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Influence of organisational formal control, group norms, self-regulatory efficacy on workplace deviance in the Nigerian universities: Data screening and preliminary analysis

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Abstract

This article explored the data collected regarding the influence of organisational formal control, group norms and self-regulatory efficacy on workplace deviance in the Nigerian universities. Three hundred and fifty four teaching staff from various universities located in north-west geopolitical zone of Nigeria completed a self-administered questionnaire on 4-point Likert-scales. The data was analyzed using Statistical Package for the Social Sciences (SPSS) application package version 18. An initial data screening and preliminary analysis was performed in order to satisfy the assumptions of multivariate analysis. Subsequently, the assessment of missing values, outliers, normality test and multicollinearity test were performed. It was concluded that the data was fit for further multivariate analysis.

Keywords: Organisational Formal Control, Group Norms, Self-Regulatory Efficacy, Workplace Deviance; Data Screening

1. Introduction

An initial data screening is very crucial in any multivariate analysis because it helps researchers in identifying any possible violations of the key assumptions regarding the application of multivariate techniques of data analysis (Hair, Money, Samouel, & Page, 2007). Additionally, initial data screening helps researchers to better understand the data collected for further analysis. To date, scientific investigations have been largely been carried out without initial data screening and preliminary analysis probably due to the burden attached to it (Hair, Black, Babin, & Anderson, 2010). Such neglect is unfortunate because, overlooking of the initial data screening would seriously inflate the standard error estimates (Chernick, 2008), which in turn underestimate the statistical significance of a regression-based path coefficients (Dijkstra, 1983; Ringle, Sarstedt, & Straub, 2012).

Against this background, the following preliminary data analyses were performed: (1) missing value analysis (2) assessment of outliers (3) normality test and (4) multicollinearity test (Hair et al., 2007; Tabachnick, & Fidell, 2007). In so doing, the remainder of this paper is organized as follows. In section 2, a detailed literature review regarding the subject matter was carried out. In section 3, we highlighted the method used in the present study, followed by presentation of the results in section 4. In the final section, conclusion was drawn based on the findings of the study.

Several factors have been suggested to explain why employees engage in deviant behaviour at the workplace. One of the key determinants of employee deviant behaviour is related to the organization. According to Robbins and Judge (2010), organizational factors are an important consideration in understanding employee attitude and behaviour at work because they are able to shape the way employees think, feel, and behave. To date, some of the organizational-related factors that have been considered include perceived organisational politics (Bodla, & Danish, 2011; Byrne, 2005), perceived organizational justice (De Lara,
Verano-Tacoronte, 2007; Devonish, & Greenidge, 2010), organizational trust (Elangovan, & Shapiro, 1998), job stress (Fox, Spector, & Miles, 2001; Penney, & Spector, 2005), organizational support (Colbert, Mount, Harter, Witt, & Barrick, 2004; Ferris, Brown, & Heller, 2009) and psychological contract breach (Restubog, Bordia, & Tang, 2007), among others.

Despite the aforementioned empirical studies on the role of organizational system and process in shaping employee behaviour at work, literatures indicate that less attention has been paid to the influence of organizational formal control on workplace deviance. Even if there are studies on control and workplace deviant behaviour, the studies were limited to examining specific types of workplace deviant behaviours such as cyberloafing and theft at the workplace. Considering specific types of workplace deviant behaviours will not allow better understanding of the variety of deviant behaviours employees engage in at work.

Prior research has generally agreed that lax control systems such as performance appraisal, reward and disciplinary systems and special monitoring of employees in organizations, are more effective at controlling behaviour than in other organisational factors (de Lara, Tacoronte, & Ding, 2006; Hegarty, & Sims, 1978; Vardi, & Wiener, 1996). However, as mentioned earlier, less attention has been paid to the influence of organizational formal control on workplace deviance. Such neglect has been unfortunate because to a large extent, control systems, directly influence employee’s decisions whether to engage in or stay out of deviant acts (Vardi, & Wiener, 1996). Hence, control systems are crucial for the accomplishment of organizational goals and objectives.

