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Introduction

A large body of literature has taken keen interest in the leadership aspect ranging from biographies and fiction to scientific studies and user manuals. Leadership influence is very critical in different sectors such as the government, the military, politics, corporates and NGOs. The field of leadership has been vastly tested and conceptualized in management, the military and psychology. The many research studies touching on leadership are difficult to categorize into different approaches such as styles, traits and behaviors. Stogdill (1974) illustrated the difficulties mentioned and concluded that the number of different leadership definitions is as the number of people who have tried to describe the concept of leadership. Research done in earlier times has defined the aspect of leadership with regard to the inborn traits of an individual person meaning that leadership can be considered as an innate quality. Research that has been recently done however emphasizes on 2 key behavioral functions of a leader i.e. structure initiation and consideration. Based on this the Fiedler's contingency theory has since been introduced whereby leaders practice different styles of leadership with regards to the group task situation and the interpersonal relationship nature between the followers and the leaders.

One of the most recent theories of leadership is the leader-member exchange theory (LMX) whose crucial focus is on the interaction and relationship between the subordinate and the leader/supervisor which is different from the situational styles, traits and behaviors of the leader. In order to survive the issues of the ever competitive and fluctuating global market of the current times companies require to comprehend the LMX theory and how it makes a contribution to the survival and profitability of various operations within a corporation. This research mainly emphasizes on the researching the quality of the relationship between the leaders and the members and how it affects the commitment of the employee and the OCB (organizational citizenship behavior). The results obtained in the research could actually help in various ways within the organization i.e. policy making, dealing with human resource, development of leadership and development of a more reliable company culture.

Researches which have been done before have dwelled on examining the citizenship behavior construct based on reports from leaders. Green and Wayne (1993) researched on the effects of LMX on the citizenship behavior of the employee based on the opinion of the member rather than the leader. This research extends and develops on the Green and Wayne investigation by checking on the relationship between leaders and members and the effects of organizational citizenship behavior with the main source being the member.

Leader-Member Exchange

Leaders normally treat subordinates differently at different degrees with regards to whether the subordinates are part of the high quality relationship group or the low quality relationship group (Scandura and Graen, 1987). The theory states that leaders do not uniformly interact with the subordinates since most supervisors have limited resources and time. High quality relationship subordinates do their jobs with regards to the employment contract and can be depended on by the supervisor to undertake in tasks that are unstructured, take in voluntary surplus work and engage in more responsibilities. Supervisors normally exchange positional and personal resources so that the subordinates can perform in their unstructured tasks (Cashman and Graen, 1975). Research therefore displays mutual trust, positive support, common bonds, communication that is open, high autonomy degree, better job latitude and shared loyalty which exists (Dienesch and Liden, 1986).

On the other hand, employees who only do work based on their prescribed employment contract are described as the outgroup meaning that they have low quality relationship with the leaders. According to Deluga (1998), these subordinates normally have trust and support that is limited and less rewards from their supervisors.

Commitment

Commitment refers to how the employees exhibit an attitude towards the company. Commitment stems from the employee's belief that the objectives, goals and values of the company match with their own. According to Steers et al. (1982), commitment can be referred to as the relative strength of a person's identification with and engagement in a company with regards to goals and values. Based on Ostroff (1992), employees who are committed are linked to better company performance and therefore have a low turnover rate and low absenteeism.

It is therefore critical for supervisors/leaders to comprehend the significance of building positive relations with their subordinates. The supervisor who is the leader has to clearly state the mission, vision and goals of the company/project and the role of every subordinate within the company or the project. A culture which offers such awareness provides a sense of belonging and a positive feeling of identification to the organization therefore improving the commitment of the subordinates to the company.

OCB (organizational citizenship behavior)

Near et al. (1983) investigated a 2-dimensional OCB model i.e. general compliance and altruism. The individual behavior of a person is what can be defined as altruism. Altruism can therefore include being cooperative, being helpful and various other instances of extra role behavior. It can be described as a behavior that is performed in assisting a given coworker, client or a supervisor that is not expected of the employee because it is not part of roles described within his/her employment contract.

General compliance refers to the behavior that employees are expected to exhibit such as on time arrival at work, not taking too many coffee breaks, taking the required lunch break only or not leaving early from work. According to Organ (1988) citizenship behaviors despite being discretionary are necessary since they promote reliable functioning of the company. Podsakoff et al. (1997) in their study found a positive correlation between the output of a company and the citizenship behavior.

