerance and Variance Inflated Factor (VIF)

| Exogenous variable | Tolerance | VIF |
|---------------------------|------------------|------------|
| Knowledge | .532 | 2.31 |
| Attitude | .461 | 2.21 |
| Compliance | .456 | 2.01 |

Nonresponse Bias

Nonresponse bias refers to the difference in replies between respondents and non-respondents (Hair et al., 2014). To examine the probability of nonresponse bias, a time-trend estimation technique is needed that compares the early and late respondents, i.e., non-respondents (Sekaran & Bougie, 2013). Significantly, late respondents have related characteristics as non-respondents

(Hair et al., 2014). Therefore, to reduce nonresponse bias, at least a response rate of 50% is essential (Hair et al., 2014).

From the suggestions of Sekaran et al. (2013), these investigators divided the respondents into two groups, namely: those that responded within the first four weeks period (early respondents) and those that responded after four weeks (late respondents). Table 6 indicated that 394 respondents (88.3%) who are the majority in the sample responded to the questionnaire within four weeks, while 52 respondents (11.7%) who are the least responded over the next four weeks.

This study conducted an independent sample t-test to determine the possibility of nonresponse bias. Precisely, an independent samples t-test was performed to detect nonresponse bias in the primary constructs of interest, namely, attitude, subjective norm, perceived behavioural control, intention, and preparation. Table 6 below presented the results of the independent-samples t-test of the present study.

Table 6: Non-response Bias Independent Samples T-test Result

| Construct | Group | N | Mean | SD | Levine's Test for Equality of Variance | |
|-------------------------------|-------|-----|------|------|--|------|
| | | | | | F | Sig. |
| Attitude | Early | 394 | 5.51 | 1.00 | .243 | .623 |
| | Late | 52 | 5.86 | .945 | | |
| Subjective norm | Early | 394 | 3.76 | .883 | .162 | .687 |
| | Late | 52 | 4.12 | .940 | | |
| Perceived behavioural control | Early | 394 | 2.99 | .763 | .117 | .733 |
| | Late | 52 | 3.29 | .800 | | |
| Intention | Early | 394 | 4.03 | .398 | .737 | .391 |
| | Late | 52 | 4.46 | .322 | | |
| Preparation | Early | 394 | 3.36 | .756 | .210 | .148 |
| | Late | 52 | 3.78 | .855 | | |

From the Table above, it is obvious that the mean and standard deviation for early and late respondents differed in general. It can be observed the 2 tailed t-test result establishes no significant difference concerning the early and late respondents based on attitude ($t = 0.243$, $p < 0.623$), subjective norm ($t = 0.162$, $p < 0.687$), perceived behavioural control ($t = 0.117$, $p < 0.733$), intention ($t = 0.737$, $p < 0.391$), and preparation ($t = 0.210$, $p < 0.148$). Therefore, based on Levine's test results, it can be concluded that no very significant difference exists between the early and late respondents; as such, this study has no problem of nonresponse bias, as indicated in Table 5. Also based on the approval of Hair et al. (2014), who stated that the minimum response rate in a research paper must be at least 50%, and since this paper attained a valid response rate of 86.6%, so, in the current research, nonresponse bias is not a significant concern.

Common Method Variance Test

The common method variance (CMV) refers to the differences attributed to measurement methods rather than the variance credited to the investigator's construct (MacKenzie & Podsakoff, 2012, & Podsakoff, MacKenzie, & Podsakoff, 2012). Usually, researchers believe that CMV is an issue for investigators who use a self-report survey (i.e., a method where respondents are asked questions about their perceptions) (Hair et al., 2014) because it can inflate the relationships between variables that are measured by self-reports.

The current study had taken many measures to minimize the effects of CMV based on the commendation of MacKenzie et al. (2012). First, to lessen assessment anxiety, respondents were informed that there are no wrong or right answers to the researchers-administered questionnaire; both responses are useful. Also, the participants were assured of the concealment of their responses generated. Second, the items used in measuring the respondents' perceptions were improved upon by making sure all the questions in the survey questionnaires are written in simple, brief, and straightforward language to lessen biases in the current study.

Third, the current study conducted Harman's single factor test recommended by MacKenzie et al. (2012) to analyze common method variance. Generally, the procedure for analyzing CMV involves exposing the study variables to exploratory factor analysis. The result of the un-rotated factor is examined to identify the precise number of elements necessary to explain the variables' variance (MacKenzie et al., 2012). Harman's (1967) single factor assessment's central assumption is that when a massive amount of common method variance exists, two things occur. First, a single factor may appear. Second, a general factor appears that would explain the bulk of the covariance in the predictor and criterion variables (MacKenzie et al., 2012 & Podsakoff et al., 2012). Based on the initial assumption, all the 19 items of the present study were exposed to a principal components factor analysis. The research outcome generated ten factors, which explains a cumulative of 68.7% of the variance. The first that is the largest factor explained 35.2% of the total variance; that is less than 50% (Podsakoff et al., 2012).

The result also shows that no single factor explains the majority of covariance in the independent and dependent variables. Consequently, the output indicates that common method bias is not an issue in the current study, and it is not likely to inflate the relationships between measured variables.

VI. Conclusion and Recommendations

This study reviewed some extant literature on the various issues under investigation. The research also presented the screening of data and preliminary analysis to fulfil the assumption of multivariate analysis. The outcome of the analysis confirmed that respondents have vital knowledge regarding the study's demographic variables. More crucially, the research indicates that the eight missing values discovered in the data set were substituted through mean substitution. It is also essential to appreciate that mean substitution is appropriate for replacing missing values in a dataset with 5% or less (Hair et al., 2014).

Also, outliers were examined through Z-scores and Mahalanobis Distance (D2), respectively. A systematic scrutiny of the dataset showed that no univariate or multivariate outlier was

discovered. Also, a normality test was conducted to determine the normal distribution of the dataset through statistical technique. Based on the study's objective, the analysis's outcome showed the assumption of normality was fulfilled; since the data is neither skewed nor kurtotic.

Also, concerning multicollinearity, Pearson's correlation indicates that the association between the exogenous variables is within the suggested threshold by Hair et al. (2014). The preliminary result implied that multicollinearity is not a problem between the exogenous constructs. Also, regarding nonresponse bias, this study shows no significant difference between the early and late responses, implying that nonresponse bias is not a problem.

Consequently, the preliminary outcome has established that the current study's dataset is appropriate for the upcoming stages of the multivariate analysis, including hierarchical and multiple regressions analyses. Thus, this paper recommends that the current dataset be used to explore more the association between the predictor variables and the criterion variable(s)

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