



## The role of personality and Intrapreneurial Behavior on Individual Performance: Data Screening and Preliminary Analysis

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### Abstract

The purpose of this study is to screen the data of the study and conduct a preliminary analysis on the relationship between personality and intrapreneurial behavior and individual performance of ME middle managers in Nigeria. A sum of 646 questionnaires were distributed to middle managers of medium enterprises in Nigeria. The proportionate stratified sampling method was used; equally all necessary processes were followed to satisfy the multivariate analysis assumptions. Thus, the missing data assessment, univariate and multivariate outliers and the kurtosis and skewness were checked. Likewise, the internal consistency, convergent validity and discriminant validity were all tested. The data were arranged in the Statistical Package for Social Science (SPSS) software version 24, and later transferred to PLS version 3 for screening and preliminary analysis respectively. The result shows the data satisfies the multivariate analysis assumptions which indicates the fulfillment of conditions for further multivariate analysis.

**Keywords:** personality, intrapreneurial behavior, individual performance, middle managers, medium enterprises and Nigeria.

### 1.0 INTRODUCTION

Medium Enterprises (MEs) are fundamental to the creation of employment, as well as the social and economic progression of all countries (Mahmoud, 2015; Mahmoud & Muharam, 2014; Mahmoud, Muharam, & Mas'ud, 2015). But the global market has been ferocious that require MEs to make persistent innovative adjustments to meet the customer requests (Baruah & Ward, 2014). This has exerted pressure on firms to make every effort towards sustainability (Ahmad, Nasurdin, & Zainal, 2012), because preceding feat may not be guaranteed in the future (Musa, Abd Ghani, & Ahmad, 2011). However, the survival and advancement of firms profoundly rest on the performance of managers and staff (Ermalina, Hendriani, & Efni, 2017), particularly the production/operation middle managers. Competitive pressures can therefore be tackled by managers with high individual performance (Jyoti & Dev, 2017), since organizational aims

are attained only through staff performance (Kumari, Kumar, & Reddy, 2017).

Personality factors (Barrick, Parks, & Mount, 2005; Fang et al., 2015; Ghani, Yunus, & Bahry, 2016; Hogan & Holland, 2003; Hurtz & Donovan, 2000; Judge, Rodell, Klinger, Simon, & Crawford, 2013; Judge & Zapata, 2015; Lee & Olshfski, 2002; Raza & Ahmed, 2014; Sackett & Walmsley, 2014; Salgado, 1997) and intrapreneurial spirit (Ahmad et al., 2012; Bakar, Mahmood, Ramli, & Saad, 2016) were believed to boost the performance of managers. Nonetheless, the workforce in factor driven and efficiency driven economies like Nigeria have a dearth engagement to intrapreneurial activities (Bosma et al., 2013). Yet, studies that put these factors in to a unified framework i.e. to give more explanation on how these variables influence performance have not been witnessed. It is therefore important to conduct data screening, preliminary analysis, reliability and validity analysis before further multivariate analysis are conducted. Hence, this paper presents the preliminary analysis of the causes of middle manager individual performance in Nigerian MEs.

### 2.0 LITERATURE REVIEW

#### 2.1 Individual Performance

Individual performance (IP) is the accrued value to the organization from the distinct behavioral manifestations that is accomplished by an employee over a standard interval of time (Motowildo, Borman, & Schmit, 1997). IP is the estimated value of individual actions in organizations which are apposite to increasing the effectiveness of organizations (Tabiu, Pangil, & Othman, 2016). Individual performance is simultaneous to organizational performance (Koopmans et al., 2011) and organizational competitive advantage (Sonntag & Frese, 2002). Several academics settled that, managers performance have a significant impact on the collective success of organizations (Gberevbie, 2010a, 2010b; Khan & Jabbar, 2013; Rafiei,



Amini, & Foroozandeh, 2014; Sonnentag & Frese, 2002; Susanty & Miradipta, 2013).

Employee selections are ordinarily built on selecting nominees that are much likely to perform better. Various explanations were used to measure performance of particular kind of workers, but a generic measurement was recently introduced and validated for white collar, blue collar and pink collar employees (Koopmans et al., 2014).

### 2.3 Intrapreneurial Behavior

The intrapreneurial behavior (IB) concept was derived from the concept of Entrepreneurial Orientation (EO), the concept is labelled as employee behavior which is represented by innovativeness, taking risk, and proactiveness (Antoncic & Hisrich, 2003; Covin & Slevin, 1991; Taştan & Güçel, 2014). IB the combination of staff innovativeness, proactiveness and taking risk, (De Jong et al., 2011). EO differs with IB only by the level analysis, while the earlier focused on the firm level analysis the later focuses on the employee level of analysis.