Citizenship behavior enhances the reliability of the company by the high degree of work group performance with regards to work quality and quantity. Liden and Settoon (1996) state that members who have a quality relationship with the leaders get informal and formal rewards from their subordinates. In exchange the members seek to get extra roles in the form of offering citizenship behavior to the leaders who in turn provide more reciprocal support and opportunities to the subordinates. This cycle of helping for purposes of attaining mutual goals assists further in intensifying the quality of the relationship between the leaders and the members.

To add to this, research by Deluga (1994) shows a positive relationship between the OCB of the employee and the quality of LMX. In the same manner, Wayne and Green (1993) supports the relationship between employee citizenship behavior and LMX particularly with regards to altruism.

Results

Factor analysis

Factor analysis for the study was carried using the SPSS software which proved reliable since the factor analysis process has been automated and made simple. From the factor analysis, we were mainly interested in attaining variables which could be categorized as proper factors based on different statistics such as communalities, eigenvalue and correlations.

Descriptive statistics

The first result of the factor analysis is the descriptive statistics. The descriptive statistics information given included the mean, standard deviation and the number of cases. The number of cases analyzed for all the variables was 632. From the descriptive information available, the highest mean was of 3.84 for the question of whether the manager was an honest person. The smallest mean was of 1.16 and it was attained by two variables i.e. falsification of a receipt and threats of violence or physical abuse. Looking at the standard deviation, the variable with the highest deviation from the mean is too much time being spent on day dreaming instead of working. This means that the question had very differing opinions amongst the participants. The question with the lowest standard deviation is the question on threats of violence and physical abuse which had a standard deviation of 0.614. This means that most of the respondents did not have very differing sentiments concerning the question on threats of violence and physical abuse.

Correlation matrix

To study the correlation amongst the different factors, a correlation matrix was developed. The correlation matrix gives the correlation coefficient between a single variable and every other variable within the investigation. Correlation coefficients between every variable with itself is 1 as would be expected. For the correlation coefficients, all values with less than 0.5 are considered to be having low correlations while those with values greater than or equal to 0.5 are considered to be having strong correlations. The negative values within the correlation matrix demonstrated variables which had negative linear relationships i.e. an increase in the value of one of the variables results to a decrease in the other. One such pair is the has an eye for detail variable and needs to be the center of attention variable. From the analysis of the coefficient values, most of the values are close to zero meaning that most of the variables do not have strong correlations which is a reliable sign of a good model to be formed.

Kaiser Meyer Olkin (KMO) and Bartlett's Test

This test is used for the measurement of the strength of relationships among variables. KMO measures the adequacy of sampling which is expected to be closer than 0.5 for a satisfactory factor analysis to be performed. The result for the KMO and Bartlett's test is as shown below. Bartlett's test is another indication of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. The results for the KMO test present a superb result of 0.952 showing that the sampling is satisfactory for a factor analysis to be carried out. Bartlett's test on the other has p-value of 0.000 meaning that Bartlett's Test Of Sphericity is significant and that the significance level is small enough for us to reject the null hypothesis and conclude that the correlation matrix is not an identity matrix.

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.952
	Approx. Chi-Square		33318.074
Bartlett's Test of Sphericity	Df		3160
	Sig.		.000