In addition to organisational formal control that is purportedly able to influence the occurrence of deviant workplace behaviour, work groups play an important role in the socialization process of employees. Basically, employees learn the do’s and don’ts of their group in order to be accepted. Human beings by nature seek to be accepted by others (McClelland, 1987; Packer, 2008). Additionally, people who have a strong need for affiliation enjoy being part of a group and tend to conform to the group’s norms in order to be liked and accepted by other members of the group (Christensen, Rothergerber, Wood, & Matz, 2004; McClelland, 1987; Packer, 2008; Smith, & Mackie, 2007; Smith, Hogg, Martin, & Terry, 2007). Hence, it is reasonable to expect that deviant behaviour could be shaped by the group norms. Previous studies have generally revealed that a group norm is associated with organizational citizenship behaviour (Ehrhart, & Naumann, 2004; Moorman, & Blakely, 1995), group performance (Gellatly, 1995; Janick, & Bartel, 2003; Ng, & Van Dyne, 2005), and organisational performance (Cai, & Yang, 2008; Langerak, 2001) among others. Despite the theoretical and empirical efforts to understand the influence of work group norms on employee

Empirical studies have also documented the effects of self-regulatory efficacy in minimizing the tendency for an individual to engage in deviant behaviour. For example, consistent with the social cognitive theory (Bandura, 1999), Caprara, Scabini, Barbaranelli, Pastorelli Regalia, and Bandura (1998) found that students who were low in self-regulatory efficacy and academic self-efficacy are more likely to engage in antisocial conduct and substance abuse. Similarly, Caprara, Regalia and Bandura (2002) found that students who were high in self-regulatory efficacy were less likely to engage in violent conduct such as fighting, vandalism, or used weapons. Hence, in line with these previous studies, it is reasonable to argue that the extent to which organisational formal control and workgroup norms influence workplace deviant behaviour vary, depending upon an individual self-regulatory efficacy. Despite the theoretical role of self-regulatory efficacy in controlling individual behaviour at work, to date, there is paucity of research examining such possibility, as previous studies mainly looked at students’ behaviour.

2. Methods
2.1 Participants and procedures

This study focuses mainly on north-west geopolitical zone of Nigeria for the following reasons. Firstly, other geopolitical zones of Nigeria, particularly the north-east geopolitical zone, comprising of Adamawa, Bauchi, Borno, Gombe Yobe, and Taraba States were not covered by this study because of Boko Haram insurgency. Boko Haram “is an extremist Islamic sect in Nigeria that has created havoc across the north of the country and in the capital, Abuja. Its violent attacks on government offices, the United Nations, and churches threaten to destabilize the country” (Djurkovic et al., 2008, p. 1). Because of these unfortunate crises in this geopolitical zone schools including universities were shut down until further notice as the leader of Boko Haram calls for more attacks on schools (Hogh et al., 2011; McCormack et al., 2009). Thus, based on the statistics obtained from Report of the Needs Assessment of Nigerian Universities, as at November 1, 2012,
there were 5,752 teaching staff members in 11 universities located in north-west geopolitical zone of Nigeria. By referring to the sample size table generated by Krejcie and Morgan (1970), for a given population of 5,752, a sample size of 361 would be required to represent the population of this study. To further minimize the low response rate from uncooperative respondents, the sample size of 361 was increased by 50% as suggested by Salkind (1997). Adding this percentage to 361 gave 542, which was rounded up to 600. Overall, a total of 412 questionnaires collected and of these 412 questionnaires, 58 were unusable and the remaining 354 useable questionnaires were used for further analysis, thereby obtaining a valid response rate of 59%. Hence, response rate of 59% is considered adequate for the analysis, because, Sekaran, (2003) suggested that a response rate of 30% is sufficient for surveys.

Furthermore, of 354 participants, majority of the respondents in the sample; that is 243 (69.2%) were males, while the remaining 108, representing 30.8% were females. Majority of participants were Lecturer II (32.4%), followed by Lecturer I (23.5%); Assistant Lecturers (13.5%); Graduate Assistants (6.9%); Senior Lecturers (11.5%); Readers (10%); and Professors (2.3%). In terms of job tenure, a high proportion of the respondents (36.1%) spent 11 years and above working in university, (29.5%) spent between 6 -10 years in the university, another 24.9% spent between 1-5 years working in the university, while the remaining 9.5% had less than 1 year in the university. A high proportion of the respondents comprised of Masters Degree holders, which accounted for 71.1% or 248 respondents. This is followed by those respondents (approximately 16%) with first degree, while the remaining 46, representing 13.2% were Doctorate Degree holders. The vast majority of the respondents, representing 43.6% were Yorubas; 36.1% were Hausa/Fulani; 12.9% were Igbo and the remaining 7.4% represents ethnic minority groups.