MEs need to foster IB so as to grasp novel opportunities for auspicious performance (Hayton, 2005). A number of researchers have shown the importance of IB in influencing individual performance for managers and employees (Ahmad et al., 2012; Bakar & Mahmood, 2014; Bakar et al., 2016; Fellnhöfer et al., 2016; Ismail, Mahmood, & Ab Rahim, 2012; Stewart, 2009).

### 2.4 Personality

Personality traits are referred as the average level of a person's state of conscientiousness, emotional stability, openness to experience, agreeableness, and extraversion that may change through circumstances and events, partly confronted randomly, chosen partway on purpose or aggravated by the person (Fleeson, 2001).

Conscientiousness is the socially premeditated impulse that expedites task directed and goal directed bearings (John et al., 2008). Emotional stability or Neuroticism conveys the control of emotion and or even-temperedness with adversative emotionality (John et al., 2008). Openness to experience refer to magnitude of imagination of an individual (Abdullah et al., 2016). Disagreeableness is the level to which a person disagrees with other individuals (Abdullah et al., 2016). Extraversion is the energetic approach that relates to the material and social biosphere (John et al., 2008).

Ones et al. (2007) shows the personality and performance cogency relationship. Personality and

performance were found related through all tiers of managerial, professional clusters, and performance outcomes (Barrick & Mount, 1991; Barrick, Mount, & Judge, 2001; Hertz & Donovan, 2000). Similarly, it was broadly ascertained that personalities are predict performance effectively (e.g., Chamorro-Premuzic & Furnham, 2010; Ones, Dilchert, Viswesvaran, & Judge, 2007). Most of the personality dimensions affect individual performance significantly in diverse professions (Barrick et al., 2005; Fang et al., 2015; Ghani et al., 2016; Hogan & Holland, 2003; Hertz & Donovan, 2000; Judge et al., 2013; Judge & Zapata, 2015; Lee & Olshfski, 2002; Raza & Ahmed, 2014; Sackett & Walmsley, 2014; Salgado, 1997). Nevertheless, result discrepancies motivate further research across professions for the FFM dimensions (Barrick et al., 2001, 2005; Hertz & Donovan, 2000; Morgeson et al., 2007; Salgado, 1998; Salgado, 1997).

### 3.0 RESEARCH METHODOLOGY

The sample of this study was taken from Nigerian medium enterprises (MEs) using stratified proportionate probability sampling method. Hence, 353 usable responses were recovered from the production/operations managers of MEs in Nigeria. This segment also provides the assessment of data with the aid of descriptive and inferential statistics by means of SPSS software version 24 and Partial Least Square software PLS. For instance, descriptive indicators, Mahalanobis distance, and correlation analysis were involved.

### 4.0 RESULT AND DISCUSSION

Out of the 643 distributed questionnaires to the population of 2,014 ME middle managers, 407 questionnaires were returned out of which 355 usable questionnaires were reimbursed indicating a 55% usable response rate. This satisfies the requirements of a representative sample which was computed by the Krejcie and Morgan (1970) method.

#### 4.1 Descriptive Analysis

The descriptive statistics was utilized to examine the profile of the respondents. 343 respondents i.e. 96.6% are male respondents, respondents with 25-34 years of age took 65.6%. Likewise, 70.7% of the respondent's possessed a Degree/HND qualification and 65.1% worked for less than 5 years, 82.5% of the managers similarly served less than 5 years in present position. 95.5% of the managers serve in the manufacturing MEs. Lastly, 55.5% of the managers served in Northwest region MEs while 44.5% work in the Southwest MEs.



#### 4.2 Test of None Response Bias

Non-response bias is the common mistake that a researcher expect to make in assessing the sample characteristics because some group of the respondents may be underrepresented as a result of non-response. There is no least response rate lower than which a survey could be unavoidably biased

and, however, there is no response rate beyond which it is not ever biased (Singer, 2006). The respondents were divided into early and late response groups with regards to the seven study variables. Responses received within one month were classified as early responses while those received after a month were classified as the late responses.