Communalities

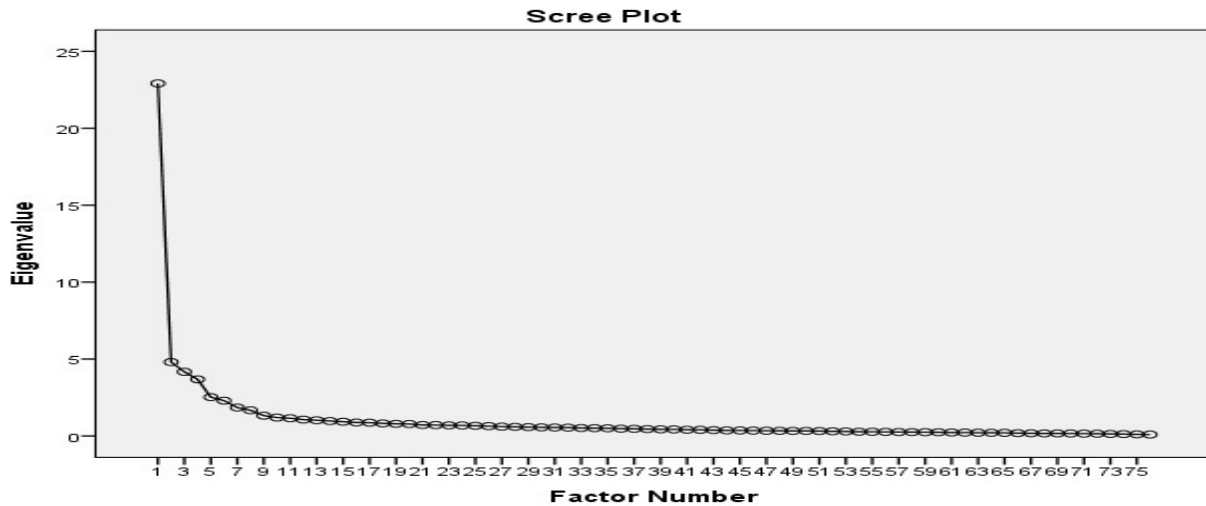
Communalities normally shows the variance extent within the variables which has been accounted for by the factors which have been extracted. Within this investigation, variable which had communality values of less than 0.2 were not considered for further analysis. The variables which were eliminated as a result of their communality values include;

- Often engages in a particular behavior in order to achieve outcomes that may not result for many years
- Is willing to sacrifice immediate happiness or well-being in order to achieve future outcomes

- Cannot resist eating sweets or biscuits if they are around
- Used an illegal drug or consumed alcohol while on the job

Scree plot

The scree plot represents a graph of eigenvalues against all factors. The graph is reliable for the determination of the number of factors to retain. The point of interest of the place at which the curve starts to flatten. This point can be seen between factor 13 and 15. Factors from 15 seem to have an eigenvalue of less than 1 therefore only 13 factors shall be selected.



Factor matrix

The factor matrix shows the loadings i.e. values which have been extracted of every item under 16 variables. The higher the absolute value of the loadings the more the factor contributes to the variable. The empty spaces within the factor matrix represents loadings which are less than 0.32. This is because all loadings that are less than 0.32 have been suppressed. The method used for the extraction of the 13 factors is the maximum likelihood method with 6 iterations necessitated. From the results obtained, the first and the second factor seem to be very influential since they highly contribute to the different variables within the study.

Goodness of fit test

The results for the goodness of fit test are as indicated below.

Goodness-of-fit Test		
Chi-Square	df	Sig.
3222.582	2000	.000

From the above results we can see that the test for independence which is the goodness of fit test is significant. This means that the factor variables are considered to be independent.

Total variance explained

To measure the total variance of the different factors, the below table has been obtained. The table gives the percentage of variance for every factor within the variables.

Total Variance Explained				
Factor	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total
1	22.281	29.317	29.317	12.904
2	4.300	5.658	34.975	11.942
3	3.816	5.021	39.996	8.999
4	2.128	2.800	42.796	6.149
5	2.094	2.755	45.552	4.996
6	2.045	2.690	48.242	7.867
7	2.176	2.864	51.106	7.518
8	1.149	1.511	52.617	12.721
9	1.140	1.500	54.117	9.069
10	.814	1.072	55.189	8.091
11	.854	1.124	56.312	6.105
12	.643	.846	57.158	4.796
13	.536	.706	57.864	4.376

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

As indicated in the table above, factor 1 has the highest percentage of variance at 29.317 percent. Factor 13 contributes the least to the variables since it has a percentage variance of 0.706.

Pattern matrix

Based on the pattern matrix, there are different variables which have been seen to have less than 3 items. These factors are excluded since the minimum number of items per factor is required to be three. The items to be removed are items; 10 and 13 which had less than 3 items attached to them. The total number of factors attained after that is 11. The information be