2.2 Measures

We measured perceived descriptive norms using the using the subscales of the Peer Norms Scale (Hansen, & Graham, 1991), which is a 3-item, 4-point Likert scale ranging from 1 (none of them) to 4 (most of them). Examples of item include “How many of your colleagues do you think have utilized university’s or institution’s property for self-fish/private gain during the past 30 days?” On the other hand, we also measured perceived injunctive norms using items from Hansen and Graham’s (1991) Peer Norms Scale. Similarly, the measure is a 3-item 4-point Likert-type scale ranging from 1 (strongly disapprove) to 4 (strongly approve). Examples of perceived injunctive norms subscale items is “How would your colleagues’ response if you reported to class late without giving prior notice to students once in a while?”

3. Results and discussion

Prior to initial data screening, all the returned and usable questionnaires were coded and entered into the Statistical Package for Social Sciences (SPSS) version 18.0. In addition, all the negatively worded items in the questionnaires were reversed. Subsequent to data coding and entry, the following preliminary data analyses were performed: (1) missing value analysis (2) assessment of outliers (3) normality test and (4) multicollinearity test (Hair et al., 2007; Tabachnick, & Fidell, 2007).

3.1 Missing value analysis

In the original SPSS dataset, out of the 21,948 data points, 37 had randomly missing values, which accounted for 0.17%. Specifically, perceived behaviour control and organisational deviance have 5 missing values each. Likewise, perceived injunctive norms and interpersonal deviance were having 8 missing values each. On the other hand, perceived outcomes control had 4 missing values; perceived descriptive norms with 7 missing values; and no missing value was found in self-regulatory efficacy. Although, there is no acceptable percentage of missing values in a data set for making a valid statistical inference, researchers have generally agreed that missing rate of 5% or less is insignificant (Schafer, 1999; Tabachnick & Fidell, 2007). Furthermore, researchers have suggested that mean substitution is the easiest way of replacing missing values if the total percentage of missing data is 5% or less (Little, & Rubin, 1987; Raymond, 1986; Tabachnick, & Fidell, 2007). Hence, in this study, randomly missing values were replaced using mean substitution (Tabachnick, & Fidell, 2007). Table 1 shows the total and percentage of randomly missing values in the present study.

Table 1: Total and percentage of missing values
### Latent variables

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Number of missing values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived behaviour control</td>
<td>5</td>
</tr>
<tr>
<td>Perceived outcomes control</td>
<td>4</td>
</tr>
<tr>
<td>Perceived descriptive norms</td>
<td>7</td>
</tr>
<tr>
<td>Perceived injunctive norms</td>
<td>8</td>
</tr>
<tr>
<td>Self-regulatory efficacy</td>
<td>0</td>
</tr>
<tr>
<td>Interpersonal deviance</td>
<td>8</td>
</tr>
<tr>
<td>Organisational deviance</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37 out of 21,948 data points</strong></td>
</tr>
</tbody>
</table>

**Percentage**: 0.17%.

**Note**: Percentage of missing values is obtained by dividing the total number of randomly missing values for the entire data set by total number of data points multiplied by 100.

### 3.2 Assessment of outliers

Outliers have been defined by Barnett and Lewis (1994) “as observations or subsets of observations which appear to be inconsistent with the remainder of the data” (p. 7). In a regression-based analysis, the presence of outliers in the data set can seriously distort the estimates of regression coefficients and lead to unreliable results (Verardi, & Croux, 2008). In order to detect any observation which appears to be outside the SPSS value labels as a result of wrong data entry, first, frequency tables were tabulated for all variables using minimum and maximum statistics. Based on this initial analysis of frequency statistics, there was no any value found to be outside the expected range. Next, the data were examined for univariate outliers using standardized values with a cut-off of ±3.29 (p<.001) as recommended by Tabachnick and Fidell (2007). Following Tabachnick and Fidell’s (2007) criterion for detecting outliers, 15 cases were identified using standardized values as potential univariate outliers. In particular, these 15 cases identified were: (case 4, 5, 10, 104, 112, 194, 202, 232, 241, 263, 270, 271, 323, 350, and 352) as presented in Table 2