Table 4.1 T- test for nonresponse bias

Variables	Responses	N	Mean	SD	t-value	Sign		
Performance	Early	260	4.852	4.871	.2324	.2037	-0.70	0.15
	Late	95						
Intrapreneurial Behavior	Early	260	4.800	4.838	.2615	.2323	-1.24	0.13
	Late	95						
Conscientiousness	Early	260	4.711	4.770	.3033	.3016	-1.62	0.66
	Late	95						
Extraversion	Early	260	4.622	4.684	.3092	.3110	-1.69	0.85
	Late	95						
Disagreeableness	Early	260	4.657	4.691	.3572	.3643	-0.79	0.34
	Late	95						
Emotional Stability	Early	260	4.562	4.641	.4058	.3422	-1.69	0.06
	Late	95						
Openness to Experience	Early	260	4.647	4.634	.3325	.3137	0.34	0.24
	Late	95						

Source: The researcher

Table 4.1 presents the independent samples t-test for the early and late responses. The results indicated that; group mean and standard deviation for both early and late responses were basically not different. However, the result of t-test shows no significant difference between results of early and late responses since the p values for all variables are not significant ( $p < 0.05$ ). Hence, the result indicates the data is free from non-response bias effect.

#### 4.2 Getting Data Ready for Analysis

##### 4.2.1 Coding

The coding is conducted to aid the identification of items; thus each and every item was numbered in the questionnaire development process which will facilitate the keying of data. The coding is based on the respective variable name.

##### 4.2.2 Data Editing

The editing of data begins by checking the returned questionnaires for incomplete responses. All questionnaires returned unanswered were removed. Additionally, questionnaires with more than 25% unanswered questions should be discarded, whereas, less than 25% unanswered questions should be considered as missing value cases.

##### 4.2.3 Recording

The wording of some items such as item 3 for intrapreneurial behavior, item 2, 4, 5 and 9 for

conscientiousness, item 2, 5 and 7 for extraversion, item 2, 4, 5, 7 and 9 for disagreeableness, item 1, 3, 4, 6 and 8 for emotional stability as well as item 7 and 9 for openness to experience were negatively revised to help in reducing the response bias. The processes delineated by Pallant (2010) were followed.

#### 4.3 Missing Data

Missing data is absence of a suitable response value on one or many variables for the data (Hair Jr., Black, Babin, & Anderson, 2010). Hair Jr. et al. (2010) stated that any case with missing value above 50% should be erased as long as the adequate sample is achieved. Precautionary actions were taken in this research to make the data free from missing values. On receipt of any completed questionnaire, the researcher promptly check to make sure every question is answered appropriately. The attention of respondents is drawn if any of the questions is not responded so as to complete the question appropriately. This therefore, helped significantly in ensuring that their no missing value in this study. Preliminary descriptive statistics was however conducted to discover if any missing data exist or not. The result of this descriptive statistics shows that their no missing value, therefore, no need to delete any of the responses.

#### 4.4 Assessment of Outliers



Outliers are cases whose responses are significantly divergent from most of the respondents in a particular data set (Hair Jr., Hult, Ringle, & Marko Sarstedt, 2017). The univariate outliers could be identified through the observation of z score which must be within the range of  $\pm 3.29$  another (Tabachnick & Fidell, 2007). Any value surpassing  $\pm 3.29$  must be deleted. Thus a total of 52 cases of univariate outliers were recorded. Moreover, Mahalanobis distance was tested to locate multivariate outliers. All cases with Mahalanobis distance surpassing 92.808 (i.e. for the 72 items) at 0.05 degree of freedom should be removed. However, no single case of multivariate outlier was recorded. The remaining 355 responses were thus considered for further multivariate analysis.

#### 4.5 Normality Test

Tabachnick and Fidell (2007) proclaimed that one of the basic assumptions for regression analysis is that the variables must be normally distributed. Normality is generally gauged by either statistical or graphical methods. The basic techniques of statistical normality are the skewness and kurtosis. But for the graphical method, normality is determined through the histogram residual plots; which denotes to the shape of data distribution of the variables and their correspondence to normal distribution. The residuals are normally and independently distributed if the assumption is met (Tabachnick & Fidell, 2007). The normality assumption was diagnosed in this study through

Table 4.2 Tolerance and VIF Values

Independent variables	Tolerance	VIF
Intrapreneurial Behavior	.37	2.68
Conscientiousness	.46	2.18
Extraversion	.72	1.38
Disagreeableness	.44	2.27
Emotional Stability	.70	1.44
Openness to Experience	.51	1.95

Source: The researcher

The table 4.2 shows no single case of multicollinearity because all VIF values were above 10 and tolerance values were below .10 respectively.

#### 4.7 Internal Consistency

Internal consistency refers to the level which the entire items measure the same construct on a definite scale (Sun et al., 2007). The composite reliability was employed to measure the instruments reliability in this study (Peterson & Kim, 2013). Thus any construct with a composite reliability value of .70 or above indicates a sufficient internal consistency (Hair et al., 2011).

histogram residual plots. Based on the analysis, the residual appears to be normal. The normality assumption was therefore not violated.