Factor	Items	Label
1	Has exploited others for their own gain	Psychopath (Manipulativeness) "Psychological manipulation is a type of social influence that aims to change the behavior or perception of others through abusive, deceptive, or underhanded tactics" (Wikipedia.com)
	Deceives people	
	Takes advantage of others	
	There has been an occasion when this person took advantage of someone else	
	Would do something against the law if they knew they would not get caught	
2	Not a sympathetic person	Narcissism Gillian A. (1985) describes narcissism as extreme interest in or adoration oneself or one's appearance i.e. a popular concept of self-admiration with
	Indifferent to the feelings of others	
	Not a caring person	
	Doesn't care how their emotions affect others	
	Takes bad moods out on others now and then	

		an aloofness that denies the need for another person.
3	<p>Felt capable about making decisions about things?</p> <p>Been able to face up to your problems?</p> <p>Been able to enjoy your daily activities</p> <p>Felt that you were playing a useful part in things?</p> <p>Been reasonably happy, all things considered?</p> <p>Been able to concentrate on what you are doing?</p>	<p>Wellbeing</p> <p>Thomas and Robert (2002) describe wellbeing as the state of having comfort, happiness and health.</p>
4	<p>Regards being noticed by others as important</p> <p>Needs reassuring that others think well of them</p> <p>Needs to be the center of attention</p> <p>Acceptance from other people is very important</p> <p>Believes they are destined for greatness</p>	Narcissism
5	<p>Spent too much time fantasizing or daydreaming instead of working</p> <p>Put little effort into your work</p> <p>Taken an additional or longer break than is acceptable at your workplace</p> <p>Intentionally worked slower than you could have worked</p> <p>Taken property from work without permission</p> <p>Came in late to work without permission</p> <p>Discussed confidential company information with an unauthorized person</p> <p>Neglected to follow your boss's instructions</p> <p>Dragged out work in order to get overtime</p> <p>Litter your environment</p> <p>Falsified a receipt to get reimbursed for more money than you spent on business expenses</p>	<p>Counterproductive work behavior</p> <p>Josh (2012) states that counterproductive work behavior refers to the different actions of people within an organization which aims at harming the organization.</p>
6	<p>This person's violence frightens people</p> <p>When this person disagrees with someone, they sometimes threaten them with violence</p> <p>Often drinks too much</p>	<p>Psychopath (criminality)</p> <p>Kent and Morris (2011) mention the symptoms of criminal psychopathy to include shallow affect, lack of empathy, guilt and remorse, irresponsibility, and impulsivity</p>
7	<p>Is a highly disciplined person</p> <p>Has an eye for detail</p> <p>Good at planning things in advance</p> <p>Always takes precautions</p> <p>-Finds it is worthwhile to wait and think things over before deciding</p> <p>Can always say enough is enough</p>	<p>Conscientiousness</p> <p>Conscientiousness is a spectrum of constructs that describe individual differences in the propensity to be self-controlled, responsible to others, hardworking, orderly, and rule abiding (Patrick, 2012).</p>
8	<p>-Repeated reminders of one's errors or mistakes</p> <p>Persistent criticism of one's work and effort</p> <p>Hints or signals from others that you/a colleague should quit their job</p> <p>Being humiliated or ridiculed in connection with one's work</p> <p>Excessive monitoring of your/a colleague's work</p> <p>Being ignored or facing a hostile reaction when you approach/witnessing another face a hostile reaction when they approach</p> <p>Having one's opinions and views ignored</p>	Counterproductive work behavior
9	<p>Felt constantly under strain</p> <p>Lost much sleep over worry</p>	Poor mental health

	Been feeling unhappy and depressed -Felt that you couldn't overcome your difficulties? Been losing self-confidence in yourself? -Been thinking of yourself as a worthless person?	Mind (2016) explains poor mental health as a condition which can make you feel worthless, despair, guilty, exhausted and unmotivated.
11	You/a colleague are the subject of excessive teasing and sarcasm Practical jokes carried out by people one doesn't get on with Threats of violence or physical abuse or actual abuse against you or a co-worker Having allegations made against you/witnessing allegations made against another co-worker Having insulting or offensive remarks made about one's person (i.e. habits and background), one's attitudes or one's private life -Pressure not to claim something which by right one is entitled to (e.g. sick leave, holiday entitlement, travel expenses) Been subjected to or witnessed intimidating behavior such as finger-pointing, invasion of personal space, shoving, blocking/barring the way	Bullying Bullying is repeated aggression, verbal, psychological or physical, conducted by an individual or group against another (Fapohunda T., 2013)
12	-Being ignored, excluded or being 'sent to Coventry' Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks Being ordered to do work below one's level of competence Someone withholding information which affects your/another's performance Spreading of rumors or gossip about yourself/a colleague	Counterproductive work behavior

All the above identified factors have communality values greater than 0.2 therefore we retain all the factors as significant factors which can be used for modelling. Based on the above pattern matrix 8 factors have been identified i.e. narcissism, wellbeing, psychopath (criminality), psychopath (manipulativeness), bullying, poor mental health, Counterproductive work behavior and Conscientiousness.