#### Table 2

*Outliers identified based on standardized values*

<table>
<thead>
<tr>
<th>Item</th>
<th>Cases with standardized values exceeding ± 3.29</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDB01_1</td>
<td>4</td>
</tr>
<tr>
<td>IDB04_1</td>
<td>5, 10</td>
</tr>
<tr>
<td>ODB10</td>
<td>104, 112</td>
</tr>
<tr>
<td>ODB11_1</td>
<td>194</td>
</tr>
<tr>
<td>PBC06_1</td>
<td>202</td>
</tr>
<tr>
<td>PBC08_1</td>
<td>232, 241</td>
</tr>
<tr>
<td>PDN01_1</td>
<td>263</td>
</tr>
</tbody>
</table>

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Furthermore, in order to decide on whether outliers should be deleted or retained, the present study adopted similar approach used in the study of Bartholmé (2011). This approach entails assessing the effect of identified outliers on the overall measures of the variables (i.e., the mean and standard deviation) (Bartholmé, 2011). Table 3 presents the effect of identified outliers on the overall measures of the variables.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean Incl. 15 cases</th>
<th>Mean Excl. 15 cases</th>
<th>Difference</th>
<th>SD Incl. 15 cases</th>
<th>SD Excl. 15 cases</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDB01_1</td>
<td>2.40</td>
<td>2.40</td>
<td>0.00</td>
<td>0.813</td>
<td>0.801</td>
<td>0.012</td>
</tr>
<tr>
<td>IDB04_1</td>
<td>2.07</td>
<td>2.06</td>
<td>0.01</td>
<td>0.775</td>
<td>0.772</td>
<td>0.003</td>
</tr>
<tr>
<td>ODB10</td>
<td>2.25</td>
<td>2.25</td>
<td>0.00</td>
<td>0.486</td>
<td>0.488</td>
<td>-0.003</td>
</tr>
<tr>
<td>ODB11_1</td>
<td>2.84</td>
<td>2.83</td>
<td>0.01</td>
<td>0.681</td>
<td>0.680</td>
<td>0.001</td>
</tr>
<tr>
<td>PBC06_1</td>
<td>2.35</td>
<td>2.34</td>
<td>0.01</td>
<td>0.719</td>
<td>0.724</td>
<td>-0.005</td>
</tr>
<tr>
<td>PBC08_1</td>
<td>2.58</td>
<td>2.57</td>
<td>0.01</td>
<td>0.848</td>
<td>0.846</td>
<td>0.002</td>
</tr>
<tr>
<td>PDN01_1</td>
<td>2.51</td>
<td>2.49</td>
<td>0.02</td>
<td>1.113</td>
<td>1.119</td>
<td>-0.006</td>
</tr>
<tr>
<td>PDN02_1</td>
<td>2.81</td>
<td>2.79</td>
<td>0.02</td>
<td>1.084</td>
<td>1.097</td>
<td>-0.012</td>
</tr>
<tr>
<td>PIN03_1</td>
<td>3.35</td>
<td>3.34</td>
<td>0.01</td>
<td>0.938</td>
<td>0.941</td>
<td>-0.004</td>
</tr>
</tbody>
</table>

Note: SD represents Standard Deviation

As indicated in Table 3, the results show that while 15 cases were identified as potential univariate outliers on 9 items, however, no strong effect on the overall measures of the variables was found even after excluding 15 cases from the entire datasets. According to Hair et al. (2010), cases “should be retained unless demonstrable proof indicates that they are truly aberrant and not representative of any observations in the population” (p. 200). Hence, in order to increase the generalizability to the entire population, the 15 cases identified as potential univariate outliers were retained for further multivariate data analysis (Hair et al., 2010).