Likewise, the homoscedasticity test is allied to the basic normality assumption, the relationship between the variables under study is assumed homoscedastic when the data is normal, heteroscedasticity is therefore not present (Tabachnick & Fidell, 2007). Since the normality was achieved, the assumption of homoscedasticity is equally assumed to be achieved in this study.

#### 4.6 Multicollinearity

Multicollinearity is a situation in which two or above two independent variables were tremendously associated in a multiple regression model (Sekaran & Bougie, 2010). The procedure of multiple regression assumes that no explanatory variable should have a perfect linear association with another (Tabachnick & Fidell, 2007). The correlation matrix is the simplest way to detect multicollinearity of the independent explanatory variables. Thus, a correlation of 0.9 and above is considered high (Hair Jr. et al., 2010).

Another means of discovering the multicollinearity is the variance inflated factor (VIF) and tolerance value. Any VIF above 10 and tolerance value below .10 indicates a problem of multicollinearity (Hair Jr. et al., 2010). Table 4.2 below shows the VIF and the Tolerance value of the independent variables.

Table 4.3 shows all the constructs have a sufficient internal consistency. The items were adopted from previous researches: 44 items for personality (John & Srivastava, 1999), 15 items for intrapreneurial behavior (Stull, 2005) and 13 items for individual performance (Koopmans et al., 2014).

#### 4.8 Convergent Validity

Convergent validity refers to the degree in which the study items correctly represent the variables and positively correlate with measures of the corresponding construct (Hair, Black, Babin, Anderson, & Tatham, 2006). Average Variance Extracted (AVE) is employed to evaluate



convergent validity for each variable (Fornell & Larcker, 1981). The threshold of AVE for each construct must not go below .50 to achieve an adequate convergent validity (Chin, 1998). Table

4.3 shows adequate convergent validity for all the variables, with the values of AVE been above .50 for each variable.

Table 4.3 Reliability Coefficients and Average Variance Extracted

Variables	Composite Reliability	Average Variance Extracted (AVE)
Individual Performance	0.93	0.58
Intrapreneurial Behavior	0.95	0.60
Conscientiousness	0.88	0.52
Extraversion	0.89	0.53
Disagreeableness	0.88	0.51
Emotional Stability	0.85	0.52
Openness to Experience	0.91	0.57

Source: The researcher

#### 4.9 Discriminant Validity

Discriminant validity is defined as the extent to which a particular variable differs from another variable (Duarte & Raposo, 2010). The AVE is used to determine discriminant validity for this study through comparing the variables correlations with the square roots of AVE (Fornell & Larcker, 1981). The condition for this includes; all the values of AVE must be .50 or above, and the square root of AVE must be greater than the variables correlations (Fornell & Larcker, 1981).

To satisfy this conditions, table 4.3 shows that all AVE values were above .50. Likewise, table 4.4 shows all the square roots of AVE values (in bold appearance) were greater than the correlations among the variables indicating a sufficient discriminant validity (Fornell & Larcker, 1981).

Table 4.4 Correlations of Constructs and AVE Square Roots

S/No	Variables	1	2	3	4	5	6	7
1	Conscientiousness	<b>0.72</b>						
2	Disagreeableness	0.54	<b>0.73</b>					
3	Emotional Stability	0.37	0.48	<b>0.72</b>				
4	Extraversion	0.28	0.37	0.30	<b>0.72</b>			
5	Intrapreneurial Behavior	0.60	0.58	0.39	0.23	<b>0.77</b>		
6	Openness to Experience	0.52	0.68	0.46	0.46	0.48	<b>0.75</b>	
7	Individual Performance	0.47	0.48	0.29	0.26	0.68	0.41	<b>0.76</b>

Note: the bold figures represent the AVE square root.

Source: The researcher

#### 5.0 CONCLUSION

The findings of this study shows no any missing values within the data set, this is consequence to the researcher's effort in ensuring all collected questionnaires were duly checked and recorded in the data set within the shortest time possible. Moreover, multivariate and univariate outliers were treated in accordance with the suggestions of scholars (Hair Jr., Black, Babin, & Anderson,

2010; Tabachnick & Fidell, 2014). The data also satisfied the assumptions of normality, homoscedasticity and multicollinearity, thus no single case of violation is recorded. The result also testified the nonexistence of nonresponse bias between the late and early respondents. Equally, the result revealed adequate internal consistency, convergent validity and discriminant validity (Hair Jr. et al., 2017). The result therefore, confirmed the data to be worthy for further multivariate analysis.

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