Multiple regression

A composite score for each factor from the EFA was computed from the mean score of items that formed the respective factor.

Variable	Mean	Standard deviation
Psychopath (Manipulativeness)	2.25	1.37
Narcissism	2.73	1.38
Wellbeing	2.05	0.85
Counterproductive work behavior	1.94	1.24
Psychopath (criminality)	1.52	1.06
Cautiousness	3.46	1.20
Poor mental health	2.08	0.94
Bullying	1.51	0.94

Moderation testing

This investigation hypothesized that wellbeing will moderate the relationship between counterproductive work behavior and poor mental health such that individuals low in counterproductive work behavior and poor mental health will have low wellbeing (1st hypothesis).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.442 ^a	.196	.166	.823
2	.558 ^b	.312	.279	.765

From the model summary we can see that the second model is better than the first model since the adjusted R square value for the second model is greater meaning that the second model accounts for a greater variation in the response variable compared to the first model. The second model also entails a lesser standard error compared to the first model therefore making the second model better.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.314	23	4.405	6.496	.000 ^b
	Residual	416.354	614	.678		
	Total	517.668	637			
2	Regression	161.435	29	5.567	9.501	.000 ^c
	Residual	356.233	608	.586		
	Total	517.668	637			

The above ANOVA results show that both of the models performed on the hierarchical regression are significant the difference only being in the R square value and the standard error value as previously indicated. From the multiple regression performed, we can conclude that the wellbeing variable moderates relationship between counterproductive work behavior and poor mental health.

Discussion

In a good number of pattern recognition applications, a large number of features are extracted so as to ensure that unknown classes are accurately classified. The best manner to solve high dimension problems is to first reduce the dimensionality of the data to size that is manageable while keeping as much of the original information as possible and then feed the reduced data into a pattern recognition system. This means that dimensionality reduction is the pre-processing stage for the pattern recognition system. To add to this, probability density estimation with fewer variables is a simpler approach for the reduction of dimensionality. Dimensionality reduction is considered very critical in compression of data, speech recognition, visualization and exploratory data analysis (Nitin, 2004).

For this particular analysis, our main interest was to reduce the dimension of the data obtained from the Leader-Member Relations survey. Factor analysis was done so as to identify and label the factors and

report the results. The analysis entailed different techniques which included the descriptive analysis of the data. From the descriptive analysis we were able to determine the number of cases which were used within the analysis, the mean and the standard deviation for the different variables identified in form of the questions asked. From the descriptive analysis we were able to identify the variables with the highest difference in opinion and those with the lowest. The variable with the highest deviation from the mean is 'too much time being spent on day dreaming instead of working' which meant that the respondents had very differing opinions concerning this particular variable. On the other hand, the variable 'threats of violence and physical abuse' had the smallest standard deviation meaning that the respondents' answers were not very different.

After the descriptive statistics the other technique employed within the factor analysis is the correlation analysis which entailed the formation of a correlation matrix that gave correlation coefficients for each of the variables with every other variable within the dataset. Based on the correlation matrix obtained it was visible that most of the variables had very weak correlation with other variables. This meant that the variables could be used to make a good model as factors. Kaiser Meyer Olkin (KMO) and Bartlett's Test were then performed to measure the sample adequacy and the strength of relationship between the variables. The result of the KMO test proved that the sample was adequate while Bartlett's Test proved that the correlation matrix is not an identity matrix i.e. the variables were not strongly related.

From the scree plot and the factor matrix, 16 variables were identified as reliable factors which could be utilized for the modeling. A pattern matrix has also been developed to identify which variables best represent the given factors. From the total variance description, the factors identified to have the most percentage variance are the first and the second factors which have been identified to represent 'Been shouted at or been the target of spontaneous anger (or rage)/witnessed a colleague being shouted at or the target of spontaneous anger' and 'exploitation of others for own personal gains'. The factor with the least percentage variance is factor 16 which has been identified to be the variable associated with breaking of rules when convenient. A multinomial logistic regression has also been done using the 16 factors identified and the end result is a statistically significant model which can be used for the prediction of the bullying variable i.e. Q19.

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