3.3 Normality test

Previous research (e.g., Cassel, Hackl, & Westlund, 1999; Reinartz, Haenlein, & Henseler, 2009; Wetzels, Odekerken-Schroder, & Van Oppen, 2009) has traditionally assumed that PLS-SEM provides accurate model estimations in situations with extremely non-normal, however, this assumption may turn to be false. Recently, Hair, Sarstedt, Ringle and Mena (2012) suggested that researchers should perform a normality test on the data. Highly skewed or kurtotic data can inflate the bootstrapped standard error estimates (Chernick, 2008), which in turn underestimate the statistical significance of the path coefficients (Dijkstra, 1983; Ringle et al., 2012).
Against this background, the present study employed graphical method to check for the normality of data collected (Tabachnick, & Fidell, 2007). Field (2009) suggested that in a large sample of 200 or more, it is more important to look at the shape of the distribution graphically rather than looking at the value of the skewness and kurtosis statistics. Field (2009) added that a large sample decreases the standard errors, which in turn inflate the value of the skewness and kurtosis statistics. Thus, this justified the reason for using graphical method of normality test rather than the statistical methods.

Following Field’s (2009) suggestion, in the present study, a histogram and normal probability plots were examined to ensure that normality assumptions have not been violated. Figure 1 depicts that data collected for the present study follow normal pattern since all the bars on the histogram were closed to a normal curve. Thus, Figure 1 indicates that normality assumptions have not been violated in the present study.

![Figure 1 - Histogram and normal probability plots](image)

### 3.4 Multicollinearity test

Multicollinearity refers to a situation in which or more exogenous latent constructs become highly correlated. The presence of multicollinearity among the exogenous latent constructs can substantially distort the estimates of regression coefficients and their statistical significance tests (Chatterjee, & Yilmaz, 1992; Hair, Black, Babin, Anderson, & Tatham, 2006). In particular, multicollinearity increases the standard errors of the coefficients, which in turn render the coefficients statistically insignificant (Tabachnick, & Fidell, 2007).

To detect multicollinearity, two methods were used in the present study (Chatterjee, & Yilmaz, 1992; Peng, & Lai, 2012). First, the correlation matrix of the exogenous latent constructs was examined. According to Hair, et al. (2010), a correlation coefficient of 0.90 and above indicates multicollinearity between exogenous latent constructs. Table 4 shows the correlation matrix of all exogenous latent constructs.

### Table 4  

**Correlation matrix of the exogenous latent constructs**

<table>
<thead>
<tr>
<th>No.</th>
<th>Latent constructs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perceived behaviour control</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Perceived outcomes control</td>
<td>.019</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Perceived descriptive norm</td>
<td>-.042</td>
<td>-.050</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Perceived injunctive norm</td>
<td>.013</td>
<td>-.021</td>
<td>.175**</td>
<td>1</td>
</tr>
</tbody>
</table>

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

As shown in Table 4, the correlations between the exogenous latent constructs were sufficiently below the suggested threshold values of 0.90 or more, which suggests that the exogenous latent constructs were
independent and not highly correlated. Following the examination of correlation matrix for the exogenous latent constructs, variance inflated factor (VIF), tolerance value and condition index were further examined to detect multicollinearity problem. Hair, Ringle and Sarstedt (2011) suggested that multicollinearity is a concern if VIF value is higher than 5, tolerance value is less than 0.20 and condition index is higher than 30. Table 5 shows the VIF values; tolerance values and condition indices for the exogenous latent constructs.

Table 5
Tolerance and Variance Inflation Factors (VIF)

<table>
<thead>
<tr>
<th>Latent constructs</th>
<th>Collinearity Statistics</th>
<th>Condition Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
<td>VIF</td>
</tr>
<tr>
<td>Perceived behaviour control</td>
<td>.998</td>
<td>1.002</td>
</tr>
<tr>
<td>Perceived outcomes control</td>
<td>.997</td>
<td>1.003</td>
</tr>
<tr>
<td>Perceived descriptive norm</td>
<td>.965</td>
<td>1.036</td>
</tr>
<tr>
<td>Perceived injunctive norm</td>
<td>.969</td>
<td>1.032</td>
</tr>
</tbody>
</table>

The results in Table 5 indicated that multicollinearity does not exist among the exogenous latent constructs as all VIF values were less than 5, tolerance values exceeded 0.20 and condition indices were below 30 as suggested by Hair et al. (2011). Thus, multicollinearity is not an issue in the present study.

4. Conclusion

As missing values were properly checked, multivariate outliers had been examined and data revealed that normality assumptions have not been violated and multicollinearity indicated that no significant violation of assumptions in the present study. Thus, it can be concluded that the data was fit for further multivariate analyses, including the assessment of the measurement model, assessment of the structural model and post hoc analysis.

References


